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This project was developed at the Success for All Foundation under the direction of Robert E. Slavin and Nancy A. Madden to utilize the power of cooperative learning, frequent assessment and feedback, and schoolwide collaboration proven in decades of research to increase student learning.

## ***The Reading Edge Middle Grades 2nd Edition Teacher Edition***

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### **Produced by the Reading Edge Middle Grades 2nd Edition Team**

President:	Nancy Madden
Director of Development:	Kate Conway
Rollout Committee:	Kate Conway (Chair), Mia Blom, Wendy Fitchett, Kim Gannon, Claire Krotiuk, Kristal Mallonee-Klier, Terri Morrison, Sheri Mutreja, Kenly Novotny, Peg Weigel
Program Developers:	Wendy Fitchett (Chair), Kate Conway, Victoria Crenson, Ceil Daniels, Terri Morrison
Field Advisory Team:	Kim Gannon (Chair), Jo Duplantis, Kathy McLaughlin
Contributing Developers:	Kathleen Collins, Richard Gifford, Samantha Gussow, Patricia Johnson, Austin Jones, Susan Magri, Kim Sargeant, Becca Slavin
Designers:	Michael Hummel, Austin Jones, Vic Matusak, Susan Perkins, Christian Strama
Illustrators:	Michael Hummel, Susan Perkins
Video Producers:	Jane Strausbaugh (Senior Producer), Angie Hale, Tonia Hawkins
Editors:	Janet Wisner (Supervising Editor), Marti Gastineau, Pam Gray, Jodie Littleton
Publications Coordinator:	Sheri Mutreja
Proofreaders:	Meghan Fay, Susanne Viscarra, Janet Wisner, Michelle Zahler
Production Artists:	Irene Baranyk, Kathy Brune, Wanda Jackson, Cathy Lawrence, Irina Mukhutdinova, Michele Patterson, Karen Poe, Laurie Warner, Tina Widzbor
Online Tools Developers:	Terri Morrison (Chair), Sean Christian, Patrick Coady, Mary Conway Vaughan, Tim D'Adamo, Debi Hammel, Dia Hopp, Mike Knauer, Kristal Mallonee-Klier, Vic Matusak, Christian Strama, Melissa Stroup

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*A Nonprofit Education Reform Organization*

200 W. Towson Blvd., Baltimore, MD 21204

PHONE: (800) 548-4998; FAX: (410) 324-4444

E-MAIL: [sfainfo@successforall.org](mailto:sfainfo@successforall.org)

WEBSITE: [www.successforall.org](http://www.successforall.org)



**Informational**

Unit 1

# Clarify Words and Ideas

**The Magic of Language**  
*Odyssey magazine*





**Unit 1**

Clarify  
Words  
and Ideas

**The Magic  
of Language  
Odyssey  
magazine**

The Lightning Round

- Random Reporters share team responses; team reps from other teams may agree, disagree, or add on to these responses.
- Use the following rubrics to evaluate responses and give specific feedback.
- Award points to the teams with 100-pt. responses; add the points to the Team Celebration Points poster.
- Celebrate team successes.

<b>Strategy Use</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and explains how using the strategy helped in better understanding the text.</b>
<b>90</b>	gives an 80-pt. response <b>and describes a problem and a strategy that was used to solve the problem.</b>
<b>80</b>	<b>identifies a problem that a team member had understanding the text.</b>

<b>Team Talk (oral and written)</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and connects the answer to the supporting evidence and uses academic language.</b>
<b>90</b>	gives an 80-pt. response <b>and includes supporting evidence and examples (from the text or from experience).</b>
<b>80</b>	<b>uses full sentences to clearly and correctly answer the question.</b>

<b>Word Power</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and expands on the meaning, for example, identifies</b> <ul style="list-style-type: none"> <li>• related words</li> <li>• a second meaning</li> <li>• a word connotation</li> <li>• an antonym</li> </ul>
<b>90</b>	gives an 80-pt. response <b>and explains the meaning in a definition and a meaningful sentence.</b>
<b>80</b>	<b>tells a word or phrase added to the word power journal and why it was added (what makes it important or interesting).</b>

<b>Fluency</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and reads smoothly and with expression (shows emotion and changes with punctuation and dialogue).</b>
<b>90</b>	gives an 80-pt. response <b>and reads at just the right pace to understand the text—not too slow and not too fast.</b>
<b>80</b>	<b>reads a short passage and pronounces most of the words correctly.</b>

<b>Summary</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and uses key vocabulary correctly.</b>
<b>90</b>	gives an 80-pt. response <b>and clearly connects relevant ideas in a logical order.</b>
<b>80</b>	<b>presents main ideas and important details in his or her own words and without personal opinion.</b>

<b>Graphic Organizer/Notes</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and explains how the graphic organizer helped in understanding the text.</b>
<b>90</b>	gives an 80-pt. response <b>and includes main points or events and important details.</b>
<b>80</b>	<b>selects a graphic organizer that is appropriate for the text.</b>

## C Unit Objectives

**Reading:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

**Writing:** Write a quality answer that includes supporting facts or examples.

## Unit Overview

The purpose of this unit is to teach clarifying strategies to improve your students' reading comprehension. When students clarify, they check to make sure that they understand what they have read, and then they go back to clear up anything confusing. Clarifying helps students monitor their comprehension at both the word and idea levels. Students need a variety of clarifying techniques to help them comprehend increasingly difficult text. Examples of clarifying strategies include:

- looking for familiar parts in words—base words, root words, prefixes, and suffixes.
- using context clues to figure out a word's meaning.
- rereading to review the context.
- reading ahead to add context.
- using background knowledge to make connections.
- visualizing what is going on in the text.
- using a dictionary.

This unit also introduces students to some of the student routines and rubrics in the Reading Edge. The following chart shows where these are introduced in the unit.

Cycle 1	
<b>Welcome Lesson</b>	<ul style="list-style-type: none"> <li>• Use of the team score sheet to record team name and points</li> <li>• Read and Respond homework</li> </ul>
<b>Lesson 1</b>	<ul style="list-style-type: none"> <li>• Partner reading</li> <li>• Team strategy discussion</li> <li>• Strategy-use routine for class discussion</li> </ul>
<b>Lesson 3</b>	<ul style="list-style-type: none"> <li>• Strategy-use rubric</li> </ul>
<b>Lesson 5</b>	<ul style="list-style-type: none"> <li>• Writing a response to a strategy-use question</li> <li>• Peer feedback routine</li> </ul>
<b>Lesson 6</b>	<ul style="list-style-type: none"> <li>• Team discussion after the test</li> </ul>
<b>Lesson 7</b>	<ul style="list-style-type: none"> <li>• Read and Respond discussion</li> </ul>
<b>Lesson 8</b>	<ul style="list-style-type: none"> <li>• Two-Minute Edit</li> <li>• Class Council</li> </ul>

Cycle 2	
<b>Lesson 1</b>	<ul style="list-style-type: none"> <li>• Team Talk rubric</li> <li>• Team discussion role cards</li> </ul>
<b>Lesson 2</b>	<ul style="list-style-type: none"> <li>• Partner vocabulary study</li> </ul>
<b>Lesson 5</b>	<ul style="list-style-type: none"> <li>• Writer's guide</li> <li>• Editing checklist</li> </ul>

## Unit Topic/Content

For this unit, students will read articles from *Odyssey* magazine: The Magic of Language. Topics include language geniuses, why some autistic children are unable to speak, speech patterns of adolescents, and the importance of Broca's area and Wernicke's area.

## Text and Media Selections

### Internet/Media Options

To expand your students' background knowledge, consider using Internet/media options with lessons. Always preview sites for availability and suitability. Please make sure you have the correct plug-ins.

## At a Glance

Cycle 1		
Lesson	Text	Media
<b>Lesson 1</b>	"Every Child Is a Genius!," pages 6–9	(Embedded) Process video: "Word Pronunciation Strategies"
<b>Lesson 2</b>	"Say What?," pages 28–30	(Embedded) Process video: "Word Meaning Strategies"
<b>Lesson 3</b>	"Why Howard Doesn't Talk," pages 11–13	(Embedded) Process video: "Team Strategy Discussion"
<b>Lesson 4</b>	"Sheep, Mutton, Ovine: The Three Tiers of English Vocabulary," pages 44–46	(Embedded) Process video: "Sentence/ Passage Strategies"
<b>Lesson 5</b>	writing in response to reading	
<b>Lesson 6</b>	"Going, Going, Gone!," pages 36–38	(Embedded) Process video: "Read and Respond Homework"
<b>Lesson 7</b>	self-selected reading	(Embedded) Process video: "Are we a super team?" (Embedded) Process video: "Team Goal Setting"
<b>Lesson 8</b>	Getting Along Together	

## The Magic of Language *Odyssey* magazine

**The Magic  
of Language  
Odyssey  
magazine**

Cycle 2		
Lesson	Text	Media
Lesson 1	"Speech: Dances of the Vocal Tract," pages 14 and 15	(Embedded) Process video: "Team Talk"
Lesson 2	"Animal Communications 101: Lessons with Doctor Dolittle," pages 24–27	(Embedded) Process video: "Rating Vocabulary Words" (Embedded) Background video: "Science Nation: Talk to the Animals."
Lesson 3	"We Speak with the Left Side of Our Brain!," pages 16–18	
Lesson 4	"Looking at Language in the Brain," page 19	
Lesson 5	writing in response to reading	
Lesson 6	"Think Syrinx," pages 48 and 49	
Lesson 7	self-selected reading	
Lesson 8	Getting Along Together	

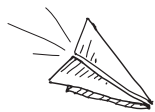
## Welcome Lesson

**Objective:** Form teams to help students improve one another's reading and learning skills.

### Teacher Background

In this lesson, you will:

1. Welcome your students to their new class, the Reading Edge.
2. Form teams for the first quarter and conduct a team-building activity.
3. Pass out team score sheets.
4. Introduce students to Read and Respond homework.



## Active Instruction tp

(22 minutes)

### Big Question

Post and present this lesson's Big Question. Have students write a response to the question as they arrive for class.

**The Big Question:** What is the most important skill that you learned in Getting Started? Why?

### Set the Stage

1. Refer students to today's Big Question. Use **Think-Pair-Share** to ask:

**What is the most important skill that you learned in Getting Started? Why?**

*Answers will vary.*

2. Introduce the unit objective.

**Our objective is to help one another improve our reading and thinking skills. We'll do this by working in teams. If we work hard and help one another, everyone can and will succeed! Now let's get in our teams.**

3. Randomly assign students to teams, and tell them which tables they will move to. Use 1-2-3 Move to prompt students to move. Give each team a team score sheet.

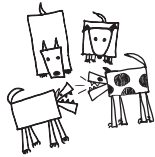
Students write responses to the Big Question.

Discuss the Big Question.



Post and present the objective.

Assign students to teams, and ask them to move.



# Teamwork tp

(20 minutes)

Engage students in team building. Student Edition, page 3

Cue students to use their role cards.

## Team Discussion

1. Tell partners to use the questions in their student editions and their own questions to interview each other. Tell them to note things that they have in common.

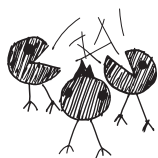
1. What is one of your strengths?
2. What makes you proud?
3. What is your favorite thing to do?
4. What is your least favorite thing to do?

2. Ask partners to introduce each other to the team. Ask students to make a web in their notebooks of things they have in common. Tell teams to choose a team name based on what they have in common and to write it on their team score sheets and a table tent.
3. Review the role cards as necessary. Randomly assign a team leader, and ask the team leader to give a card to each teammate. Tell students to follow the directions on their cards as they discuss the Team Talk questions. Point out that the team has to make sure that each member knows the answer and can share it during the Lightning Round.

### Team Talk Questions

1. What is your team name? Why did you choose that name?  
*Answers will vary.*
2. What do you and your teammates have in common? How will that help you work together?  
*Answers will vary.*
3. What did you find surprising about one of your teammates? Explain your answer.  
*Answers will vary.*

4. Have students thoroughly discuss Team Talk questions. Remind them that all teammates need to be able to answer the questions during Class Discussion.
5. Circulate and give feedback to teams and students. Ask questions to encourage further discussion.



# Class Discussion

(18 minutes)

## Lightning Round

1. Remind students that you will use Random Reporter to choose the student who will answer for each team.
2. Tell them that Random Reporters will earn team celebration points for correct responses. Tell students that you will record points on the Team Celebration Points poster and that they can keep track of points that they earn on their team score sheets.
3. Have each team count off, and tell students to write their number in their notebooks so they will remember it.
4. Use **Random Reporter** to have teams answer the first question. Write team names on the Team Celebration Points poster, and give each team a point.

Use **Random Reporter** to have teams share oral Team Talk responses for the remaining questions. Ask other teams to agree, disagree, or add on to responses.

5. Distribute Read and Respond forms. Explain the homework to the students. Tell them that they will practice reading and that they will each fill out a Read and Respond form. Review the questions on the form, and tell students that the questions relate to strategies and skills that they will practice in the Reading Edge. Tell them that completing Read and Respond forms and answering the questions will help them earn team points.

Allow students time to choose a reading selection from the classroom library to use for their homework assignment.

## Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

**Randomly select team representatives who will share:**



- oral Team Talk responses
- Remind students to answer in full sentences.

Celebrate team successes!

The top team chooses a cheer.

## Cycle 1:

Clarify  
Words  
and Ideas

## Lesson 1

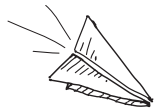
**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

**Teacher Background**

In this lesson, you will introduce clarifying strategies and the use of the Clarifying Strategy Card. The Clarifying Strategy Card is a tool that prompts your students to stop when their comprehension breaks down and use strategies to fix it. The front of the card explains the clarifying process. The back of the card lists clarifying strategies. Your students will see the partners in the video using the Clarifying Strategy Card as they read. Students will read a magazine article. As they read, encourage the use of sticky notes to mark what is unclear in the text and to use the strategies listed on the card to help them pronounce unfamiliar words and figure out their meanings.

In this lesson, you will also introduce student routines for partner reading and strategy-use discussion.

The article students read today is “Every Child Is a Genius!” This article describes how children are language geniuses because they pick up their native language without even going to school. The article explains why correcting errors in children’s speech may not be as effective as it seems. Also, there is an explanation of why a sensitive period is crucial to learning a language.

**Active Instruction** 

(22 minutes)

**Big Question**

Post and present this cycle’s Big Question. Have students write a response to the question as they arrive for class.

**The Big Question:** When you are reading and you come to something that is unclear or confusing, what do you do?

**Set the Stage**

1. Refer students to today’s Big Question. Use **Think-Pair-Share** to ask:

**When you are reading and you come to something that is unclear or confusing, what do you do?**

*Answers will vary. Some students may say that they skip over it. Others may say that they stop and try to figure it out. Some students may say that if it is a word they don’t know, they look it up in a dictionary.*

Students write responses to the Big Question.

Discuss the Big Question.





Teams review their cycle goal.

Post and present the reading objective.

Introduce clarifying and the Clarifying Strategy Card.

2. Ask students to review their cycle goal. Remind students how to earn team celebration points. Remind them that team celebration points help them to become super teams. Tell them that they earn team celebration points during the Lightning Round.

Refer students to the reading objective for this cycle.

**Our reading goal for this cycle is to use clarifying strategies to figure out the meanings of words, phrases, and passages. The word *clarify* comes from the word *clear*. Clarifying strategies help to clear up problems that we have understanding what we read. Sometimes there is a word or phrase that we don't know. Sometimes an idea is worded in a complicated way that is hard to understand at first. Using clarifying strategies can help.**

3. Refer students to the following Clarifying Strategy Card in their team folders. Have them note that the front of the card lists steps. Read the steps on the card aloud. Have them look at the back of the card and note that it includes strategies for pronouncing unfamiliar words and strategies for figuring out meaning.

## Clarifying

1. When you don't know or understand something...STOP!
2. Mark it with a sticky note.
3. Use strategies to figure it out.
4. When you clarify it, put a check mark on the sticky note.

*If you still don't understand...*

5. Take the sticky-note problem to your team for help.

To pronounce an unfamiliar word:

- break the word into chunks.
- blend it.
- look for a base word.
- reread it.

To figure out a word's meaning:

- reread or read ahead to find clues in the text.
- look for familiar word parts.
- picture what is going on in the text.
- use background knowledge.
- use a glossary or dictionary.

4. Introduce the video.

**We are going to watch a video of partners reading an interesting article. The partners will come to some tricky words that they don't know. What will they do? Skip over them? Use strategies? Watch carefully to see how they deal with sticky-note problems.**

Show the video  
"Word Pronunciation  
Strategies."



Refer students to pages 6–9  
in the text.

**Teacher:** Read aloud  
and think aloud to model  
clarifying strategies.

**Students:** Actively listen.

5. Show the video. Use **Think-Pair-Share** to debrief the video.

**What did the partners do when they came to words they couldn't pronounce?**

**Which strategies did the partners use to help them pronounce the words?**

**Why did they use different strategies?**

6. Introduce the texts, authors, and reading objective.

### Interactive Read Aloud

1. Distribute copies of *Odyssey* magazine: The Magic of Language. Have students preview today's text "My Child Is a Genius!," pages 6–9. You will read paragraph 1 aloud.
2. Tell students that you are going to read aloud and then think aloud as you use some clarifying strategies. Read page 7 (sentence 1) aloud, pausing at the word *incredibly*. A sample Think Aloud follows.

Sample Think Aloud
<p>"For most people, learning a foreign language is...." I don't recognize this word right away. I'll put a sticky note on it and look at the Clarifying Strategy Card. It gives me a few strategies to use when I can't pronounce a word. One strategy is to find a base word. I do see a familiar base word, <i>incredible</i>. That helps me pronounce this word, <i>incredibly</i>. I know that <i>incredible</i> means unbelievable, so <i>incredibly</i> must mean done in an unbelievable way. Let me reread the sentence to see if I'm right. "For most people, learning a foreign language is incredibly hard." That makes sense; it can be unbelievable, or extremely, hard for many people to learn a language that they're not familiar with. I can check that sticky note because I clarified the word.</p> <p>"And according to Dr. Benjamin Rifkin, a...." I can't pronounce this word. I'll mark it with a sticky note and check the strategy card. Maybe I could break the word into chunks, <i>pro-fess-or</i>, and blend it, <i>professor</i>. I've heard that word before. Professors are what teachers at a college are called. So Dr. Rifkin teaches at a college and writes textbooks about Russian. He must know a lot about language. I'll keep reading to find out what information he has to share.</p>



3. Refer students to their Clarifying Strategy Cards. Use **Think-Pair-Share** to debrief the Think Aloud.

**What did I do when I came to a word that I could not pronounce?**

*You stopped and marked the word with a sticky note. You looked at the Clarifying Strategy Card for a strategy to pronounce it.*

**Which clarifying strategies did I use?**

*You looked for a base word. You figured out the word incredibly because it had the familiar base word incredible in it. You reread the beginning of the sentence to see if it made sense. You broke the word professor into chunks and blended it to pronounce it.*

**Partner pairs:** Read aloud/think aloud with the next passage to practice clarifying strategies.

4. Partner Practice: Have students read the next section (“Language Geniuses”) aloud with their partners and use clarifying strategies to pronounce any unfamiliar words. Remind them to use sticky notes to mark words that they need to stop and figure out and to refer to their Clarifying Strategy Cards. When they have figured out a word, they can put a check on the sticky note.

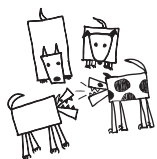
5. Debrief partner practice. Use **Think-Pair-Share** to ask:

**Which words in the paragraph did you have to stop and figure out? Which strategies did you use?**

*Answers will vary. For example, we stopped at the word grammatically. We broke it into chunks to pronounce it, and then we realized that it probably came from the word grammar. Grammatically means relating to grammar.*

**How did clarifying the word help you better understand the text?**

*Clarifying the word grammatically helped us understand that not only do language geniuses pick up many new words, but they can use the words properly.*



## Teamwork tp

(20 minutes)

### Partner Prep

1. Refer students to the teamwork routines for partner reading in their team folders. Explain that students will be partner reading regularly in the Reading Edge.

Prepare students for partner reading.

With Partners	First	Second	Third	Fourth	Finally
1 Partner Reading	Take turns reading a paragraph or section of text aloud. Mark problems with a sticky note.	Clarify confusing words and passages.	After each paragraph or section, the listening partner restates the main ideas or events.	Both partners make notes about main ideas or events. Review the paragraph or section, and discuss supporting details. Add them to your notes.	Take unsolved sticky-note problems to team discussion.

Point out to students that during partner reading, partners take turns reading and restating the main ideas in the text. One partner reads a paragraph or section of text aloud. The listening partner restates the main ideas or events in that section. Then they switch off reading and restating.

**Partner reading—reading aloud, listening, and restating the important points—improves brain connections. It focuses attention for learning new information and helps us clarify our thinking.**

2. Explain what partners should do when they come to a word, phrase, or section that needs to be clarified. When they come to anything confusing or unclear in their reading, they mark it with a sticky note and try to make sense of it using clarifying strategies. If they cannot clarify it, they take their sticky-note problem and try to solve it with the help of the rest of their team during team discussion.
3. Have students read and restate: **sr**  
**pages 7 (paragraph 5)–9 (excluding the “Activity to Discover” box) aloud with partners.**
4. Circulate and check for comprehension and evidence of strategy use, for example, the use of sticky notes. Give students feedback. Prompt and reinforce their discussions.

**Team Discussion**

1. Refer students to the following in their student editions.

Strategy Use	<ul style="list-style-type: none"> <li>Discuss sticky-note problems, and try to solve them.</li> <li>Discuss which strategies you used. How did you figure it out?</li> <li>Discuss how figuring out the problem helped you understand the text.</li> <li>Check that all team members can share your team’s strategy discussion in the Lightning Round.</li> </ul>
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Point out that teams will discuss their sticky-note problems and use clarifying strategies to figure them out. Point out that teams will want to prepare all team members to share their team’s clarifying discussion because any team member can be called on in the Lightning Round.

2. Preview the Team Talk questions.

Team Talk Questions
<p>1. What is a word or phrase that a team member marked with a sticky note? <b>[CV]</b></p> <p><i>For example, a team member marked the word infancy in paragraph 2 of “Sensitive Youth” with a sticky note because she could not pronounce it.</i></p> <p><i>In another example, a team member marked the word puberty in paragraph 2 of “Sensitive Youth” with a sticky note because he couldn’t pronounce it and didn’t know the meaning.</i></p> <p><i>In another example, a team member marked the phrase “sensitive period” in paragraph 1 of “Sensitive Youth” with a sticky note because she didn’t understand why it was important.</i></p>

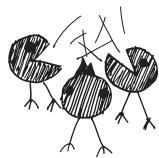
*continued*

Prepare students for team discussion.

Team Talk Questions *continued*

2. Explain which clarifying strategies you used to figure out the marked word or phrase. **[CV]**  
*infancy: We saw a familiar base word, infant, which means baby. We figured out that infancy must mean the time when someone is an infant, or a baby.*  
*puberty: We broke the word into chunks to pronounce it. We used clues in the text to figure it out.*  
*"sensitive period": We reread to look for clues.*
3. Explain how figuring out the word or phrase helped you better understand the text. **[CV]**  
*infancy: We figured out that humans begin learning language as infants before they can speak properly.*  
*puberty: The passage discusses infancy and then mentions adults who have not learned language. It seems that puberty is a time after infancy and before adulthood.*  
*"sensitive period": We read on and understood that a sensitive period for humans begins when they're infants and fades by puberty. This is the best time for humans to learn a language.*
4. In "The Other One Spoon," what do you think is the author's main point about parents teaching their children language? Support your answer with evidence from the text. **[MI]**  
*For example, I think the author's main point is that when parents try to correct their children, it doesn't always help. In the conversation shown, the child repeats his father, but at the end of the conversation, the child repeats the sentence incorrectly, as he did before the lesson. However, children can still grow up to speak properly.*

3. Circulate and give feedback to teams and students. Use the strategy-use rubric to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
4. Award team celebration points for good team discussions that demonstrate 100-point responses.



## Class Discussion tp

(18 minutes)

### Lightning Round

1. Following is the strategy-use routine for team discussion.

#### Class Discussion

##### Strategy-Use

- Describe your team's strategy use.
- How did you resolve a sticky note?
- How did it help you understand the text?

Randomly select team representatives who will share their clarifying discussions.



**Strategy Use:**

- ✓ Describes a problem
- ✓ Describes strategies used to solve it
- ✓ Explains how the strategy helped to better understand the text

Celebrate team successes!

The top team chooses a cheer.

Explain the Read and Respond homework assignment.

2. Remind students that Random Reporters will earn team celebration points for quality responses. Remind students that you will record points on the Team Celebration Points poster and that they can keep track of points that they earn on their team score sheets.

3. Use **Random Reporter** to have teams share their team’s strategy-use discussion. Ask Random Reporters to respond to Team Talk questions #1–3.

Award team celebration points to teams whose Random Reporter:

- identifies a word marked with a sticky note (what they needed to clarify),
- describes which strategies the team used to figure it out, and
- explains how figuring out the word helped them better understand the text.

4. Use **Random Reporter** to have teams share their discussions of Team Talk question #4.

Award team celebration points to teams whose Random Reporters answer the question and support their answers with evidence from the text.

**Celebrate**

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

2. Review the Read and Respond homework. Remind students that they chose a book or article to read from the classroom library or other source. For homework each day, students will read from their selected reading for twenty minutes. They will note on their Read and Respond homework form the date and page numbers read and have it initialed by an adult listener.

Refer to the questions on the form. Explain that students will write answers to the questions, and in lesson 7, they will use their answers to prepare and make presentations of their reading selections to their teams.

## From Student Edition

## Strategy Use

- Discuss sticky-note problems, and try to solve them.
- Discuss which strategies you used. How did you figure it out?
- Discuss how figuring out the problem helped you understand the text.
- Check that all team members can share your team's strategy discussion in the Lightning Round.

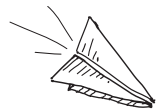
## Lesson 2

**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

### Teacher Background

Today students will read “Say What?” This article describes the role that language plays in social order. A linguistics professor at Stanford University completed a study and found that speech patterns correlated with students’ social grouping. This was especially prevalent among girls.

As students discuss the comprehension problems that they mark with sticky notes, encourage them to explain which strategies they used to solve the problems. Refer students to the Clarifying Strategy Card.



## Active Instruction

(25 minutes)

### Big Question

Post and present this lesson’s Big Question. Have students write a response to the question as they arrive for class.

Students write responses to the Big Question.

**The Big Question:** What is the meaning of the underlined Italian word in this sentence? Use your Clarifying Strategy Card.

Lakisha wanted to double check the answers on her math homework, so she used a calcolatrice.

### Set the Stage

1. Refer students to today’s Big Question. Use **Think-Pair-Share** to ask:

**What is the meaning of the underlined Italian word in this sentence? Use your Clarifying Strategy Card.**

Lakisha wanted to double check the answers on her math homework, so she used a calcolatrice.

*Students will probably say that it means calculator. For example, we used clues in the sentence to guess the meaning. The phrase “math homework” made us think of numbers. We tried calculator in the sentence, and it made sense.*

*In another example, we pictured what was going on. If Lakisha wanted to double check her answers to math homework, it seemed like using a calculator would be a good way to make sure that she was correct.*

*In another example, we looked at the Italian word, and it reminded us of the word calculator, which is something you use to do math.*

Discuss the Big Question.







Use **Random Reporter** to debrief, and award team celebration points to teams that describe the strategies they used.

- Point out that students were able to figure out the meaning of a word in a different language. They used clues in the sentence. They pictured what was going on in the sentence. They used their knowledge of other related words to guess at the meaning. Then they tried it out in the sentence to see if it made sense.
- Introduce the video.

**These partners are trying to figure out the meanings of some tough words. As you watch the video, think about what advice you would give the partners about using clarifying strategies.**

Show the first part of the video “Word Meaning Strategies.”

**The partners are stuck on some words. They figured out how to pronounce these words, but haven’t figured out what the words mean.**

- Have teams discuss what advice they would give the partners to figure out the meanings of these words.

Use **Random Reporter** to have teams share their discussions.

- Show the second part of “Word Meaning Strategies” to see which strategies the partners use to clarify the words.

Use **Random Reporter** to have teams share the strategies that the partners in the video used.

### Interactive Read Aloud

- Have students preview today’s text “Say What?,” pages 28–30 in *Odyssey* magazine. Tell students that you are going to read aloud and then think aloud as you use some clarifying strategies. Challenge students to actively listen because you will ask them to identify the strategies that you used. Read the introduction on page 28 aloud, stopping at the word *linguistics* to think aloud and clarify the word. A sample Think Aloud follows.

Show the video  
“Word Meaning  
Strategies.”



Refer students to pages  
28–30 in the text.

**Teacher:** Read aloud and think aloud to model clarifying strategies.

**Students:** Actively listen.



**Partner pairs:** Read aloud/think aloud with the next sentence to practice clarifying strategies.

### Sample Think Aloud

"A Stanford University...." I stopped because I don't recognize this word. I'll mark it with a sticky note and try some strategies. I think the first clarifying strategy that I'm going to try is to break this word into chunks—*lin-guis-tics*. Now I'll blend it—*linguistics*. That helped me pronounce the word, and it reminds me of the word *lingo*, but I don't know what *linguistics* means. I'll try rereading to figure out its meaning. "Does how you talk reflect who your friends are?" I think *talk* is a clue. If a linguistics expert is trying to answer this question, maybe *linguistics* has to do with speaking or language. I'll try out that meaning in the sentence to see if it makes sense.

"A Stanford University language expert...." Yes, that makes sense. *Linguistics* means language. I clarified it, so I can check off that sticky note. So to restate this section, a language expert wants to identify the relationship between how a person talks and who his or her friends are.

2. Use **Think-Pair-Share** to debrief the Think Aloud.

#### **Which clarifying strategies helped me figure out the meaning of *linguistics*?**

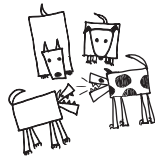
*You broke the word into chunks to pronounce it. You reread to find clues. You used the word talk as a clue to figure out the meaning of the word and then tried out the meaning in the sentence.*

3. Partner Practice: Have students read paragraph 1 on page 29 aloud to their partners and use clarifying strategies to figure out any unfamiliar words. Use **Think-Pair-Share** to ask:

#### **Which words in the sentence did you have to stop and figure out? Which strategies did you use?**

*For example, we had to stop and figure out the word exchange. We broke it into chunks to pronounce it. We've heard the word before and sort of know the meaning. We reread the sentence and looked for clues. We knew it was a word that can refer to giving something back. That didn't make sense, so we used context clues. The conversation is called an exchange. An exchange must be when information goes back and forth.*

*In another example, we had to stop and figure out the word pronouncing. We tried breaking it into parts and sounding it out. We tried rereading to look for clues, but we could not figure it out. We finally looked it up in the dictionary. It means saying words. So the way a person says words may provide information about which group he or she associates with in school.*



# Teamwork tp

(20 minutes)

Prepare students for partner reading.

## Partner Prep

1. Refer students to the teamwork routines for partner reading in their team folders, and review the routine. Remind students that during partner reading, partners take turns reading and restating the main ideas in the text. One partner reads a paragraph or section of text aloud. The listening partner restates the main ideas or events in that section. Then they switch off reading and restating.
2. Remind partners what they should do when they come to a word, phrase, or section that needs to be clarified. When they come to anything confusing or unclear in their reading, they mark it with a sticky note and try to make sense of it using clarifying strategies. If they cannot clarify it, they take their sticky-note problem and try to solve it with the help of the rest of their team during team discussion.

With Partners	First	Second	Third	Fourth	Finally
<b>1 Partner Reading</b>	Take turns reading a paragraph or section of text aloud. Mark problems with a sticky note.	Clarify confusing words and passages.	After each paragraph or section, the listening partner restates the main ideas or events.	Both partners make notes about main ideas or events. Review the paragraph or section, and discuss supporting details. Add them to your notes.	Take unsolved sticky-note problems to team discussion.

3. Have students read and restate: sr  
**pages 29 (paragraph 2) and 30 aloud with partners.**
4. Circulate and check for comprehension, restating of main ideas, and evidence of strategy use, for example, the use of sticky notes. Give students feedback. Prompt and reinforce their discussions.

## Team Discussion

1. Refer students to the following in their student editions.

Strategy Use	<ul style="list-style-type: none"> <li>Discuss sticky-note problems, and try to solve them.</li> <li>Discuss which strategies you used. How did you figure it out?</li> <li>Discuss how figuring out the problem helped you understand the text.</li> <li>Check that all team members can share your team's strategy discussion in the Lightning Round.</li> </ul>
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Prepare students for team discussion.

Remind teams that they will discuss their sticky-note problems and use clarifying strategies to figure them out. Point out that teams will want to prepare all team members to share their team’s clarifying discussion because any team member can be called on during the Lightning Round.

- Preview the Team Talk questions.

### Team Talk Questions

1. What is a word or phrase that a team member marked with a sticky note and brought to the team? **[CV]**

*For example, a team member marked the word interacting on page 29 with a sticky note.*

*In another example, a team member marked the word phonetic on page 29 with a sticky note.*

2. Explain which clarifying strategies you used to figure out the marked word or phrase. **[CV]**

*interacting: We broke the word into chunks to pronounce it. We used clues in the text and a related word, interact, to figure it out.*

*phonetic: We broke the word into chunks and pronounced it. We saw a familiar word part—the beginning of the word is like the word phone. We reread and tried to find clues, but that didn’t help. Finally, we looked it up in the dictionary.*

3. Explain how figuring out the word or phrase helped you better understand the text. **[CV]**

*interacting: The text says that Eckert observed students interacting. This helped us understand that Eckert observed students spending time talking with one another. Eckert didn’t have students speak with her one-on-one to do her observations. Instead, she watched as students communicated with one another in everyday settings.*

*phonetic: When we looked it up in the dictionary, we found that it means relating to sounds. This made sense because Eckert recorded students’ speech patterns. Speech relates to sound, so she was analyzing the different sounds that she heard on the tapes.*

4. What did Eckert learn from reviewing tapes of students’ speech patterns? **[MI]**

*Eckert gathered a lot of information from reviewing tapes of students’ speech patterns. For example, she learned that social order was basically the same in all schools. Also, she discovered that students in the same social group had similar speech patterns.*

3. Circulate and give feedback to teams and students. Use the strategy-use rubric to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
4. Award team celebration points for good team discussions that demonstrate 100-point responses.



# Class Discussion <sup>tp</sup>

(15 minutes)

Randomly select team representatives who will share their clarifying discussions.

## Lightning Round

- Following is the strategy-use routine for team discussion.

Class Discussion	
Strategy-Use	<ul style="list-style-type: none"> <li>Describe your team's strategy use.</li> <li>How did you resolve a sticky note?</li> <li>How did it help you understand the text?</li> </ul>

- Remind students that Random Reporters will earn team celebration points for quality responses. Remind students that you will record points on the Team Celebration Points poster and that they can keep track of points that they earn on their team score sheets.

- Use **Random Reporter** to have teams share their team's strategy-use discussion. Ask Random Reporters to respond to Team Talk questions #1–3.

Award team celebration points to teams whose Random Reporter:

- identifies a word marked with a sticky note (what they needed to clarify),
- describes which strategies the team used to figure it out, and
- explains how figuring out the word helped them better understand the text.

- Use **Random Reporter** to have teams share their discussions of Team Talk question #4.

Award team celebration points to teams whose Random Reporters use full sentences to answer the question and support them with examples from the text.

## Celebrate

- Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

- As a reminder, refer students to the Read and Respond homework assignment described in their student editions.



Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.

**From Student Edition**

Strategy Use	<ul style="list-style-type: none"><li>• Discuss sticky-note problems, and try to solve them.</li><li>• Discuss which strategies you used. How did you figure it out?</li><li>• Discuss how figuring out the problem helped you understand the text.</li><li>• Check that all team members can share your team's strategy discussion in the Lightning Round.</li></ul>
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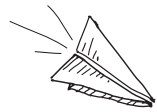
## Lesson 3

**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

### Teacher Background

In this lesson, you will introduce the strategy-use rubric. The rubrics in the Reading Edge, which can be found in the team folders, set expectations for student responses. They are tools for teams to use as they prepare for the Lightning Round to help them discuss, give feedback, and evaluate whether they have a high-quality response. The rubrics are also tools for evaluating and giving feedback during the Lightning Round. In the video that students watch today, two teams are having strategy-use discussions. Using the strategy-use rubric, your students will evaluate the teams' responses on the video.

Today students will read “Why Howard Doesn’t Talk,” which describes why some autistic children never learn to speak. Some autistic children never learn to speak because they lack social cognition, which is required for learning language.



## Active Instruction tp

(25 minutes)

### Big Question

Post and present this lesson’s Big Question. Have students write a response to the question as they arrive for class.

Students write responses to the Big Question.

**The Big Question:** What is the meaning of the underlined word in this sentence? Use your Clarifying Strategy Card.  
Sally dismounted the horse very carefully to avoid slipping or injuring herself.

### Set the Stage

1. Refer students to today’s Big Question. Use **Think-Pair-Share** to ask:

**What is the meaning of the underlined word in this sentence? Use your Clarifying Strategy Card.**

Sally dismounted the horse very carefully to avoid slipping or injuring herself.

*Students will probably say that dismounted means climbed off. For example, to figure it out, we broke the word into chunks and looked for familiar parts of the word. We saw the familiar word part dis-, which means not. The word part mount made us think of a mountain or something tall that you climb.*

*When Sally mounted the horse, she climbed on. We tried the meaning “climbed off” in the sentence, and it made sense.*

Discuss the Big Question.





Introduce the strategy-use rubric.

Use **Random Reporter** to debrief, and award team celebration points to teams that describe the strategies they used.

2. Display the strategy-use rubric (also in the team folder).

<b>Strategy Use</b>	
The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and explains how using the strategy helped in better understanding the text.</b>
<b>90</b>	gives an 80-pt. response <b>and describes a problem and a strategy that was used to solve the problem.</b>
<b>80</b>	<b>identifies a problem that a team member had understanding the text.</b>

Explain that rubrics are tools that teams will use to prepare their Random Reporters to earn points in the Lightning Round. Note that to earn points in the Lightning Round, the Random Reporter must give a 100-point answer. To earn points for strategy use, the Random Reporter will:

- identify a sticky-note problem that a team member had in understanding the text.
- describe a strategy that was used to solve the problem.
- explain how using the strategy helped in better understanding the text.

3. Introduce the video.

**We are going to watch a video of a team preparing for the Lightning Round. They are discussing sticky-note problems.**

Show the first part of the video. Use **Think-Pair-Share** to debrief.

**How did the team prepare for the Lightning Round?**

**Do you think the team is ready for the Lightning Round? Why or why not?**

4. Introduce the second part of the video.

**The teams are about to enter the Lightning Round. Listen carefully to their Random Reporters, and use the strategy-use rubric to rate their answers.**

5. Show the second part of the video. Use **Think-Pair-Share** to debrief.

**Looking at the strategy-use rubric, how did the team earn a point on the poster?**

*They earned a point because their Random Reporter gave a 100-point answer. He told about the sticky-note problem, which strategies they used to figure it out, and how it helped them better understand the text.*

Show the video "Team Strategy Discussion."





Refer students to pages 11–13 in the text.

**Teacher:** Read aloud.

**Students:** Actively listen.

### Interactive Read Aloud

1. Have students preview today’s text “Why Howard Doesn’t Talk,” pages 11–13 in *Odyssey* magazine. Tell students that you will read aloud and then think aloud as you use some clarifying strategies. Challenge students to actively listen because you will ask them to identify the strategies that you used. Read page 11 (paragraph 1) aloud, stopping at the word *emerged* to think aloud and clarify the word. A sample Think Aloud follows.

#### Sample Think Aloud

“I was about five years old when his problems emerged....” I stopped because even though I can pronounce this word, I don’t really know what it means. It must be important because it relates to Howard’s problems. I’ll mark it with a sticky note and try some strategies from the Clarifying Strategy Card.

I’m going to try reading on to see if there are clues in the sentence. “...and, like everyone else in my family, I was both worried and confused.” The rest of the sentence is a clue that the problems were obvious to his family members because they were worried. So *emerged* means became obvious or showed up.

tps

2. Use **Think-Pair-Share** to debrief the Think Aloud.

#### **Which clarifying strategies helped me figure out the meaning of *emerged*?**

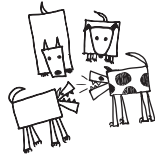
*You read on and found clues in the rest of the sentence about how the family felt about Howard’s problems, so that helped you understand the word emerged.*

3. Partner Practice: Have students read paragraph 2 aloud to their partners and use clarifying strategies to figure out any unfamiliar words. Use **Think-Pair-Share** to ask:

#### **Which words in the sentence did you have to stop and figure out? Which strategies did you use?**

*For example, we had to stop and figure out the word traditionally. We saw the base word tradition that helped us pronounce it. We read on for clues to its meaning in the sentence. It used statistics to show how many children are struck with autism. Then it said there has been an increase. We figured out that traditionally must mean usually. We tried it out in the sentence, and it made sense.*

**Partner pairs:** Read aloud/think aloud with the next sentence to practice clarifying strategies.



# Teamwork tp

(20 minutes)

Prepare students for partner reading.

## Partner Prep

1. Refer students to the teamwork routines for partner reading in their team folders, and review the routine.

With Partners	First	Second	Third	Fourth	Finally
<b>1 Partner Reading</b>	Take turns reading a paragraph or section of text aloud. Mark problems with a sticky note.	Clarify confusing words and passages.	After each paragraph or section, the listening partner restates the main ideas or events.	Both partners make notes about main ideas or events. Review the paragraph or section, and discuss supporting details. Add them to your notes.	Take unsolved sticky-note problems to team discussion.

2. Remind partners what they should do when they come to a word, phrase, or section that needs to be clarified. When they come to anything confusing or unclear in their reading, they mark it with a sticky note and try to make sense of it using clarifying strategies. If they cannot clarify it, they take their sticky-note problem and try to solve it with the help of the rest of their team during team discussion.
3. Have students read and restate: sr  
**pages 11 (paragraph 3)–13 aloud with partners.**
4. Circulate and check for comprehension, restating of main ideas, and evidence of strategy use, for example, the use of sticky notes. Give students feedback. Prompt and reinforce their discussions.

## Team Discussion

Prepare students for team discussion.

1. Remind students that in their teams they will:
  - discuss sticky-note problems and try to solve them.
  - discuss which strategies they used. How did they figure it out?
  - discuss how figuring out the problem helped them understand the text.
  - check that all team members can share the team’s strategy-use discussion in the Lightning Round.
2. Remind teams to use the strategy-use rubric to prepare for the Lightning Round.

## 3. Preview the Team Talk questions.

## Team Talk Questions

1. What is a word or phrase that a team member marked with a sticky note and brought to the team? Explain which clarifying strategies you used to figure out the marked word or phrase. How did figuring out the word, phrase, or passage help you better understand the text? **[CV]** (strategy-use rubric)

*100 = A team member marked the word impairment on page 13. He looked for a base word and recognized the base word impair. This reminded him of the word impaired and how some people are hearing-impaired. He figured out that impairment must mean a problem in which something doesn't work properly. Figuring out the meaning of the word helped him understand how language problems may be affected by a type of social impairment. For instance, if a child has autism, a serious social impairment, his or her language problems are very serious.*

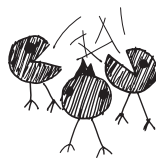
*90 = A team member marked the word impairment on page 13. He recognized the base word impair. This reminded him of the word impaired. He figured out that impairment must mean that something doesn't work properly. Figuring out the meaning helped him understand how language problems may be affected by a type of social impairment.*

*80 = A team member marked the word impairment on page 13. He knew that some people are hearing-impaired.*

2. Explain how autistic children communicate differently from children who develop normally. **[MI, RE]**

*Autistic children communicate differently because of how they use words and phrases. For example, one child used commercial jingles to communicate. Autistic children reverse pronouns so I means you. Also, words may have strange meanings such as using the word brain to mean car exhaust.*

4. Circulate and give feedback to teams and students. Use the strategy-use rubric to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
5. Award team celebration points for good team discussions that demonstrate 100-point responses.



## Class Discussion tp

(15 minutes)

### Lightning Round

1. Remind students that Random Reporters will earn team celebration points for quality responses. Remind students that you will record points on the Team Celebration Points poster and that they can keep track of points that they earn on their team score sheets.

*Randomly select team representatives who will share their clarifying discussions.*

Use the strategy-use rubric to evaluate student responses.

2. Display the strategy-use rubric.

<b>Strategy Use</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and explains how using the strategy helped in better understanding the text.</b>
<b>90</b>	gives an 80-pt. response <b>and describes a problem and a strategy that was used to solve the problem.</b>
<b>80</b>	<b>identifies a problem that a team member had understanding the text.</b>

Remind students that the Random Reporter’s response must provide all three levels on the rubric to earn points on the poster for the team.



3. Use **Random Reporter** to have teams share their team’s strategy-use discussions. Ask Random Reporters to respond to Team Talk question #1.

<b>Class Discussion</b>	
<b>Strategy-Use</b>	<ul style="list-style-type: none"> <li>• Describe your team’s strategy use.</li> <li>• How did you resolve a sticky note?</li> <li>• How did it help you understand the text?</li> </ul>

Award team celebration points on the poster to teams whose Random Reporters give 100-point answers.

4. Use **Random Reporter** to have teams share their discussions of Team Talk question #2.

Award team celebration points to teams whose Random Reporters use full sentences to answer the question and support them with examples from the text. Record individual scores on the teacher cycle record form.

**Celebrate**

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.

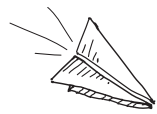
## Lesson 4

**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

### Teacher Background

In this lesson, students watch partners in the video use the partner reading routine as they take turns reading aloud a section of text and restating the main ideas. When trying to restate, the partners realize that they need to stop and use clarifying strategies to figure out the passage. During the Interactive Read Aloud, read a section of text aloud, and challenge students to restate the main ideas in the text with their partners. How did restating help them check their understanding?

Today students will read “Sheep, Mutton, Ovine: The Three Tiers of English Vocabulary.” This article is written by a former participant in the National Spelling Bee. He describes the origin of English and different events that impacted the English language. He also examines the influence of other languages on English.



## Active Instruction

(25 minutes)

### Big Question

Post and present today’s Big Question. Have students write a response to the question as they arrive for class.

Students write responses to the Big Question.

**The Big Question:** What are the meanings of the underlined words in this sentence? Use your Clarifying Strategy Card.

Mrs. Thomas was ecstatic to have several chaperones for the field trip because it made her class more manageable.

### Set the Stage

1. Refer students to today’s Big Question. Use **Think-Pair-Share** to ask:

**What are the meanings of the underlined words in this sentence? Use your Clarifying Strategy Card.**

Mrs. Thomas was ecstatic to have several chaperones for the field trip because it made her class more manageable.

*(Answers will vary.) Students will probably say that ecstatic means extremely happy. To figure it out, we used context clues. If the teacher had a lot of chaperones, she had more people to help her on the trip. This would likely make a teacher very happy. To figure out the word manageable, we saw the familiar word manage and the suffix -able, which means capable of. So manageable must mean capable of being managed or handled.*

Discuss the Big Question.





Use **Random Reporter** to debrief, and award team celebration points to teams that describe the strategies they used.

- Point out that students have been using strategies to clarify the meanings of words. Use **Think-Pair-Share** to ask:

**Suppose that you read a sentence or paragraph, and you don't understand it. What do you do? Which strategies could you use to figure out what the sentence or paragraph means?**

*If there are words that we don't know, we could clarify them first. We could reread what we don't understand. We could read on to see if there are clues in the text. We could picture what is happening to try to figure it out.*

- Introduce the video.

**We are going to watch a video of partners who are struggling with the meaning of a passage.**

Show the video. Use **Think-Pair-Share** to debrief.

**How did the partners know that they had a sticky-note problem?**

**Which strategies did the partners use to figure out the meaning of the passage?**

### Interactive Read Aloud

- Tell students that you are going to read aloud. Challenge students to actively listen because you will ask them to restate the ideas in these beginning paragraphs to their partners. Point out that if they have trouble clearly restating the text in their own words, it means that they have not fully understood the text. They will need to refer to their Clarifying Strategy Card and use those strategies to clear up the problem.

Read the introduction on page 44 aloud. Have partners restate the ideas in the paragraph in their own words. Use **Think-Pair-Share** to prompt the use of clarifying strategies.

**Was your partner able to clearly restate the ideas in the paragraph? If not, which clarifying strategies did you use?**

*We were unclear on why the author would learn about other languages to prepare for the spelling bee. We thought that to prepare for a spelling bee, the author would just learn the words in the language of the spelling bee. We reread and realized that while studying, he learned about the languages that were the basis of the English language.*

Show the video  
"Sentence/Passage  
Strategies."



Refer students to  
pages 44–46 in the text.

**Teacher:** Read aloud.

**Students:** Actively listen.

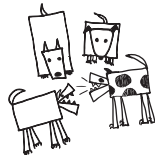


**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill or strategy.

2. Partner Practice: Have students read paragraph 1 on page 44 aloud to their partners. Listening partners restate the ideas in the paragraph. Use **Think-Pair-Share** to ask:

**How did restating the ideas help you check your understanding?**

*When we tried to restate the ideas, we found that we couldn't explain etymology. We reread and then understood that etymology involves the origins, or roots, of words.*



## Teamwork tp

(20 minutes)

### Partner Prep

Prepare students for partner reading.

1. Prepare students for partner reading. Refer students to the teamwork routines for partner reading in their team folders, and review the routine.

With Partners	First	Second	Third	Fourth	Finally
<b>1</b> Partner Reading	Take turns reading a paragraph or section of text aloud. Mark problems with a sticky note.	Clarify confusing words and passages.	After each paragraph or section, the listening partner restates the main ideas or events.	Both partners make notes about main ideas or events. Review the paragraph or section, and discuss supporting details. Add them to your notes.	Take unsolved sticky-note problems to team discussion.

2. Have students read and restate: sr  
**pages 44 (paragraph 2)–46 aloud with partners.**
3. Circulate and check for comprehension, restating of main ideas, and evidence of strategy use, for example, the use of sticky notes. Give students feedback. Prompt and reinforce their discussions.

### Team Discussion

Prepare students for team discussion.

1. Refer students to the following teamwork routines for strategy use in their team folders. Remind students that in their teams they will:
  - discuss sticky-note problems and try to solve them.
  - discuss which strategies they used. How did they figure it out?
  - discuss how figuring out the problem helped them understand the text.
  - check that all team members can share the team's strategy-use discussion in the Lightning Round.



2. Remind teams to use the strategy-use rubric to prepare for the Lightning Round.
3. Preview the Team Talk questions.

### Team Talk Questions

1. What is a word, phrase, or passage that a team member marked with a sticky note? Explain which clarifying strategies you used to figure out the marked word or phrase. How did figuring out the word, phrase, or passage help you better understand the text? **[CV]** (strategy-use rubric)

*100 = For example, a team member marked paragraph 3 on page 44 with a sticky note because the first sentence was confusing. We couldn't figure out what it meant that Scandinavian words are assimilated into English. We had to reread the sentence several times and picture what was happening to clarify the sentence. We figured out that the Scandinavian words are used in English. So assimilated probably means made a part of.*

*90 = For example, a team member marked paragraph 3 on page 44 with a sticky note because the first sentence was confusing. We couldn't figure out what it meant that Scandinavian words are assimilated into English. We had to reread the sentence several times and picture what was happening to clarify the sentence.*

*80 = For example, a team member marked paragraph 3 on page 44 with a sticky note because the first sentence was confusing. We couldn't figure out what it meant when it said that Scandinavian words are assimilated into English.*

2. At the end of paragraph 2 on page 46, the sentence reads, "The multilayered hierarchy of English vocabulary...." What does the phrase "multilayered hierarchy" mean? Which strategies did you use to figure it out? **[CV]**  
*Accept reasonable responses. For example, "multilayered hierarchy" means there are several levels in the English language. We knew that the word multilayered means many layers but didn't know the meaning of hierarchy. We looked it up in the dictionary, and the definition was "a ranked series." Since Latin was seen as more sophisticated than French, which was more sophisticated than English, we figured out that a "multilayered hierarchy" described how words and ideas were ranked based on their origin.*

4. Circulate and give feedback to teams and students. Use the strategy-use rubric to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
5. Award team celebration points for good team discussions that demonstrate 100-point responses.





# Class Discussion tp

(15 minutes)

Randomly select team representatives who will share their clarifying discussions.

## Lightning Round

1. Display the strategy-use rubric.

Strategy Use	
The Random Reporter:	
100	gives a 90-pt. response <b>and explains how using the strategy helped in better understanding the text.</b>
90	gives an 80-pt. response <b>and describes a problem and a strategy that was used to solve the problem.</b>
80	<b>identifies a problem that a team member had understanding the text.</b>

Remind students that the Random Reporter’s response must provide all three levels on the rubric to earn points on the poster for the team.



2. Use **Random Reporter** to have teams share their team’s strategy-use discussion. Ask each Random Reporter to respond to Team Talk question #1. Award team celebration points to teams whose Random Reporter:
  - identifies a word marked with a sticky note (what they needed to clarify),
  - describes which strategies the team used to figure it out, and
  - explains how figuring out the word helped them better understand the text.
3. Use **Random Reporter** to have teams share their discussions of Team Talk question #2.

Award team celebration points to teams whose Random Reporters describe the strategies used and how solving the problem helped them understand the text.

4. Record individual scores on the teacher cycle record form.

## Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Celebrate team successes!

The top team chooses a cheer.

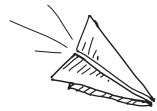
Remind students of the Read and Respond homework assignment.

## Lesson 5

**Writing Objective:** Write a complete answer that explains your thinking.

### Teacher Background

The writing project in lesson 5 prepares students for the writing section of the cycle test. In today's lesson, students will practice writing a response to a strategy-use question. Model using the strategy-use rubric as a checklist for drafting your response.



## Active Instruction

(10 minutes)

### Big Question

Post and present today's Big Question. Have students write a response to the question as they arrive for class.

Students write responses to the Big Question.

**The Big Question:** What are the meanings of the underlined words in this sentence? Use your Clarifying Strategy Card.

There is a plethora of intercollegiate sports that include bowling, hockey, lacrosse, softball, swimming, and volleyball, just to name a few.

### Set the Stage

1. Refer students to today's Big Question. Use **Think-Pair-Share** to ask:

**What are the meanings of the underlined words in this sentence? Use your Clarifying Strategy Card.**

There is a plethora of intercollegiate sports that include bowling, hockey, lacrosse, softball, swimming, and volleyball, just to name a few.

*For example, plethora means large amount. We figured it out by using clues in the sentence. A lot of sports are mentioned, and it says "just to name a few." This phrase shows that there are probably many more.*

*For example, we think intercollegiate means among colleges. It has the word part inter-, which means among or between. It also has the word collegiate, which reminded us of the word college.*

Use **Random Reporter** to debrief, and award team celebration points to teams that describe the strategies they used.

2. Remind students that this cycle they have been using clarifying strategies, answering questions, and including supporting facts or examples. Refer students to the writing objective. Tell them that today they will practice writing a complete answer to a strategy-use question in preparation for the test in the next lesson.

Discuss the Big Question.



Introduce the writing project.



3. Refer students to the following writing prompt in their student editions. Read the writing prompt aloud.

Read the prompt aloud.

Writing Prompt	
<p>The following passage is a summary of an article titled "The Advantages of Being Bilingual." Read the passage, and mark with a sticky note a word, phrase, or sentence that you needed to clarify. Describe the problem and the strategy that you used to solve the problem. Explain how using the strategy helped you better understand the text.</p>	
<p>What does it mean to be bilingual? This means that you speak two languages. There are various reasons why this is an important skill. Speaking more than one language can help with finding solutions to problems and improve listening skills. According to the National Center for Educational Statistics, 21 percent of school-age children speak a language other than English at home. The center projects that this number will increase steadily.</p>	

Source: [www.asha.org/about/news/tipsheets/bilingual.htm](http://www.asha.org/about/news/tipsheets/bilingual.htm)

### Model a Skill

Model drafting an answer to a strategy-use question.

1. Refer students to the strategy-use rubric. Remind students that a complete written strategy-use answer includes the same three levels outlined by the rubric. Review the rubric.

Strategy Use	
The Random Reporter:	
100	gives a 90-pt. response <b>and explains how using the strategy helped in better understanding the text.</b>
90	gives an 80-pt. response <b>and describes a problem and a strategy that was used to solve the problem.</b>
80	<b>identifies a problem that a team member had understanding the text.</b>

2. Model writing an answer to a strategy-use question. Point out that first you will tell what you had to mark with a sticky note:

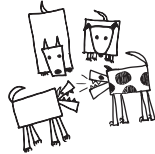
**A word in the passage that confused me was the word *projects*.**

Point out that next you will describe the problem and which strategy you used to figure it out.

**One meaning of the word *project* is a task that you have to get done, but it doesn't make sense in the sentence. I stopped and reread the sentence to look for clues to figure it out.**

Point out that next you will explain how using the strategy helped you better understand the text.

**It says that the center projects that the number of bilingual speakers will continue to increase. It seems like they don't know for sure that this will happen, but since there is already a large percentage of bilingual speakers, this is likely. From these clues, I guessed that projects means predicts in this sentence. I tried out this meaning, and it made sense.**



## Teamwork tp

(20 minutes)

### Independent Work

Tell students that they have 10 minutes to plan and write drafts of their responses to the writing prompt. Remind them to write on every other line to leave room for revisions. Suggest that they refer to the writing prompt to be sure that they answer all parts of the question and to the strategy-use rubric to check the quality of their response.

### Team Discussion

1. Refer students to the peer feedback checklist in their student editions. Introduce the peer feedback routine.

Peer Feedback	
<b>1.</b>	Read your writing project to your teammates. Remember to read with expression.
<b>2.</b>	Ask each of the questions below. Note your teammates' suggestions in the margin of your writing project. <ul style="list-style-type: none"> <li>– Did I identify a problem I had in understanding the text?</li> <li>– Did I describe the problem and which strategy I used to solve it?</li> <li>– Did I explain how using the strategy helped me better understand the text?</li> </ul>
<b>3.</b>	Make revisions.

2. Have students share their drafts in teams. Allow 5 minutes for students to revise their writing projects based on feedback.
3. Have teams put their writing projects in a pile in the middle of their tables so a writing project can be randomly selected.

Students write for 10 minutes.

Monitor discussions as partners and teams give feedback.

Students revise and edit their writing projects.



# Class Discussion tp

(30 minutes)

Display and evaluate randomly selected writing projects using the strategy-use rubric.

## Lightning Round

Randomly select a writing project from one or two teams' piles without revealing their authors. Display a writing project, and read it aloud.

Refer students to the strategy-use rubric. Using the rubric, discuss and evaluate the selected writing project(s) with the class.

For example, ask:

- **Does the writer identify a problem that he or she had understanding the text?**
- **Does the writer describe the problem and which strategy was used to solve it?**
- **Does the writer explain how using the strategy helped him or her better understand the text?**

Award points to teams whose writing projects meet the criteria. Record these points on the team poster.

## Reflection on Writing

Have students reflect on their use of the writing process. Ask:

**Did using the rubric help you write a quality answer? How?**

*Answers will vary.*

**What was the most useful feedback that you received? How did it affect your revisions?**

*Answers will vary.*

## Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.

## Writing Prompt

The following passage is a summary of an article titled “The Advantages of Being Bilingual.” Read the passage, and mark with a sticky note a word, phrase, or sentence that you needed to clarify. Describe the problem and the strategy that you used to solve the problem. Explain how using the strategy helped you better understand the text.

What does it mean to be bilingual? This means that you speak two languages. There are various reasons why this is an important skill. Speaking more than one language can help with finding solutions to problems and improve listening skills. According to the National Center for Educational Statistics, 21 percent of school-age children speak a language other than English at home. The center projects that this number will increase steadily.

<b>Peer Feedback</b>	
<b>1.</b>	Read your writing project to your teammates. Remember to read with expression.
<b>2.</b>	Ask each of the questions below. Note your teammates’ suggestions in the margin of your writing project. <ul style="list-style-type: none"> <li>– Did I identify a problem I had in understanding the text?</li> <li>– Did I describe the problem and which strategy I used to solve it?</li> <li>– Did I explain how using the strategy helped me better understand the text?</li> </ul>
<b>3.</b>	Make revisions.

## Lesson 6

**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

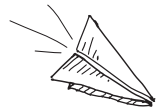
**Writing Objective:** Write a complete answer that explains your thinking.

### Teacher Background

During today’s cycle test, students will use strategies to clarify what they read and will identify which strategies they used to clear up anything confusing. Students may use the Clarifying Strategy Card as they read and answer the test questions.

Be prepared to pass out a colored pen to each student. After taking the test, students will discuss their answers with their teams, receive feedback, and have the opportunity to improve their answers using the colored pens. When you score the test, score students’ original answers, and add extra points for improved answers.

For today’s test, students will read “Going, Going, Gone!,” which describes what constitutes an endangered language, the reasons that languages disappear, and how linguists are trying to record some disappearing languages.



## Active Instruction tp

(5 minutes)

### Big Question

Post and present today’s Big Question. Have students write a response to the question as they arrive for class.

Students write responses to the Big Question.

**The Big Question:** What is the meaning of the underlined word in this sentence? Use your Clarifying Strategy Card.

Angelina was glad that there were Italian, Chinese, and Indian restaurants in her neighborhood because she loved trying different kinds of cuisine.

### Set the Stage

1. Refer students to today’s Big Question. Use **Think-Pair-Share** to ask:

**What is the meaning of the underlined word in this sentence? Use your Clarifying Strategy Card.**

Angelina was glad that there were Italian, Chinese, and Indian restaurants in her neighborhood because she loved trying different kinds of cuisine.

*For example, cuisine means food or type of cooking. To figure it out, we reread and used clues in the sentence. There are restaurants that represent different cultures in Angelina’s neighborhood, and restaurants offer food, so Angelina might try food from a different culture at each restaurant. So cuisine means food.*

Discuss the Big Question.





Use **Random Reporter** to debrief, and award team celebration points to teams that describe the strategies they used.

2. Spot check the Read and Respond homework.



## Prepare Students for the Test tp

(5 minutes)

### Partner Review

1. Remind students that they have been practicing using clarifying strategies to figure out the meanings of words, phrases, and passages. Tell students that they will use these strategies and explain their thinking as they take the cycle test.
2. Have partners review their Clarifying Strategy Cards and writing projects. Allow 2 or 3 minutes for this activity.

### Test Directions

1. Remind students that the test is independent work. Students should not ask their partners for help as they read, but they may use sticky notes if they would like.
2. Distribute the test so students can preview the questions. Point out that some of the test questions are multiple choice for which they will choose the best answer. Other questions require them to write a short answer or create a graphic organizer. Part II of the cycle test requires them to write a long answer. Remind them that their writing project was practice for writing the long answer for part II of the test.
3. Point out that questions #3 and #5 ask about clarifying strategies and require students to include supporting facts or examples.
4. Ask students to identify key words and phrases in question #5.

5. Which strategies did you use to help you pronounce the word *irretrievable*? Which strategies did you use to figure out the meaning of *irretrievable*? **[CV]**

5. Introduce the text that students will read. Tell what it is about, but do not give additional information or details.

**Today you will read about languages that are disappearing.**

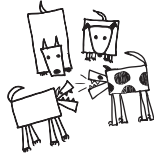




## Test tp

(20 minutes)

Tell students that they have 20 minutes for the test and that they may begin. Give students a 5-minute warning before the end of the test.



## Teamwork tp

(10 minutes)

Teams discuss the answers to the test questions.

### Team Discussion

1. Pass out a colored pen to each student.
2. Explain the student routine for team discussions after the test.
3. Have teams discuss their answers to the test questions. As you monitor team discussions, ask additional questions to prompt their thinking about the important ideas in the reading and about the skills and strategies that they have been using.



## Class Discussion tp

(20 minutes)

Random Reporters share team discussion of a test question.



### Lightning Round

1. Use **Random Reporter** to have teams share team discussions of the test questions and explain their thinking.
2. Award team celebration points.
3. Collect test answers. Score original answers, and add extra points for improved answers.

### Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

Celebrate team successes!

The top team chooses a cheer.

2. Explain that in the next lesson students will, with the help of their teams, each prepare an oral presentation about their homework reading selections. Students will use the questions and their answers on the Read and Respond homework form to discuss with their teams and prepare their presentations.

Introduce the video.

**We are going to watch a video of a team discussing their homework reading selections and preparing for presentations in the Lightning Round.**

Show the video. Debrief the video.

**How did the team use the Read and Respond form to prepare their presentations?**

3. Remind students to bring their Read and Respond forms and homework reading selections to the next reading class.

Show the video "Read and Respond Homework."



## Cycle 1 Test

## Clarify Words and Ideas

**Directions:** Read “Going, Going, Gone!,” pages 36–38. Answer the following questions on a separate piece of paper. You may use the Clarifying Strategy Card.

**Part I. Comprehension** (100 points)

1. When you are reading, what can you do if you come to something unclear or confusing? **[CV]**

*Accept reasonable responses. For example, when I am reading and come to something unclear, I can stop and use clarifying strategies to figure it out. If it is an unfamiliar word, I can break it into chunks to pronounce it. I can reread or read on to find clues in the sentence. I can picture what is happening in the text.*

2. In the sentence “...even though the Romans did not forcibly suppress those other languages, speaking Latin was necessary for getting jobs...,” the word *suppress* most nearly means— **[CV]**
- A. design.
  - B. instruct.
  - C. allow.
  - D. prevent.
3. In the sentence “In addition, the project is fashioning a new artifact, a new Rosetta Stone...,” the word *fashioning* most nearly means— **[CV]**
- A. painting.
  - B. ruining.
  - C. creating.
  - D. emptying.

How did you figure out the meaning of *fashioning*? **[CV]**

*Answers will vary. For example, I used clues in the sentence. The phrase “new Rosetta Stone” is a clue because if something is new, it has been created. The previous sentences also gave me clues because they were about the Rosetta Project building an online archive. The words building and creating are similar.*

4. Why do languages disappear? **[MI]**

*Languages disappear for several reasons, including urbanization, discrimination, and policies made by the government. Sometimes there just isn’t an influence, such as books, to maintain a language.*

5. "However, according to Dr. Bird, most of the recordings of and files about endangered languages made a decade ago are nearly irretrievable today, due in part to magnetic storage degradation and the fact that they were created in now-outmoded digital formats." Which strategies did you use to help you pronounce the word *irretrievable*? Which strategies did you use to figure out the meaning of *irretrievable*? **[CV]**

*Answers will vary. For example, I broke the word irretrievable into chunks and then blended to pronounce it. I saw the base word retrieve, which means to get or bring back, and the prefix ir-, which means not, so irretrievable must mean not able to be retrieved or brought back. Since files about endangered languages were created in outdated forms, it is not possible for them to be brought back.*

**Part II. Writing** (100 points)

Write a complete answer to the following:

What is a word, phrase, or passage in today's reading that you clarified? Explain which clarifying strategies you used to figure out the word, phrase, or passage. Explain how figuring out the word, phrase, or passage helped you better understand the text.

*(Answers will vary.)*

*100 points = I had to clarify the word endangered on page 38 because I didn't know what it meant. I broke it into chunks and blended to pronounce the word. When I pronounced it, I figured out that I knew the word. Endangered means in danger. For example, animals may be endangered. In this case, it means that languages are in danger of disappearing.*

*90 points = I had to clarify the word endangered on page 38 because I didn't know what it meant. I broke it into chunks and blended to pronounce the word. I figured out that I knew the word. Endangered means in danger. Languages are in danger of disappearing.*

*80 points = I had to clarify the word endangered on page 38 because I didn't know what it meant.*

The following guide is used to score part II of the cycle test.

<b>Strategy Use</b>	
The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and</b> explains how using the strategy helped in better understanding the text.
<b>90</b>	gives an 80-pt. response <b>and</b> describes a problem and a strategy that was used to solve the problem.
<b>80</b>	identifies a problem that a team member had understanding the text.

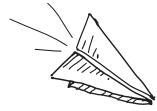
Question Codes			
<b>[DC]</b>	Make inferences; interpret data; draw conclusions.	<b>[AA]</b>	Analyze an argument.
<b>[SA]</b>	Support an answer; cite supporting evidence.	<b>[AP]</b>	Identify author's intent or purpose.
<b>[MI]</b>	Identify the main idea that is stated or implied.	<b>[RE]</b>	Analyze relationships (ideas, story elements, text structures).
<b>[CV]</b>	Clarify vocabulary.	<b>[AC]</b>	Author's craft; literary devices

## Lesson 7

**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

### Teacher Background

During Class Discussion, students orally present evaluations of their homework reading selections. During Teamwork, students use their Read and Respond notes and answers to the homework questions to make final preparations for these presentations. Team members share their responses and give one another feedback. During the oral presentations, students use their revised responses to the questions to describe the kind of texts they read, the strategies that helped them understand the text, and whether they will recommend their reading selections to others.



## Active Instruction tp

(20 minutes)

### Big Question

Post and present today's Big Question. Have students write a response to the question as they arrive for class.

Students write responses to the Big Question.

**The Big Question:** What are the meanings of the underlined words in this sentence? Use your Clarifying Strategy Card.

"Your teacher made it clear that assignments must be turned in on time, so I don't know why you are baffled by the repercussions for turning your report in late," Tierra's mother said.

### Set the Stage

1. Refer students to today's Big Question. Use **Think-Pair-Share** to ask:

**What are the meanings of the underlined words in this sentence? Use your Clarifying Strategy Card.**

"Your teacher made it clear that assignments must be turned in on time, so I don't know why you are baffled by the repercussions for turning your report in late," Tierra's mother said.

*For example, baffled means confused. We used clues in the sentence to figure it out. If the teacher made something clear, then Tierra's mother doesn't know why Tierra is confused.*

*For example, we think repercussions must mean consequences. We figured it out from clues because Tierra's teacher made it clear that assignments need to be turned in on time. If she didn't turn her report in on time, there were probably consequences such as detention or being marked down.*

Discuss the Big Question.





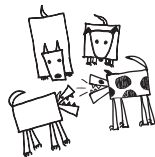
Connect the cycle objective to students' homework reading selections.

Use **Random Reporter** to debrief, and award team celebration points to teams that describe the strategies they used.

2. Have students get out their reading selections and Read and Respond forms. Remind them that today, with the help of their teams, they will each prepare a presentation about their individual reading selections.

Challenge students to think about the strategies and skills that they used to read their self-selected texts, share their answers to the Read and Respond questions, discuss their thinking, and prepare evaluations of their selections.

3. Remind students to add to the notes on their Read and Respond forms as they discuss their selections and prepare oral presentations about their selections. Students will use their answers to the questions on the Read and Respond form as the basis for their presentations.



## Teamwork tp

(25 minutes)

### Team Discussion

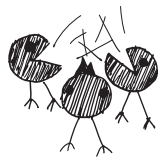
1. Tell students that they will use the Read and Respond questions as a guide as they discuss their homework reading and prepare evaluations of their reading selections to share with their teams.
2. As you visit teams, take this opportunity to check students' homework for completion (Read and Respond forms). Enter the information on your teacher cycle record form.

### Teacher's Note:

Have students who are ready for a new selection take turns choosing reading material from the classroom library. Make sure that every student has a Read and Respond form for next cycle.

Give students feedback on classwork.

Read and Respond Questions	
1.	Is your selection informational or literature? Summarize your reading. (summary rubric)
2.	Why did you choose this reading? What is your purpose for reading? (Team Talk rubric)
3.	Choose a word, phrase, or passage that you did not understand at first. How did you figure it out? (strategy-use rubric)
4.	Write down a question that you had or a prediction that you made as you read. Were you able to answer or confirm it? Explain. (strategy-use rubric)
5.	Would you recommend this selection to others to read? State your opinion, and support it with reasons. (Team Talk rubric)
6.	Choose a short section of the text that you think is important or especially interesting. Tell your teammates why you chose it. Read it aloud smoothly and with expression. (fluency rubric)



## Class Discussion tp

(15 minutes)

### Lightning Round

Use **Random Reporter** to have students present their evaluations of their homework reading selections (responses to the Read and Respond questions). Award points for complete answers that explain the student's thinking. Use the strategy-use rubric to evaluate responses to question #3, give specific feedback, and award points.

### Celebrate

1. Tally up this cycle's points on the poster.
2. Tell students that their scored tests will be returned at the beginning of the next lesson. Poster points and the teams' test scores will determine which teams earn the status of super team, great team, or good team for the cycle.
3. Be sure to record each team's total celebration points from the poster into the teacher cycle record form. Remind students that team celebration points and team test averages are used to determine team scores.
4. Collect students' Read and Respond forms, and pass out new forms.
5. Tally up the number of Read and Respond signatures on students' forms, and record the number on the teacher cycle record form after class.

Team responses and feedback



Teams report on their review of the texts and Read and Respond discussions.

Celebrate team successes!  
Final tally for this cycle

Record team celebration points on the teacher cycle record form.

Collect Read and Respond forms for this cycle.

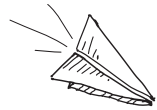


## Lesson 8

**Objectives:** Celebrate successes, and set new goals. Hold a Class Council meeting.

### Teacher Background

In this lesson, students learn and complete a new opening activity, the Two-Minute Edit. Next, they review their test results and their final scores for the cycle and compare them with their goals. They celebrate success and set new goals. Then students hold their first Class Council in which they practice using “I” Messages, Think-It-Through, and the Peace Path to resolve a class problem. The class reflects on the process, sets a goal for improving teamwork, and identifies criteria for evaluating success. The lesson ends with a brain game and a short debriefing of the thinking that students used to play the game.



## Active Instruction

(20 minutes)

### Two-Minute Edit

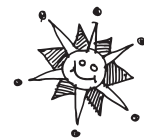
- As students arrive for class, introduce the Two-Minute Edit. Tell them the types of mistakes to look for in the sentence. Challenge teams to find and fix the mistakes in the following sentence.

**There are four mistakes in this sentence. Can you find them and fix them?**

A clarifying strategy we used are using clues in the sentence and using the dictionary.

*Two clarifying strategies we used were using clues in the sentence and using the dictionary.*

- Use **Random Reporter** to debrief, and award team celebration points to teams that find the mistakes and explain the edits that they made.



## Celebrate/Set Goals

(28 minutes)

- Explain how team celebration points scores and test results are combined to identify super teams, great teams, and good teams using the video. You can introduce the video this way.

**The team is about to find out how they did this cycle. Will they be a super team, a great team, or a good team?**

Teams complete a Two-Minute Edit.



Show the video “Are we a super team?”



Distribute scored cycle tests, team score sheets, and celebration certificates.

Celebrate team successes.

Show the video “Team Goal Setting.”



Set new team goals.



2. Introduce the video by telling students that it will explain how their team celebration points factor into their scores. Show the video.

3. Debrief the video. Use **Think-Pair Share** to ask:

**How do team celebration points help team scores?**

*Team celebration points increase team scores and help teams become super teams.*

4. Distribute students’ scored cycle tests. Allow a few moments for students to review them.

5. Distribute team score sheets to teams and celebration certificates to students. Remind students that the cycle’s top-scoring teams are determined by their points on the poster and their test scores.

6. Recognize and celebrate the super, great, and good teams. Remind the teams of the impact of bonus points that are added to team members’ cycle scores.

7. Introduce the process for selecting a team goal using the video. Debrief the video. Use **Think-Pair-Share** to ask:

**How did the team use the team score sheet?**

*They used it to check their team scores from the cycle to see how they were doing. They used it to figure out what they wanted to improve and to set a goal for next cycle.*

**What is the team’s goal for next cycle? Why did they choose that goal?**

**Why would it help the team to set a goal for the next cycle?**

*If the team decides on a goal, all the team members know what they will work on next cycle. They will get 10 extra points added to their team celebration total if they meet their goal.*

8. Have each team discuss and set a goal for the next cycle and record it on their team score sheet.

Use **Random Reporter** to ask:

**What is your team’s goal for the next cycle? Why did you choose that goal?**

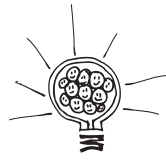
*Accept supported answers.*

Use the poster to award team celebration points for responses that include the team’s reasons for choosing the goal, thus beginning the accumulation of points for the next cycle.

9. Have students record their cycle test scores and their areas of greatest strength and improvement on their progress charts.

**How do you think your progress chart will help you in the Reading Edge?**

*My progress chart will help me see how far I’ve come in the Reading Edge and what I need to do to grow.*



# Class Council

(25 minutes)

Introduce students to the parts of a Class Council meeting.

1. Share class compliments.
2. Discuss a class concern, or use the scenario and discussion hints provided.
3. After debriefing how they resolved the problem, help students set a goal and a measure of progress that they can use at the next Class Council.

**Class compliments:** Explain that every Class Council begins with class compliments. They are encouraging words that anyone in the class can share during Class Council to acknowledge others. Class compliments provide an opportunity to recognize someone in class for helping others meet a goal or for treating others with kindness and respect at any time, even other classes or times during the school day. Class compliments recognize behavior, but not how someone looks or what they have.

Read the sample compliment.

“I would like to compliment Ava for helping me with my math word problems. After she listened to what was confusing to me, she asked me questions and helped me clarify the question.”

Post the class compliment on the board.

tps

Use **Think-Pair-Share** to ask:

**What did Ava do that earned a class compliment?**

*Ava listened actively and asked questions until her friend figured out the math problem. She didn't do the problem for her. She helped her friend do it herself.*

Ask teams to discuss the following statements and suggest which one is not a class compliment.

**“I would like to compliment Derek because he actively listened while I explained my thinking, even when he disagreed.”**

**“I would like to compliment Matt on his new football jersey. It is awesome.”**

**“I would like to compliment Susan for making sure that everyone contributed to our team discussion.”**

**“I would like to compliment my team for not getting distracted by all the noise in the hallway. We had a great discussion.”**

Use **Random Reporter** to ask for responses.

*The comment about Matt's football jersey is not an appropriate class compliment. It is not about something that Matt did for someone else; it is about something that he has.*

Post these statements on the board.



**Review progress:** Since this is the first Class Council, there is not a goal to review.

**Discuss a concern:** This is a time for you and your students to bring up concerns or problems that are getting in the way of successful teamwork. Since this is a new process, a scenario and discussion hints are provided for the first three cycles to launch this process. A bank of scenarios and discussion hints for possible use in future Class Councils is included in *The Reading Edge Middle Grades 2nd Edition Teacher's Guide* and in the online resources.

**Scenario:** Our class is having trouble keeping an appropriate noise level during teamwork. It is hard for partners to hear each other during partner reading. The Thundercats are part of the problem. Sarah keeps talking about a new TV show that she wants to watch this weekend, and her partner Thomas is getting angry and frustrated as Sarah ignores his requests to pay attention to what he is reading.

**What would you do if you were Thomas? What can the class do to maintain an appropriate noise level?**

**Discussion Hints:**

- Thomas recognizes that his emotional temperature is rising. He can stop and use a cool-down strategy that works for him before he speaks to Sarah again.
- Next, he could use an “I” Message rather than an accusing “you” statement to clearly ask Sarah to participate in partner reading with him.
- Thomas and Sarah could go to a thinking spot and use a Think-It-Through sheet to organize their thoughts and consider alternate solutions and their consequences.
- Finally, if Thomas and Sarah are still having trouble communicating, they can use the Peace Path process. This will give both of them the chance to express how they feel and to think through alternative solutions until they find one that works well for them.

**Set a class goal:** Identify a way to measure success so students can determine if they have met their goal by the next Class Council. For example, the class could decide to have the teacher signal the class by switching the lights on and off when the noise level gets too high. They could keep track of how many warnings are needed each day to see if they are becoming more aware of when they are too loud.



# Brain Game

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(5 minutes)

1. Choose a brain game from the card set and play.
2. Use the following questions to debrief and remind students of self-regulatory strategies:

**What did this game require your brain to do?**

**How will use of this skill improve your success in other classes?**



## Cycle 2:

Clarify  
Words  
and Ideas

## Lesson 1

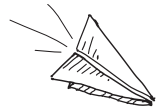
**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

**Teacher Background**

In this lesson, you will introduce the Team Talk rubric. Like the strategy-use rubric, the Team Talk rubric sets the expectations for a quality response. You and your students will use it to evaluate their answers in team discussion and in the Lightning Round. Students will view a video of teams using the rubric to build a quality answer. They will also evaluate a team's answer using the rubric. Is it a 100-point answer? Why or why not?

The rubric specifies the use of academic language in a quality answer. Academic language is defined for students as the language used in school. Guide students and teams to an understanding of academic language by discussing examples of it in student answers. Sample 80-point, 90-point, and 100-point answers are provided for each Team Talk question in the Reading Edge, and examples of academic language are indicated.

Students will also use role cards during team discussion.

**Active Instruction** 

(22 minutes)

**Big Question**

Post and present this cycle's Big Question. Have students write a response to the question as they arrive for class.

**The Big Question:** When you are answering questions in school, how do you know when you have a quality answer?

Students write responses to the Big Question.

Discuss the Big Question.



Teams review their cycle goal.

Post and present the reading objective.

Introduce the Team Talk rubric.

Explain what makes a 100-point high-quality answer.

**Set the Stage**

1. Refer students to today’s Big Question. Use **Think-Pair-Share** to ask:

**When you are answering questions in school, how do you know when you have a quality answer?**

*A quality answer correctly answers the question. It explains your thinking and how you got to that answer.*

Record student responses on the board.

2. Ask students to review their cycle goal. Remind students how to earn team celebration points. Remind them that team celebration points help them to become super teams. Tell them that they can earn team celebration points during the Lightning Round.
3. Introduce the texts, authors, and reading objective.
4. Display and introduce the Team Talk rubric. The rubric can also be found in the team folder.

<b>Team Talk (oral and written)</b>	
<b>The Random Reporter:</b>	
<b>100</b>	gives a 90-pt. response <b>and connects the answer to the supporting evidence and uses academic language.</b>
<b>90</b>	gives an 80-pt. response <b>and includes supporting evidence and examples (from the text or from experience).</b>
<b>80</b>	<b>uses full sentences to clearly and correctly answer the question.</b>

5. Explain to students that the rubrics are tools for teams to use when they are getting ready for the Lightning Round. When they are discussing and answering Team Talk questions, they will need to have a high-quality 100-point answer to get points for their team.
6. Review the Team Talk rubric, noting that correctly answering a question in full sentences is the bottom level of the rubric. Answering correctly in full sentences and including evidence to support the answer is the second level. The top level of the rubric describes a high-quality answer. Point out that the top level requires explaining the thinking behind an answer and using academic language, in other words, the language of school.
7. Display the following sample answers to a Team Talk question, and use the rubric to discuss the elements that make a 100-point answer. Note the color coding in the answers for a correct answer, supporting evidence and examples, a wrap-up that connects the answer to the evidence, and examples of academic language.



Sample Team Talk Question	
Explain how autistic children communicate differently from children who develop normally.	
<p>Team A's answer:</p> <p><i>Autistic children communicate differently because autistic children use words and phrases differently.</i></p> <p>Team B's answer:</p> <p><i>Autistic children communicate differently because autistic children use words and phrases differently. For example, one child used commercial jingles to communicate. Autistic children reverse pronouns so I means you. Also, words may have strange meanings, such as using the word brain to mean car exhaust. Being aware of these differences can lead to a better understanding of autistic children.</i></p> <p>Team C's answer:</p> <p><i>Autistic children communicate differently because autistic children use words and phrases differently. One child used commercial jingles to communicate. Autistic children reverse pronouns so I means you.</i></p>	<p>Correct answer in complete sentences</p> <p>Supporting evidence and examples</p> <p>Wrap-up that connects the answer to the evidence</p> <p>Academic language</p>

8. Introduce the video.

**Now you will see the team discuss the answer to this Team Talk question and use the rubric to get ready for the Lightning Round. Let's see if they prepare a 100-point answer.**

Show the first part of the video. Use **Think-Pair-Share** to debrief.

**How did the team use the rubric to prepare for the Lightning Round?**

Show the second part of the video. Use **Think-Pair-Share** to debrief.

**Why didn't the team earn a team celebration point? What was missing from their answer?**

Show the third part of the video. Use **Think-Pair-Share** to debrief.

**Did the team use academic language in their answer? How?**

Remind students that the rubrics will help them prepare high-quality answers and earn team celebration points in the Lightning Round.

Show the video "Team Talk."



Refer students to pages 14 and 15 in the text.

**Teacher:** Read aloud.

**Students:** Practice the skill or strategy.

**Interactive Read Aloud**

1. Have students preview today’s text “Speech: Dances of the Vocal Tract,” pages 14 and 15 in *Odyssey* magazine.

Refer to the reading objective, and review the skill if necessary. Tell students that you are going to read aloud and then think aloud as you use some clarifying strategies. Read page 14 (the introduction and sentence 1 in paragraph 1) aloud, stopping after the word *mouth*. A sample Think Aloud follows.

Sample Think Aloud
<p>I am confused by the first sentence in the first paragraph. It says, “Pay close attention to what’s happening inside your mouth.” I don’t know what the author means by this phrase. Does it mean that you need to look in a mirror at the inside of your mouth? Why do you need to pay such close attention? I will read on to see if I find answers to my questions.</p> <p><b>(Read to the end of the paragraph aloud.)</b></p> <p>The paragraph mentions that when you speak, your lips may come together, or your tongue may hit the roof of your mouth. You might not even notice because these movements happen so fast. You don’t need to look in a mirror then. You can just notice the movement of your lips or tongue as you speak. So to restate the main idea of the paragraph, the moving parts between your lips and throat make up your vocal tract. The vocal tract makes speaking possible.</p>



2. Use **Think-Pair-Share** to debrief the Think Aloud.

**Which clarifying strategies did I use?**

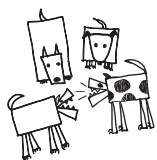
*You read on and found clues in the rest of the paragraph about why you should pay attention to what happens inside your mouth. That helped you clarify what the author meant and showed that different movements involving your mouth happen when you speak.*

3. Partner Practice: Have students read page 14 (paragraph 2) aloud to their partners. Listening partners restate the ideas in the paragraph. Use **Think-Pair-Share** to ask:

**How did restating the ideas help you check your understanding?**

*My partner restated the main idea as speech articulators have a certain kind of dance. I added that this type of dance can’t be seen, but it creates a specific pattern of sound.*

**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill or strategy.



# Teamwork tp

(20 minutes)

## Partner Prep

1. Refer students to the teamwork routines for partner reading in their team folders, and review the routine.


With Partners	First	Second	Third	Fourth	Finally
<b>1 Partner Reading</b>	Take turns reading a paragraph or section of text aloud. Mark problems with a sticky note.	Clarify confusing words and passages.	After each paragraph or section, the listening partner restates the main ideas or events.	Both partners make notes about main ideas or events. Review the paragraph or section, and discuss supporting details. Add them to your notes.	Take unsolved sticky-note problems to team discussion.

2. Have students read and restate: sr  
**pages 14 (beginning from paragraph 3) and 15 aloud with partners.**
3. Circulate and check for comprehension, restating of main ideas, and evidence of strategy use, for example, the use of sticky notes. Give students feedback. Prompt and reinforce their discussions.

## Team Discussion

1. Prepare students for team discussion. Refer them to the role cards in their team folders, and explain that the role cards will guide their discussions of the Team Talk questions. Have teams distribute a role card to each team member.

Point out that teams will discuss their sticky-note problems and then go on to a discussion of the other Team Talk questions.


 **First**

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**Read the question.**

1. Read the question to your teammates.
2. Make sure everyone practices active listening.
3. Ask if everyone heard and understood the question.
4. Identify the right rubric.


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 **Second**

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**Answer the question.**


1. Restate the question in your own words.
2. Use the rubric to form your answer.
3. Tell and explain your answer.
4. Ask if everyone heard your answer.

 **Third**

---

**Agree OR disagree.**

1. Restate your teammate's answer.
2. Agree and add additional information, OR disagree and explain why.
3. Ask if everyone heard your answer.

 **Finally**

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**Summarize.**

1. Restate the group's agreed-upon answer.
2. Check to make sure each teammate understands the answer.
3. Make sure each teammate is ready for the Lightning Round.
4. Pass the role cards to the right.

2. Remind teams to use the rubrics to prepare for the Lightning Round.

Prepare students for team discussion.

Teams distribute a role card to each team member.

## 3. Preview the Team Talk questions.

## Team Talk Questions

1. What is a word, phrase, or passage that a team member marked with a sticky note? Explain which clarifying strategies you used to figure out the marked word or phrase. How did figuring out the word, phrase, or passage help you better understand the text? **[CV]** (strategy-use rubric)

*100 = A team member marked the word choreograph because he didn't know what it meant. He has seen it used to mean plan out dance moves. He reread the sentence and used the meaning of choreograph, but it didn't make sense. A team member said choreograph referred to planning movements, not necessarily just related to dance. This helped us understand that the author's point about how different languages require different planned movements of the constricting devices in the vocal tract.*

*90 = A team member marked the word choreograph because he didn't know what it meant. He reread the sentence and used the meaning of choreograph, but it didn't make sense. A team member said choreograph referred to planning movements.*

*80 = A team member marked the word choreograph because he didn't know what it meant.*

2. How is sound made in the vocal tract? **[MI]** (Team Talk rubric)

*100 = Sound is made in the vocal tract by the different parts working together. The larynx, also referred to as the voice box, vibrates. When air passes through it, the vocal folds vibrate. This creates a buzzing sound like an electric shaver. The sound travels from the larynx through the mouth and nose. The sound is affected by the shape of the vocal tract. Many parts are involved in producing sound.*

*90 = Sound is made in the vocal tract by the different parts working together. The larynx vibrates. When air passes through it, the vocal folds vibrate. This makes a buzzing sound. The sound travels from the larynx through the mouth or nose.*

*80 = Sound is made in the vocal tract by the different parts working together.*

3. How are constricting devices similar to the trombone slide? **[DC, SA]** (Team Talk rubric)

*100 = Constricting devices affect the shape and length of the vocal tract tube the way the trombone slide changes a trombone's length. When a trombone's sliding tube is moved, the tube's length changes and affects how low or high a sound is. There are various constricting devices, such as the tip of the tongue and the lips, that affect the sounds produced. Constricting devices and the trombone slide both affect sound.*

*90 = Constricting devices affect the shape and length of the vocal tract tube the way the trombone slide changes a trombone's length. When a trombone's sliding tube is moved, the tube affects how low or high a sound is. There are many constricting devices that affect the sounds made.*

*80 = They affect the shape and length of the vocal tract tube the way the trombone slide changes a trombone's length.*

*continued*

Team Talk Questions *continued*

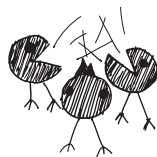
4. What is the difference between saying the words *bad* and *dad*? [MI, SA]  
(Team Talk rubric)

100 = *The difference between saying the words bad and dad is how the mouth moves. When saying the word bad, the upper lip makes firm contact with the lower lip. You can observe this happen if you watch someone say bad. When saying the word dad, the tip of the tongue rises against the upper teeth. This can't be observed as easily. Although the words bad and dad rhyme, the actions made when saying them are very different.*

90 = *The difference between saying the words bad and dad is how the mouth moves. When saying the word bad, the upper lip touches the lower lip. You can see this happen. When saying the word dad, the tip of the tongue rises against the upper teeth.*

80 = *The difference between saying the words bad and dad is how the mouth moves.*

4. Circulate and give feedback to teams and students. Use rubrics to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
5. Award team celebration points for good team discussions that demonstrate 100-point responses.



## Class Discussion tp

(18 minutes)

1. Remind students that Random Reporters will earn team celebration points for quality responses. Remind students that you will record points on the Team Celebration Points poster and that they can keep track of points that they earn on their team score sheets.

This is the first use of the Team Talk rubric to prepare and evaluate responses.

Class Discussion	
Strategy-Use	<ul style="list-style-type: none"> <li>• Describe your team's strategy use.</li> <li>• How did you resolve a sticky note?</li> <li>• How did it help you understand the text?</li> </ul>
Team Talk (written and oral)	<ul style="list-style-type: none"> <li>• Did you enjoy your reading? Why or why not?</li> <li>• Discuss Team Talk questions.</li> <li>• Explain your team's discussion.</li> <li>• Read your team's written answer to the class.</li> <li>• What makes it a good answer? How can you improve it?</li> </ul>

Team responses and feedback



2. Use **Random Reporter** to have teams share their strategy-use responses (question #1). Display and use the strategy-use rubric to evaluate responses and give specific feedback. Award team celebration points for teams with 100-point responses. Record individual scores on the teacher cycle record form.
3. Use **Random Reporter** to have teams share their Team Talk responses (questions #2 and #4). Display and use the Team Talk rubric to evaluate responses and give specific feedback. Award team celebration points for teams with 100-point responses. Record individual scores on the teacher cycle record form.

### **Celebrate**

Celebrate team successes!

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

The top team chooses a cheer.

2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Remind students of the Read and Respond homework assignment.

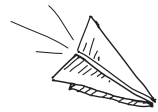
# Lesson 2

**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

## Teacher Background

In this lesson, you will introduce vocabulary words for this cycle and the partner vocabulary study routine. Emphasize the value of the vocabulary study routine. Remind students that when partners quiz each other on a regular basis, they are strengthening their brain connections and their memories. This studying will help them not only to do well on the cycle test, but also to build their vocabulary knowledge and their ability to understand and use more words.

Today students will read “Animal Communications 101: Lessons with Doctor Dolittle.” This article explores different ways that animals communicate. Some animals included in the article are vervet monkeys, song sparrows, and honeybees. The article emphasizes that though animals cannot speak or write, they can certainly communicate.



## Active Instruction tp

(25 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

## Partner Vocabulary Study

1. Display the vocabulary words and the following partner vocabulary study routine.

Partner Vocabulary Study		
<b>1.</b>	Rate your knowledge of each vocabulary word.	<ul style="list-style-type: none"> <li><b>+</b> I know this word and can use it.</li> <li><b>✓</b> This word looks familiar; it has something to do with...</li> <li><b>?</b> I don't know this word; it's totally new to me.</li> </ul>
<b>2.</b>	Discuss with your partner a vocabulary word you know and one that needs further study.	
<b>3.</b>	Take turns pronouncing the vocabulary words, telling their meanings, and using the words in new sentences.	
<b>4.</b>	Listening partners give thumbs up if the word is used correctly or add ideas to help their partners.	

2. As they arrive for class, have students copy the vocabulary words in their notebooks and rate their knowledge of each word using + , ✓, or ? as outlined in step 1 of the partner vocabulary study routine. The routine can also be found in the team folder.

3. Spot check the Read and Respond homework.

Teams discuss their vocabulary ratings.



Introduce vocabulary.

### Vocabulary

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a “+” and a word the entire team rated with a “?”.
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Award team celebration points.
3. Explain that each cycle students will have vocabulary words from the text they are reading that will be on the cycle test. The vocabulary section of the test makes up one third of their cycle test score. Throughout the cycle, partners will have the opportunity to review and study the vocabulary words in preparation for the test.
4. Introduce the vocabulary for this cycle. Read each word aloud, and model chunking as needed. Then read the meaning of each word.

Word	Pronunciation	Definition	Sample Sentence
<b>constricting</b> (verb) page 14	con-strict-ing (kuhn-STRIKT-ing)	becoming smaller or narrower; drawing together	As soon as Rory stood up to give his presentation, he felt his throat <i>constricting</i> because he was so nervous.
<b>traverse</b> (verb) page 24	trav-erse (trav-ERS)	to pass or move through; to travel	When Maisie arrived at the huge university for a tour, she realized that it would take a while to <i>traverse</i> the entire campus.
<b>expanses</b> (noun) page 24	ex-pan-ses (ek-SPANS-iz)	things that are spread out over a large area	The great explorers who crossed the vast <i>expanses</i> of the seven seas in small ships were very brave.
<b>deciphering</b> (verb) page 27	de-ci-pher-ing (dih-SY-fer-ing)	figuring out; understanding	Logan’s mother left him a note, but her handwriting was so sloppy that he asked his sister for help in <i>deciphering</i> the message.
<b>recruit</b> (verb) page 18	re-cruit (ri-KROOT)	to involve or enlist	Since there were so many refreshments and decorations to set up before her party, Kelly decided to <i>recruit</i> her friends to help.

*continued*



Word	Pronunciation	Definition	Sample Sentence
<b>injected</b> (verb) page 19	in-ject-ed (in-JEKT-id)	put a substance into the body using a needle	Since Felix’s grandmother had diabetes, she <i>injected</i> herself with insulin daily to regulate her blood sugar.
<b>collide</b> (verb) page 19	col-lide (kuh-LYD)	to strike with a lot of force	When the car in front of Dustin suddenly slowed down, he slammed on his brakes so he would not <i>collide</i> with it.
<b>mimic</b> (verb) page 48	mim-ic (MIM-ik)	to imitate or copy	Willow always impresses her friends with how well she can <i>mimic</i> different movie characters.

5. Refer to the partner vocabulary study routine chart, and explain that students will use this routine to review their vocabulary during the cycle in preparation for the cycle test.

Introduce the video. A team uses the partner vocabulary study routine to practice and learn the vocabulary words.

Show the video. Debrief the video.

**Why did the partners put a ✓ and not a + next to some words?**

**When partners use the vocabulary study routine, they are testing each other. Research has shown that learners who test themselves on vocabulary words are able to remember them better with each test. More practice improves memory of the words and their meanings. This study routine will help you not only to do well on the vocabulary part of the cycle test, but also to build your vocabulary knowledge so you can understand and use more words.**

6. Have partners practice the study routine with the rest of the words in the vocabulary list.

Use **Random Reporter** to have teams share a new sentence that uses one of their vocabulary words. Award team celebration points.

Show the video “Rating Vocabulary Words.”



Explain why the study routine improves memory and builds vocabulary.

Partners practice the vocabulary study routine.

Explain Vocabulary Vault.

Teams review their cycle goal.

Post and present the reading objective.  
Show the video.



Refer students to pages 24–27 in the text.

**Teacher:** Read aloud.

**Students:** Actively listen.



**Students:** Practice the skill or strategy.

7. Explain how teams use the Vocabulary Vault to earn points.

**Another way to earn points is by bringing in a word from the vocabulary list that is used in another place, such as in a magazine, textbook, TV ad, etc. Bring in, or copy, the sentence in which the word was used on a vocabulary voucher, and share it with your team. Write the team name on it, and put it in the Vocabulary Vault. We’ll check the vault at the end of the cycle, and teams can earn points by reporting on their word findings.**

**Set the Stage**

1. Ask students to review their team’s goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading objective.
4. Build background by showing the video “Science Nation: Talk to the Animals.” Use **Think-Pair-Share** to debrief the video.

**What new information did you learn about animal communication?**

*Students may say that they learned that some animals such as gray parrots can use language to communicate ideas about color and shape.*

**Interactive Read Aloud**

1. Tell students that you are going to read aloud. Challenge students to actively listen because you will ask them to restate the ideas in these beginning paragraphs to their partners. Point out that if they have trouble clearly restating the text in their own words, it means they have not fully understood it. They will need to refer to their Clarifying Strategy Card and use strategies to clear up the problem.
2. Read the introduction on page 24 (paragraph 1) aloud. Have partners restate the ideas in the paragraph in their own words. Use **Think-Pair-Share** to prompt the use of clarifying strategies.

**Was your partner able to clearly restate the ideas in the paragraph? If not, which clarifying strategies did you use?**

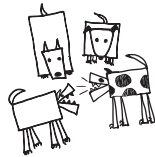
*My partner was unclear on the word brainiest. We knew the word brain means the organ that allows you to think, but we did not understand brainiest. We had to reread and read on to figure out that if he knows so many kinds of communication, he must be very intelligent. So brainiest means most intelligent or smartest.*

**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill or strategy.

3. **Partner Practice:** Have students read paragraph 1 on page 24 aloud to their partners. Listening partners restate the ideas in the paragraph. Use **Think-Pair-Share** to ask:

**How did restating the ideas help you check your understanding?**

*When we tried to restate the ideas, we found that we had to stop and reread the first sentence. It had some unfamiliar words, so we had to break them down to understand the sentence's meaning. Specialized relates to something done for a certain reason or purpose, and adapted means changed to fit the environment. So the ways that animals communicate are based on what's in their environment.*



## Teamwork tp

(20 minutes)

### Partner Prep





1. Refer students to the teamwork routines for partner reading in their team folders, and review the routine.
2. Have students read and restate: sr **pages 24 (paragraph 2)–27 aloud with partners.**
3. Circulate and check for comprehension, restating of main ideas, and evidence of strategy use, for example, the use of sticky notes. Give students feedback. Prompt and reinforce their discussions.

### Team Discussion

1. Prepare students for team discussion. Refer them to the team discussion role cards in their team folders, and review them. Point out that teams will discuss their sticky-note problems and then go on to a discussion of the other Team Talk questions.

Prepare students for team discussion.

Teams distribute a role card to each team member.

 <b>First</b> <hr/> <p>Read the question.</p> <ol style="list-style-type: none"> <li>1. Read the question to your teammates.</li> <li>2. Make sure everyone practices active listening.</li> <li>3. Ask if everyone heard and understood the question.</li> <li>4. Identify the right rubric.</li> </ol> <p><small>© 2012 Success for All Foundation 34234 00000</small></p>	 <b>Second</b> <hr/> <p>Answer the question.</p> <ol style="list-style-type: none"> <li>1. Restate the question in your own words.</li> <li>2. Use the rubric to form your answer.</li> <li>3. Tell and explain your answer.</li> <li>4. Ask if everyone heard your answer.</li> </ol>	 <b>Third</b> <hr/> <p>Agree OR disagree.</p> <ol style="list-style-type: none"> <li>1. Restate your teammate's answer.</li> <li>2. Agree and add additional information, OR disagree and explain why.</li> <li>3. Ask if everyone heard your answer.</li> </ol>	 <b>Finally</b> <hr/> <p>Summarize.</p> <ol style="list-style-type: none"> <li>1. Restate the group's agreed-upon answer.</li> <li>2. Check to make sure each teammate understands the answer.</li> <li>3. Make sure each teammate is ready for the Lightning Round.</li> <li>4. Pass the role cards to the right.</li> </ol>
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2. Remind teams to use the rubrics to prepare for the Lightning Round.

## 3. Preview the Team Talk questions.

## Team Talk Questions

1. What is a word, phrase, or passage that a team member marked with a sticky note? Explain which clarifying strategies you used to figure out the marked word or phrase. How did figuring out the word, phrase, or passage help you better understand the text? **[CV]** (strategy-use rubric)

100 = A team member marked the passage about Clever Hans stomping his hoof with a sticky note because she couldn't follow it. The strategy she tried was rereading and picturing what is going on in the text. Clarifying the passage helped her understand that Hans didn't actually understand spoken language and used visual clues to figure out how to stomp out the answers to questions.

90 = A team member marked the passage about Clever Hans stomping his hoof with a sticky note because she couldn't follow it. The strategy she tried was rereading and picturing what is going on in the text.

80 = A team member marked the passage about Clever Hans stomping his hoof with a sticky note because she couldn't follow it.

2. Why are signals important to vervet monkeys? **[MI, DC, SA]** (Team Talk rubric)

100 = Signals are important to vervet monkeys because they use these signals to **communicate** information. Vervet monkeys use signals to warn one another about predators. They have **specific** signals to **indicate various types** of predators. **For example**, a double cough is a warning about an eagle meaning that all vervets should hide in the bushes. **Without these signals**, vervet monkeys might not be **aware** of predators.

90 = Signals are important to vervet monkeys because they use these signals to share information. Vervet monkeys use signals to warn one another about predators. A double cough is a warning about an eagle and that all vervets should hide in the bushes.

80 = Signals are important because the monkeys use them to share information.

3. What did Margaret Morris's observations reveal? **[MI, DC, SA]** (Team Talk rubric)

100 = Margaret Morris's observations revealed that song sparrows' songs have meaning. **For example**, two males may sing the same song to compete. One male's song might **indicate** that he is fierce and that the other one should watch out. If the other song sparrow repeats the same song, it **demonstrates** that he is not afraid. **Song sparrows sing to show how they are feeling, not just for fun.**

90 = Margaret Morris's observations revealed that song sparrows' songs have meaning. Two males may sing the same song to compete. One male's song might show that he is fierce and that the other one should watch out.

80 = They revealed that song sparrows' songs have meaning.

continued

Team Talk Questions *continued*

4. Why is the waggle dance important to honeybees? **[MI, DC, SA]** (Team Talk rubric)

100 = *The waggle dance is important to honeybees because the dance moves **communicate** information about sources of food. For example, dancing in an excited way **indicates knowledge** of tasty and nutritious food. On the other hand, dancing less excitedly means leftovers. The waggle dance helps honeybees find good food.*

90 = *The waggle dance is important to honeybees because the dance moves share information about sources of food. Dancing in an excited way means knowing about tasty food. Dancing less excitedly means leftovers.*

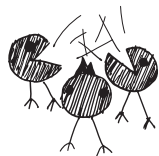
80 = *It is important because the dance moves share information about sources of food.*

5. Which word from the vocabulary list belongs in the blank? How do you know? **[CV]**

Ms. Hebert gave her students the challenge of \_\_\_\_\_ a message written in symbols rather than letters.

*Deciphering belongs in the blank. I know because it means figuring out. The word challenge and the fact that the message is written in symbols instead of letters are clues.*

4. Circulate and give feedback to teams and students. Use rubrics to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
5. Award team celebration points for good team discussions that demonstrate 100-point responses.



## Class Discussion tp

(15 minutes)

### Lightning Round

1. Remind students that Random Reporters will earn team celebration points for quality responses. Remind students that you will record points on the Team Celebration Points poster and that they can keep track of points that they earn on their team score sheets.
2. Use **Random Reporter** to have teams share their strategy-use responses (question #1). Display and use the strategy-use rubric to evaluate responses and give specific feedback. Award team celebration points for teams with 100-point responses. Record individual scores on the teacher cycle record form.

Team responses  
and feedback



3. Use **Random Reporter** to have teams share their Team Talk responses (questions #2–4). Display and use the Team Talk rubric to evaluate responses and give specific feedback. Award team celebration points for teams with 100-point responses. Record individual scores on the teacher cycle record form.

### **Celebrate**

Celebrate team successes!

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

The top team chooses a cheer.

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

Remind students of the Read and Respond homework assignment.

2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

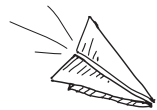
Word	Pronunciation	Definition	Sample Sentence
<b>constricting</b> (verb) page 14	con-strict-ing (kuhn-STRIKT-ing)	becoming smaller or narrower; drawing together	As soon as Rory stood up to give his presentation, he felt his throat <i>constricting</i> because he was so nervous.
<b>traverse</b> (verb) page 24	trav-erse (trav-ERS)	to pass or move through; to travel	When Maisie arrived at the huge university for a tour, she realized that it would take a while to <i>traverse</i> the entire campus.
<b>expanses</b> (noun) page 24	ex-pan-ses (ek-SPANS-iz)	things that are spread out over a large area	The great explorers who crossed the vast <i>expanses</i> of the seven seas in small ships were very brave.
<b>deciphering</b> (verb) page 27	de-ci-pher-ing (dih-SY-fer-ing)	figuring out; understanding	Logan's mother left him a note, but her handwriting was so sloppy that he asked his sister for help in <i>deciphering</i> the message.
<b>recruit</b> (verb) page 18	re-cruit (ri-KROOT)	to involve or enlist	Since there were so many refreshments and decorations to set up before her party, Kelly decided to <i>recruit</i> her friends to help.
<b>injected</b> (verb) page 19	in-ject-ed (in-JEKT-id)	put a substance into the body using a needle	Since Felix's grandmother had diabetes, she <i>injected</i> herself with insulin daily to regulate her blood sugar.
<b>collide</b> (verb) page 19	col-lide (kuh-LYD)	to strike with a lot of force	When the car in front of Dustin suddenly slowed down, he slammed on his brakes so he would not <i>collide</i> with it.
<b>mimic</b> (verb) page 48	mim-ic (MIM-ik)	to imitate or copy	Willow always impresses her friends with how well she can <i>mimic</i> different movie characters.

## Lesson 3

**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

### Teacher Background

Today students will read “We Speak with the Left Side of Our Brain!” This article describes the importance of Broca’s and Wernicke’s areas in producing and understanding language.



## Active Instruction

(25 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

### Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rerate their knowledge of each vocabulary word as they arrive for class.

Partner Vocabulary Study	
<b>1.</b>	Rate your knowledge of each vocabulary word.
<b>2.</b>	Discuss with your partner a vocabulary word you know and one that needs further study.
<b>3.</b>	Take turns pronouncing the vocabulary words, telling their meanings, and using the words in new sentences.
<b>4.</b>	Listening partners give thumbs up if the word is used correctly or add ideas to help their partners.

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

2. Spot check the Read and Respond homework.

### Vocabulary

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a “+” and a word the entire team rated with a “?”.
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Use **Random Reporter** to have teams report on a new sentence using a vocabulary word. Award team celebration points.
3. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.

Teams discuss their vocabulary ratings.



Review Vocabulary Vault.



Teams review their cycle goal.

Post and present the reading objective.

Refer students to pages 16–18 in the text.

**Teacher:** Read aloud.

**Students:** Practice the skill or strategy.



**Students:** Practice the skill or strategy.

**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill/strategy.

### Set the Stage

1. Ask students to review their team’s goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading objective.

### Interactive Read Aloud

1. Tell students that you are going to read aloud. Challenge students to actively listen because you will ask them to restate the ideas in these beginning paragraphs to their partners. Point out that if they have trouble clearly restating the text in their own words, it means they have not fully understood it. They will need to refer to their Clarifying Strategy Card and use strategies to clear up the problem.
2. Read the title of the article and the introduction on page 16 aloud. Have partners restate the ideas in the paragraph in their own words. Use **Think-Pair-Share** to prompt the use of clarifying strategies.

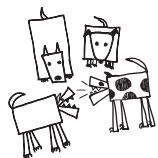
**Was your partner able to clearly restate the ideas in the paragraph? If not, which clarifying strategies did you use?**

*My partner had trouble explaining the point of listing the things done yesterday. We reread and understood that it was very simple. The point was to demonstrate how simple language is.*

3. Partner Practice: Have students read the beginning of “Lessons from History” on page 16, stopping at “Broca performed autopsies...” aloud to their partners. Listening partners restate the ideas in the paragraph. Use **Think-Pair-Share** to ask:

**To check your understanding, what is important about the year 1864?**


*The year 1864 is important because that is when a French surgeon made the announcement that we speak with the left side of our brain.*



## Teamwork

(20–30 minutes)

### Partner Prep

1. Refer students to the teamwork routine for partner reading in their team folders, and review the routine.
2. Have students read and restate:  **pages 16 (starting at “Broca performed autopsies...”)—18 aloud with partners.**

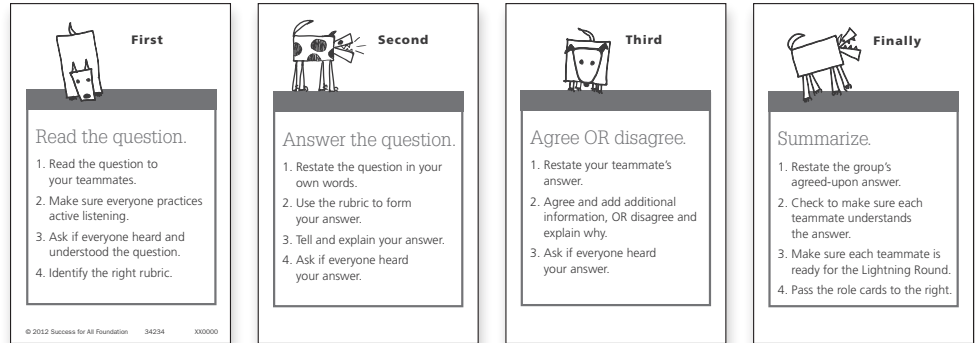
3. Circulate and check for comprehension, restating of main ideas, and evidence of strategy use, for example, the use of sticky notes. Give students feedback. Prompt and reinforce their discussions.

**Team Discussion**

Prepare students for team discussion.

1. Prepare students for team discussion. Refer them to the team discussion role cards in their team folders, and review them. Point out that teams will discuss their sticky-note problems and then go on to a discussion of the other Team Talk questions.

Teams distribute a role card to each team member.



2. Remind teams to use the rubrics to prepare for the Lightning Round.
3. Preview the Team Talk questions.

**Team Talk Questions**

1. What is a word, phrase, or passage that a team member marked with a sticky note? Explain which clarifying strategies you used to figure out the marked word or phrase. How did figuring out the word, phrase, or passage help you better understand the text? **[CV]** (strategy-use rubric)
 

*100 = We read that if the arcuate fasciculus is damaged, a person would speak gibberish, but we didn't know the word gibberish. We couldn't figure it out from clues in the text, so we looked it up in the dictionary. Gibberish is meaningless language. That helped us understand that if the arcuate fasciculus is damaged, a person can understand words but cannot speak them.*

*90 = We read that if the arcuate fasciculus is damaged, a person would speak gibberish, but we didn't know the word gibberish. We couldn't figure it out from clues in the text, so we looked it up in the dictionary. Gibberish is meaningless language.*

*80 = We read that if the arcuate fasciculus is damaged, a person would speak gibberish, but we didn't know the word gibberish.*

*continued*

Team Talk Questions *continued*2. Why is the arcuate fasciculus important? **[MI]** (Team Talk rubric)

100 = *The arcuate fasciculus is important because it allows Wernicke's and Broca's areas to communicate. According to Wernicke, this structure carries impulses between the two areas. As a result, normal speech can occur. However, if this structure is damaged, Wernicke believed that a person would not be able to speak properly. If the arcuate fasciculus does not work, it affects speech.*

90 = *The arcuate fasciculus is important because it allows Wernicke's and Broca's areas to communicate. Wernicke said that this structure carries impulses between the two areas. If it is damaged, a person would not be able to speak properly.*

80 = *The arcuate fasciculus is important because it allows Wernicke's and Broca's areas to communicate.*

3. Describe a problem with the old views of the brain and language. **[MI]**  
(Team Talk rubric)

100 = *A problem with the old views of the brain and language is that they are too simple. These views oversimplify the language process. For example, they do not consider the role of hearing, vocabulary, and pronunciation. Instead, they just focus on sounds and comprehension. Also, brain-imaging studies show that many areas in the brain contribute to language. Today people realize that language is a result of more than just Broca's and Wernicke's areas.*

90 = *A problem with the old views of the brain and language is that they are too simple. These views oversimplify the language process. They just focus on sounds and comprehension. Brain-imaging studies show that many areas in the brain deal with language.*

80 = *A problem with the old views of the brain and language is that they are too simple.*

*continued*

Team Talk Questions *continued*

4. What did researchers learn from the fMRI pictures they took of people’s brains as those people read sentences? **[MI]** (Team Talk rubric)

100 = *By studying the fMRI pictures they took of people’s brains as those people read sentences, researchers learned that the right hemisphere is involved in language. The pictures revealed that more areas of the brain went to work when a sentence was complicated. Not only was there increased activity in Wernicke’s and Broca’s areas, but activity also occurred in the right hemisphere. Therefore, when left-brain language tasks are challenging, the right hemisphere can help. The fMRI pictures challenged a popular belief about language.*

90 = *By studying the fMRI pictures they took of people’s brains as those people read sentences, researchers learned that the right hemisphere has a part in language. The pictures showed that more areas of the brain went to work when a sentence was complicated. Not only was there increased activity in Wernicke’s and Broca’s areas, but activity also happened in the right hemisphere.*

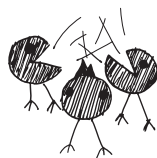
80 = *By studying the fMRI pictures, researchers learned that the right hemisphere has a part in language.*

5. What is a synonym for the word *constricting*? What is an antonym for the word *constricting*? (Reminder: An antonym is a word meaning the opposite.) **[CV]**

*(Accept reasonable responses.) The word constricting means becoming smaller, so a synonym is the word decreasing. An antonym for constricting is increasing.*

4. Circulate and give feedback to teams and students. Use rubrics to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.

5. Award team celebration points for good team discussions that demonstrate 100-point responses.



## Class Discussion tp

(20 minutes)

### Lightning Round

1. Remind students that Random Reporters will earn team celebration points for quality responses. Remind students that you will record points on the Team Celebration Points poster and that they can keep track of points that they earn on their team score sheets.

2. Use **Random Reporter** to have teams share their strategy-use responses (question #1). Display and use the strategy-use rubric to evaluate responses and give specific feedback. Award team celebration points for teams with 100-point responses. Record individual scores on the teacher cycle record form.

Team responses and feedback



- Use **Random Reporter** to have teams share their Team Talk responses (questions #2–4). Display and use the Team Talk rubric to evaluate responses and give specific feedback. Ask other teams to agree, disagree, or add on to responses. Award team celebration points for teams with 100-point responses. Record individual scores on the teacher cycle record form.

### **Celebrate**

Celebrate team successes!

- Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

The top team chooses a cheer.

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

Remind students of the Read and Respond homework assignment.

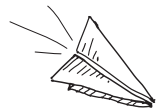
- As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

## Lesson 4

**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

### Teacher Background

Today students will read “Looking at Language in the Brain,” which explains the difference between MRI and PET scans and describes some experiments where they were used to study language.



## Active Instruction

(25 minutes)

**Students use the vocabulary study routine to rate their knowledge of each vocabulary word:**

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams discuss their vocabulary ratings.



Review Vocabulary Vault.

Teams review their cycle goal.

Post and present the reading objective.

### Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rerate their knowledge of each vocabulary word as they arrive for class.
2. Spot check the Read and Respond homework.

### Vocabulary

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a “+” and a word the entire team rated with a “?”.
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Use **Random Reporter** to have teams report on a new sentence using a vocabulary word. Award team celebration points.
3. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.

### Set the Stage

1. Ask students to review their team’s goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading objective.

Refer students to page 19 in the text.

**Teacher:** Previews/  
Thinks aloud.

**Students:** Practice the skill or strategy.

tps

**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill/strategy.

### Interactive Read Aloud

1. Tell students that you are going to read aloud. Challenge students to actively listen because you will ask them to restate the ideas in these initial paragraphs to their partners. Point out that if they have trouble clearly restating the text in their own words, it means that they have not fully understood it. They will need to refer to their Clarifying Strategy Card and use strategies to clear up the problem.
2. Read page 19 (paragraph 1, stopping at “When the atoms...”) aloud. Have partners restate the ideas in the paragraph in their own words. Use **Think-Pair-Share** to prompt the use of clarifying strategies.

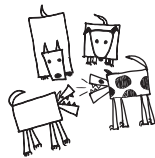
**Was your partner able to clearly restate the ideas in the paragraph? If not, which clarifying strategies did you use?**

*My partner had trouble explaining how scientists can study living brains. We reread and looked at the picture on page 19 so we better understood the MRI scanner. When we reread, we saw that the scanner is a magnet.*

3. Partner Practice: Have students read the rest of paragraph 1 on page 19. Listening partners restate the ideas in the paragraph. Use **Think-Pair-Share** to ask:

**To check your understanding, how does an MRI scanner affect the brain?**

*An MRI scanner affects the brain because when the hydrogen atoms return to their original state, they give off a radio signal. A computer is used so the signals are turned into images of structures in the brain. Then scientists are able to study the brain by looking at these images.*



## Teamwork tp

(20 minutes)

### Partner Prep

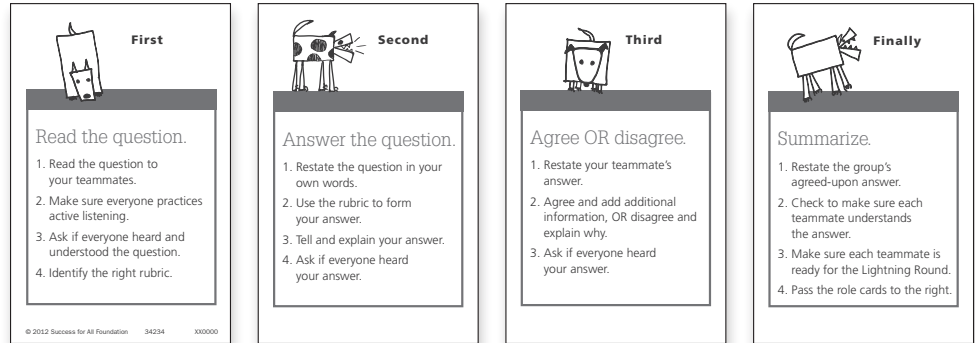
1. Prepare students for partner reading. Have students read and restate: **SR** **page 19 (starting at paragraph 2) aloud with partners.**
2. Circulate and check for comprehension, restating of main ideas, and evidence of strategy use, for example, the use of sticky notes. Give students feedback. Prompt and reinforce their discussions.

Prepare students for team discussion.

Teams distribute a role card to each team member.

### Team Discussion

1. Prepare students for team discussion. Refer them to the team discussion role cards in their team folders, and review them. Point out that teams will discuss their sticky-note problems and then go on to a discussion of the other Team Talk questions.



2. Remind teams to use the rubrics to prepare for the Lightning Round.
3. Preview the Team Talk questions.

**Team Talk Questions**

1. What is a word, phrase, or passage that a team member marked with a sticky note? Explain which clarifying strategies you used to figure out the marked word or phrase. How did figuring out the word, phrase, or passage help you better understand the text? **[CV]** (strategy-use rubric)
 

*100 = A team member marked the word interference because he could not pronounce it. The clarifying strategy was to break the word into chunks and blend it. That helped him pronounce it, and then he recognized the word and knew the meaning. Interference is the process of bothering. In an MEG, the brain's magnetic fields are recorded without interference from the skull or scalp tissue. So the skull and scalp tissue aren't involved in the recordings.*

*90 = A team member marked the word interference because he could not pronounce it. The clarifying strategy was to break the word into chunks and blend it. That helped him pronounce it, and then he recognized the word and knew the meaning. Interference is the process of bothering.*

*80 = A team member marked the word interference because he could not pronounce it.*

*continued*



Team Talk Questions *continued*

2. What is the purpose of fMRI, and how does fMRI work? **[MI]** (Team Talk rubric)

100 = *The purpose of fMRI is to show the brain in action. If one part of the brain produces the sound of a word, more blood flows to that area. As a result, impulses are sent to the vocal cords. Since there is increased oxygen, the radio signal changes. Therefore, fMRI shows which parts of the brain are involved in producing the sound. fMRI makes it easier to see how the brain works.*

90 = *The purpose of fMRI is to show the brain in action. If one part of the brain makes the sound of a word, more blood flows to that area. Impulses are sent to the vocal cords. There is increased oxygen.*

80 = *The purpose of fMRI is to show the brain in action.*

3. In paragraph 3, it says "A computer turns the data into a colored map of 'where the action is.'" What does the phrase "where the action is" mean? How did you clarify it? **[CV]** (Team Talk rubric)

100 = *The phrase "where the action is" refers to the different areas of the brain that are working. We know that the word action means something is happening. The PET scan shows where positrons collide with electrons in the body, which must happen when the brain thinks of words or ideas. So "where the action is" refers to where the brain is working to think of words. Being able to see a colored map of different areas of the brain at work helps scientists figure out how we process language.*

90 = *The phrase "where the action is" means the different areas of the brain that are working. We know that the word action means something is happening. The scan shows where activity is happening in the brain. So "where the action is" refers to where the brain is working to think of words.*

80 = *The phrase "where the action is" means the different areas of the brain that are working.*

4. Why is MEG important? **[MI]** (Team Talk rubric)

100 = *MEG is important because it provides more information about how the brain handles language. It records the magnetic fields that the living brain produces. This process is simple because the skull and scalp tissue do not interfere. Also, MEG can identify the location of the magnetic fields extremely quickly. Without MEG, people might know less about language.*

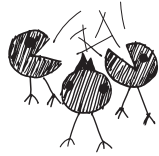
90 = *MEG is important because it gives more information about how the brain handles language. It records the magnetic fields from the living brain. This process is simple because the skull and scalp tissue do not get in the way.*

80 = *MEG is important because it gives more information about how the brain handles language.*

5. Choose a word from the vocabulary list, and write a meaningful sentence using the word correctly. **[CV]**

*Accept a sentence that shows that the student knows the meaning of the word and can use it correctly. For example: On his trip to Japan, Tristan wanted to traverse the entire country so he could learn as much as possible about its culture.*

4. Circulate and give feedback to teams and students. Use rubrics to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
5. Award team celebration points for good team discussions that demonstrate 100-point responses.



## Class Discussion tp

(20 minutes)

### Lightning Round

1. Remind students that Random Reporters will earn team celebration points for quality responses. Remind students that you will record points on the Team Celebration Points poster and that they can keep track of points that they earn on their team score sheets.
2. Use **Random Reporter** to have teams share their strategy-use responses (question #1). Display and use the strategy-use rubric to evaluate responses and give specific feedback. Award team celebration points for teams with 100-point responses. Record individual scores on the teacher cycle record form.
3. Use **Random Reporter** to have teams share their Team Talk responses (questions #2–4). Display and use the Team Talk rubric to evaluate responses and give specific feedback. Award team celebration points for teams with 100-point responses. Record individual scores on the teacher cycle record form.

### Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Team responses and feedback



Celebrate team successes!

The top team chooses a cheer.

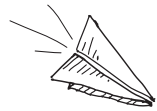
Remind students of the Read and Respond homework assignment.

# Lesson 5

**Writing Objective:** Write a quality answer that includes supporting facts or examples.

## Teacher Background

In this lesson, students will practice writing a paragraph in preparation for the cycle test. Emphasize for students the qualities of an informative paragraph, beginning with a clearly introduced topic followed by examples or facts that support the topic and ending with a closing statement that supports the information.



## Active Instruction

(10 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

## Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rerate their knowledge of each vocabulary word as they arrive for class.

Partner Vocabulary Study		
<b>1.</b>	Rate your knowledge of each vocabulary word.	<ul style="list-style-type: none"> <li>+ I know this word and can use it.</li> <li>✓ This word looks familiar; it has something to do with...</li> <li>? I don't know this word; it's totally new to me.</li> </ul>
<b>2.</b>	Discuss with your partner a vocabulary word you know and one that needs further study.	
<b>3.</b>	Take turns pronouncing the vocabulary words, telling their meanings, and using the words in new sentences.	
<b>4.</b>	Listening partners give thumbs up if the word is used correctly or add ideas to help their partners.	

2. Spot check the Read and Respond homework.

## Vocabulary

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a “+” and a word the entire team rated with a “?”
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Use **Random Reporter** to have teams report on a new sentence using a vocabulary word. Award team celebration points.
3. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.

Teams discuss their vocabulary ratings.



Review Vocabulary Vault.

Teams review their cycle goal.

Post and present the writing objective.

Introduce the writing project.

Read the prompt aloud.



Students identify the purpose for writing.

Refer students to the appropriate writer's guide in their student editions.

Highlight the writing objective.

**Set the Stage**

1. Ask students to review their team's goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and writing objective.
4. Remind students that this cycle they have been using the Team Talk rubric to help them prepare quality answers that include supporting examples or facts. Refer students to the writing objective. Tell them that today they will practice writing a quality answer to a question in preparation for the test in the next lesson.
5. Refer students to the following writing prompt in their student editions. Read the writing prompt aloud.

Writing Prompt
What makes language possible, and how can people learn about the brain's role in language? Explain and include facts or examples to support your answer.

Use **Think-Pair-Share** to ask:

**Read the prompt. What is it asking you to do: support a claim with reasons, explain ideas or information on a topic, or write a literary response? How do you know?**

*The prompt is asking me to explain information on a topic. I know because it has the word explain, and I have to share information about how language is possible and learning about the brain's role, which is the topic.*

6. Refer students to the following writer's guide in their student editions. Point out that the guide for writing to inform or explain is the criteria for writing. Point out that using the writer's guide will help them write a quality response.

Writing to Inform or Explain	
<b>Ideas</b>	<ul style="list-style-type: none"> <li>• Clearly introduce the topic.</li> <li>• Develop the topic with relevant details.</li> </ul>
<b>Organization</b>	<ul style="list-style-type: none"> <li>• Begin by introducing the topic.</li> <li>• In the middle, provide facts, examples, or events that help a reader understand the information.</li> <li>• End with a closing statement that supports the information.</li> </ul>
<b>Style</b>	<ul style="list-style-type: none"> <li>• Use words and phrases that help a reader understand how the facts or events are related.</li> <li>• Include details or examples that help a reader make a mind movie.</li> </ul>
<b>Mechanics</b>	<ul style="list-style-type: none"> <li>• Use correct punctuation, capitalization, spelling, and grammar.</li> </ul>

Briefly review the guide, noting the four aspects of writing: ideas, organization, style, and mechanics.

Use **Think-Pair-Share** to ask:

**Which guideline relates to our writing objective: to write a quality answer that includes supporting facts or examples?**

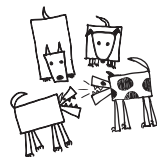
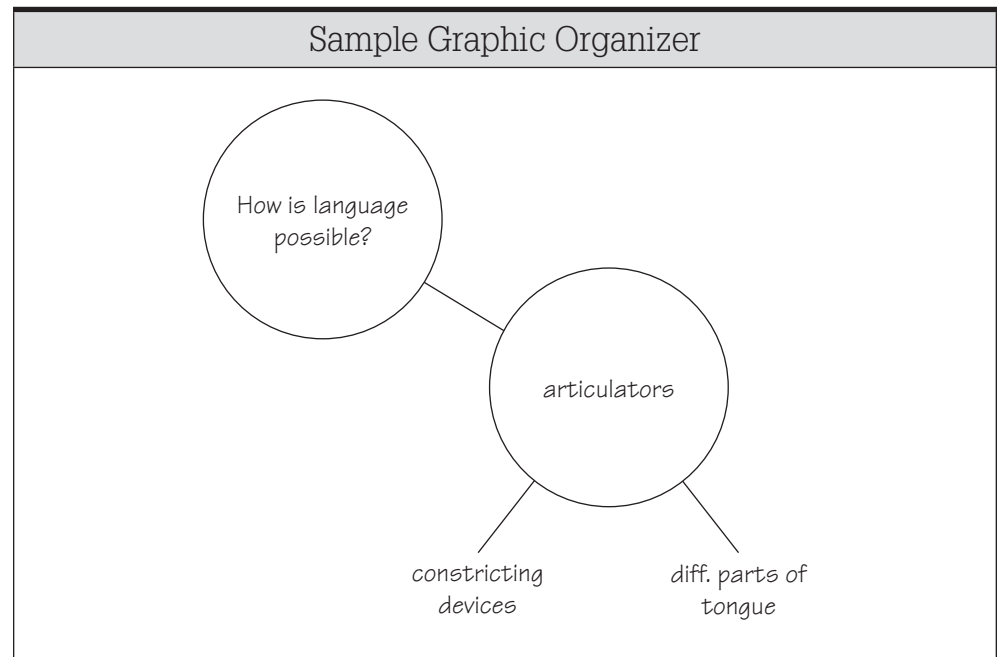
*The Organization guideline to provide facts, examples, or events that help a reader understand the information is related to the writing objective.*

- Tell students that this 10-minute writing project is practice to prepare them to write a quality answer for the writing section (part II) of the cycle test. Remind them that this section of the test is worth one third of their test score.

**Model a Skill**

Tell students that before writing, it can be useful to organize their ideas. Demonstrate the use of a graphic organizer for prewriting. A sample graphic organizer follows.

Model planning using a graphic organizer.



**Teamwork** tp

(20 minutes)

**Independent Work**

Tell students that they have 10 minutes to plan and write drafts of their responses to the writing prompt. Remind them to write on every other line to leave room for revisions. Suggest that they refer to the writing prompt to be sure that they include all the required elements and to the writer's guide to check the quality of their response.

Students write for 10 minutes.

Monitor discussions as partners and teams give feedback.

Students revise and edit their writing projects.

Display and evaluate randomly selected writing projects using the writer's guide.

**Team Discussion**

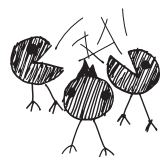
1. Refer students to the peer feedback checklist in their student editions, and review how to get/give feedback.

Peer Feedback	
<b>1.</b>	Read your writing project to your teammates. Remember to read with expression.
<b>2.</b>	Ask each of the questions below. Note your teammates' suggestions in the margin of your writing project. <ul style="list-style-type: none"> <li>- Is it easy to identify the topic?</li> <li>- Are there facts, examples, or events that help a reader understand the information?</li> <li>- Is there anything that does not fit?</li> <li>- Does the writing end with a closing statement that supports the information?</li> <li>- Is the writing organized so you can see how the pieces are connected? Did I explain my thinking?</li> </ul>
<b>3.</b>	Make a revision plan. On the back of your paper, list one or two of the most important changes that you could make based on your teammates' feedback.

2. Have students share their drafts in teams. Allow 5 minutes for students to revise their writing projects based on feedback and to edit them using the editing checklist.

Editing Checklist
✓ capitalization and punctuation
✓ words spelled correctly
✓ no sentence fragments or run-on sentences
✓ verb tense consistent
✓ Subjects and verbs agree.
✓ standard English

3. Have teams put their writing projects in a pile in the middle of their tables so a writing project can be randomly selected.



**Class Discussion** tp

(30 minutes)

**Lightning Round**

Randomly select a writing project from one or two teams' piles without revealing their authors. Display a writing project, and read it aloud.

Refer students to the writer's guide for writing to inform or explain and the writing objective—to write a quality answer that includes supporting facts or examples.

Using the writer's guide, discuss and evaluate the selected writing project(s) with the class.

For example, ask:

- **Does the writer introduce the topic clearly?**
- **Does the writer include supporting facts or examples to help a reader understand the information?**
- **Does the writer end with a closing statement that supports the information?**
- **Does the writer use appropriate academic language and full sentences?**

Award points to teams whose writing projects meet the criteria. Record these points on the team poster.

### **Reflection on Writing**

Have students reflect on their use of the writing process. Ask:

**How did creating and using a graphic organizer work for you? How did it help you write your draft?**

*Answers will vary.*

**What was the most useful feedback that you received? How did it affect your revisions?**

*Answers will vary.*

### **Celebrate**

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.

## Writing Prompt

What makes language possible, and how can people learn about the brain’s role in language? Explain and include facts or examples to support your answer.

<b>Writing to Inform or Explain</b>	
<b>Ideas</b>	<ul style="list-style-type: none"> <li>• Clearly introduce the topic.</li> <li>• Develop the topic with relevant details.</li> </ul>
<b>Organization</b>	<ul style="list-style-type: none"> <li>• Begin by introducing the topic.</li> <li>• In the middle, provide facts, examples, or events that help a reader understand the information.</li> <li>• End with a closing statement that supports the information.</li> </ul>
<b>Style</b>	<ul style="list-style-type: none"> <li>• Use words and phrases that help a reader understand how the facts or events are related.</li> <li>• Include details or examples that help a reader make a mind movie.</li> </ul>
<b>Mechanics</b>	<ul style="list-style-type: none"> <li>• Use correct punctuation, capitalization, spelling, and grammar.</li> </ul>

<b>Peer Feedback</b>	
<b>1.</b>	Read your writing project to your teammates. Remember to read with expression.
<b>2.</b>	<p>Ask each of the questions below. Note your teammates’ suggestions in the margin of your writing project.</p> <ul style="list-style-type: none"> <li>– Is it easy to identify the topic?</li> <li>– Are there facts, examples, or events that help a reader understand the information?</li> <li>– Is there anything that does not fit?</li> <li>– Does the writing end with a closing statement that supports the information?</li> <li>– Is the writing organized so you can see how the pieces are connected? Did I explain my thinking?</li> </ul>
<b>3.</b>	Make a revision plan. On the back of your paper, list one or two of the most important changes that you could make based on your teammates’ feedback.

<b>Editing Checklist</b>
✓ capitalization and punctuation
✓ words spelled correctly
✓ no sentence fragments or run-on sentences
✓ verb tense consistent
✓ Subjects and verbs agree.
✓ standard English



## Lesson 6

**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

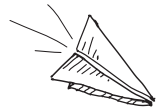
**Writing Objective:** Write a quality answer that includes supporting facts or examples.

### Teacher Background

During today's cycle test, students will use strategies to clarify what they read and will identify which strategies they used to clear up anything confusing. Students may use the Clarifying Strategy Card as they read and answer the test questions.

Be prepared to pass out a colored pen to each student. After taking the test, students will discuss their answers with their teams, receive feedback, and have the opportunity to improve their answers using the colored pens. When you are scoring the test, score students' original answers, and add extra points for improved answers.

For today's test, students will read "Think Syrinx," which describes birds' sounds. Students will learn how birds mimic sounds in their environment and how a bird's syrinx is similar to and different from a human voice box.



## Active Instruction tp

(5 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams review their cycle goal.

Post and present the reading and writing objectives.

Review Vocabulary Vault.

### Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rerate their knowledge of each vocabulary word as they arrive for class.
2. Spot check the Read and Respond homework.

### Set the Stage

1. Ask students to review their team's goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading and writing objectives.
4. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.



## Prepare Students for the Test tp

(5 minutes)

### Partner Review

1. Remind students that they have been practicing using clarifying strategies to figure out the meanings of words, phrases, and passages and writing a quality answer that includes supporting facts or examples. Tell students that they will use these skills as they take the cycle test.
2. Have partners review their notes for this cycle. Allow 2 or 3 minutes for this activity.

### Test Directions

1. Remind students that the test is independent work. Students should not ask their partners for help as they read, but they may use sticky notes if they would like.
2. Distribute the test so students can preview the questions. Point out that some of the test questions are multiple choice for which they will choose the best answer. Other questions require them to write a short answer or create a graphic organizer. Part II of the cycle test requires them to write a long answer. Remind them that their writing project was practice for writing the long answer for part II of the test.
3. Point out that questions #1 and #5 ask about clarifying strategies.
4. Ask students to identify key words and phrases in question #5.

5. “Lyrebirds imitate screeching chainsaws from encroaching loggers.”  
If your partner could not pronounce the word *encroaching*, which strategies should he or she try? Which strategies should your partner try to figure out the meaning of *encroaching*? **[CV]**

5. Introduce the text that students will read. Tell what it is about, but do not give additional information or details.

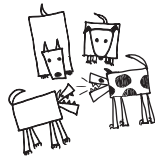
**Today you will read about the sounds that birds make.**



## Test tp

(30 minutes)

Tell students that they have 30 minutes for the test and that they may begin. Give students a 5-minute warning before the end of the test.



# Teamwork tp

(10 minutes)

Teams discuss the answers to the test questions.

## Team Discussion

1. Pass out a colored pen to each student.
2. Explain or review, if necessary, the student routine for team discussions after the test.

After the Test	
<b>Independent Strategy Use</b>	<ul style="list-style-type: none"> <li>• Describe your strategy use.</li> <li>• How did you resolve a sticky note?</li> </ul>
<b>Skill-Question Discussion</b>	<ul style="list-style-type: none"> <li>• Discuss the skill question in teams.</li> <li>• Say the question in your own words, and tell what key words or phrases you identified.</li> <li>• Read your answer to the team.</li> <li>• Think about what you like about your answer and what you could have said differently.</li> <li>• Use your colored pen to add comments to your answer.</li> </ul>

3. Have teams discuss their answers to the test questions. As you monitor team discussions, ask additional questions to prompt their thinking about the important ideas in the reading and about the skills and strategies that they have been using.



# Class Discussion tp

(10 minutes)

## Lightning Round

1. Use **Random Reporter** to have teams share team discussions of the test questions and explain their thinking.
2. Award team celebration points.
3. Collect test answers. Score original answers, and add extra points for improved answers.



Random Reporters share team discussion of a test question.

Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.

### **Celebrate**

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

## Cycle 2 Test

## Clarify Words and Ideas

**Directions:** Read “Think Syrinx,” pages 48 and 49. Answer the following questions on a separate piece of paper. Some of the questions are based on today’s reading, and other questions are about the text that you read in previous lessons. You may use the Clarifying Strategy Card.

**Part I. Comprehension** (100 points)

1. In the sentence, “...they are acoustically quite different from human speech,” the word *acoustically* most nearly means— **[CV]**

- A. relating to sound.
- B. relating to birds.
- C. relating to humans.
- D. relating to singing.

Explain how you clarified *acoustically*.

*20 points = To figure out the meaning of acoustically, I used clues in the text and my background knowledge. Birds make various sounds and can mimic human speech, but these sounds are very different from when humans make them. The word speech is a clue. The definition that makes the most sense is “relating to sound.”*

*15 points = To figure out the meaning of acoustically, I used clues in the text and my background knowledge. Birds make various sounds and can mimic human speech. The definition that makes the most sense is “relating to sound.”*

*10 points = To figure out the meaning of acoustically, I used clues in the text and my background knowledge.*

2. Why are the sounds heard in a bird’s environment important? **[MI]**

*20 points = The sounds heard in a bird’s environment are important because birds mimic these sounds. For example, lyrebirds imitate noisy chainsaws used by loggers. Sounds in a bird’s environment provide a model that the bird can follow.*

*15 points = The sounds heard in a bird’s environment are important because birds mimic these sounds. Lyrebirds make the sound of noisy chainsaws used by loggers.*

*10 points = Sounds heard in a bird’s environment are important because birds mimic these sounds.*

3. What role does song play in birds' lives? **[MI]**

20 points = *Song helps birds with various activities. For example, if visibility is difficult, birds can use song to help them locate other birds. Also, male birds defend their territory with song. Without song, certain activities might not be possible for birds.*

15 points = *Song helps birds do a lot of things. If it is hard to see, birds can use song to help them find other birds.*

10 points = *Song helps birds do a lot of things.*

4. Explain how a syrinx works. **[MI]**

20 points = *A syrinx produces sound by various parts working together. A bird's syrinx lies between two bronchial tubes at the bottom of the trachea. A bird uses air from each bronchial tube to vibrate membranes on either side of the syrinx. As a result, sound can be heard. This sound is even more complex than the human voice. The syrinx is crucial for birds to produce sound.*

15 points = *A syrinx makes sound by the different parts working together. A bird's syrinx lies between two bronchial tubes. A bird uses air from each bronchial tube to vibrate membranes on either side of the syrinx.*

10 points = *A syrinx makes sound by the different parts working together.*

5. "Lyrebirds imitate screeching chainsaws from encroaching loggers."

If your partner could not pronounce the word *encroaching*, which strategies should he or she try? Which strategies should your partner try to figure out the meaning of *encroaching*? **[CV]**

*Accept responses that identify a strategy. For example, I would advise my partner to break the word into chunks and then blend the chunks to pronounce the word. To figure out the meaning, I would advise my partner to look for clues in the sentence or look it up in the dictionary.*

**Part II. Writing** (100 points)

Write at least a paragraph to answer the following question:

Although some animals have been taught to communicate through sign language, how and why do animals communicate with one another?

*Animals communicate with one another often for a variety of purposes. For example, male birds use song to defend their territory and to attract a mate. Vervet monkeys use signals to share information. Vocal signals are extremely important for these monkeys because it is how they warn one another of predators. Different signals represent specific predators. A double cough indicates that an eagle is nearby. On the other hand, a bark indicates the presence of a leopard. Honeybees have certain dances that provide information about sources of food. Although some animals have been taught to use sign language to communicate with humans, animals have other types of communication that allow them to locate food, avoid predators, find mates, and defend their territory.*

The following guide is used to score part II of the cycle test.

Writing to Inform or Explain		
<b>Ideas</b>	<ul style="list-style-type: none"> <li>Clearly introduces the topic</li> <li>Develops the topic with relevant details</li> </ul>	<b>0–25 pts.</b>
<b>Organization</b>	<ul style="list-style-type: none"> <li>Begins by introducing the topic</li> <li>In the middle, provides facts, examples, or events that help a reader understand the information</li> <li>Ends with a closing statement that supports the information</li> </ul>	<b>0–25 pts.</b>
<b>Style</b>	<ul style="list-style-type: none"> <li>Uses words and phrases that help a reader understand how the facts or events are related</li> <li>Includes details or examples that help a reader make a mind movie</li> </ul>	<b>0–25 pts.</b>
<b>Mechanics</b>	<ul style="list-style-type: none"> <li>Uses correct punctuation, capitalization, spelling, and grammar</li> </ul>	<b>0–10 pts.</b>
<b>Writing Objective</b>	<ul style="list-style-type: none"> <li>Write a quality answer that includes supporting facts or examples.</li> </ul>	<b>0–15 pts.</b>

**Part III. Vocabulary** (100 points)

1. Use the word *recruit* in a meaningful sentence. **[CV]**

*Morgan wanted to expand her book club, so she encouraged current members to recruit their friends to join.*

2. The river's water level rose because of the levee \_\_\_\_\_ its path.

Which word from the vocabulary list belongs in the blank? **[CV]**

- A. deciphering
- B. expanses
- C. injected
- D. constricting

3. What is a synonym for the word *injected*? **[CV]**

- A. painted
- B. inserted
- C. designed
- D. removed

4. Use the word *mimic* in a meaningful sentence. **[CV]**

*Taylor's talking parrot could easily mimic anything that he heard people say.*

5. Which word from the vocabulary list belongs in the blank? **[CV]**

During the campaign, the candidates planned to \_\_\_\_\_ various states so they could meet with people and share their ideas.

- A. *traverse*
- B. recruit
- C. mimic
- D. collide

6. What is a synonym for the word *collide*? **[CV]**

- A. dance
- B. guard
- C. *bump*
- D. return

7. Which word from the vocabulary list belongs in the blank? **[CV]**

Since Carlos thought cities were loud and overcrowded, he decided to buy a house surrounded by vast \_\_\_\_\_ of farmland.

- A. mimic
- B. collide
- C. injected
- D. *expanses*

8. What is an antonym (opposite) for the word *deciphering*? **[CV]**

- A. *confusing*
- B. recalling
- C. analyzing
- D. removing

9. As used in the sentence "Individual bees impart information to their hives using a fancy figure-eight boogie called a waggle dance," the word *impart* most nearly means— **[CV]**

- A. withhold.
- B. recognize.
- C. deprive.
- D. *communicate.*



10. As used in the sentence “Song travels long distances and helps locate other birds when visibility is poor,” the word *visibility* most nearly means— **[CV]**
- A. weather.
  - B. sunlight.
  - C. *seeing*.
  - D. food.

Explain how you figured out the meaning of *visibility*.

*I saw the word visible in the word. I know that invisible means unseen, so I figured out that visibility must mean seeing. This means that birds use song when conditions make it hard to see.*

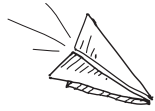
Question Codes			
<b>[DC]</b>	Make inferences; interpret data; draw conclusions.	<b>[AA]</b>	Analyze an argument.
<b>[SA]</b>	Support an answer; cite supporting evidence.	<b>[AP]</b>	Identify author’s intent or purpose.
<b>[MI]</b>	Identify the main idea that is stated or implied.	<b>[RE]</b>	Analyze relationships (ideas, story elements, text structures).
<b>[CV]</b>	Clarify vocabulary.	<b>[AC]</b>	Author’s craft; literary devices

## Lesson 7

**Reading Objective:** Use clarifying strategies to figure out the meanings of words, phrases, and passages.

### Teacher Background

During Class Discussion, students orally present evaluations of their homework reading selections. During Teamwork, students use their Read and Respond notes and answers to the homework questions to make final preparations for these presentations. Team members share their responses and give one another feedback. During the oral presentations, students use their revised responses to the questions to describe the kind of texts they read, the strategies that helped them understand the text, and whether they will recommend their reading selections to others.



## Active Instruction

(20 minutes)

### Two-Minute Edit

1. Display a sentence that could be improved, for example, a sentence that is incomplete, awkwardly worded, uninteresting, lacks punctuation, or in which the subject and verb do not agree. As students arrive, have teams discuss how they would improve the sentence. A Two-Minute Edit sample sentence follows.

**There are three mistakes in this sentence. Can you find them and fix them?**

Learning a new language are hard for sum people.

*Learning a new language is hard for some people.*

2. Use **Random Reporter** to debrief, and award team celebration points to teams that find the mistakes and explain the edits that they made.

### Vocabulary

Ask teams if they have a Vocabulary Vault word that they would like to share. Award team celebration points.

### Set the Stage

1. Ask students to review their team's goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.



Vocabulary Vault

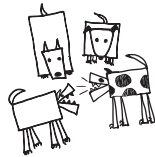
Teams review their cycle goal.

Connect the cycle objective to students' homework reading selections.

3. Have students get out their reading selections and Read and Respond forms. Remind them that today, with the help of their teams, they will each prepare a presentation about their individual reading selections.

Challenge students to think about the strategies and skills that they used to read their self-selected texts, share their answers to the Read and Respond questions, discuss their thinking, and prepare evaluations of their selections.

4. Remind students to add to the notes on their Read and Respond forms as they discuss their selections and prepare oral presentations about their selections. Students will use their answers to the questions on the Read and Respond form as the basis for their presentations.



## Teamwork tp

(25 minutes)

### Team Discussion

1. Tell students that they will use the Read and Respond questions as a guide as they discuss their homework reading and prepare evaluations of their reading selections to share with their teams.
2. As students prepare their answers, check in with those students for whom you do not have individual scores for graphic organizer/notes or written Team Talk responses. Have them show you examples from the cycle. Point out areas of success, and give feedback to improve student performance.
3. As you visit teams, take this opportunity to check students' homework for completion (Read and Respond forms). Enter the information on your teacher cycle record form.

### Teacher's Note:

Have students who are ready for a new selection take turns choosing reading material from the classroom library. Make sure that every student has a Read and Respond form for next cycle.

Students prepare, share, and revise presentations about their reading selections.

Give students feedback on classwork.

### Read and Respond Questions

<b>1.</b>	Is your selection informational or literature? Summarize your reading. (summary rubric)
<b>2.</b>	Why did you choose this reading? What is your purpose for reading? (Team Talk rubric)
<b>3.</b>	Choose a word, phrase, or passage that you did not understand at first. How did you figure it out? (strategy-use rubric)
<b>4.</b>	Write down a question that you had or a prediction that you made as you read. Were you able to answer or confirm it? Explain. (strategy-use rubric)
<b>5.</b>	Would you recommend this selection to others to read? State your opinion, and support it with reasons. (Team Talk rubric)
<b>6.</b>	Choose a short section of the text that you think is important or especially interesting. Tell your teammates why you chose it. Read it aloud smoothly and with expression. (fluency rubric)



## Class Discussion tp

(15 minutes)

### Lightning Round

Use **Random Reporter** to have students present their evaluations of their homework reading selections (responses to the Read and Respond questions). Use rubrics to evaluate responses, give specific feedback, and award points.

### Celebrate

1. Tally up this cycle's points on the poster.
2. Tell students that their scored tests will be returned at the beginning of the next lesson. Poster points and the teams' test scores will determine which teams earn the status of super team, great team, or good team for the cycle.
3. Be sure to record each team's total celebration points from the poster into the teacher cycle record form. Remind students that team celebration points and team test averages are used to determine team scores.
4. Collect students' Read and Respond forms, and pass out new forms.
5. Tally up the number of Read and Respond signatures on students' forms, and record the number on the teacher cycle record form after class.



Team responses and feedback

Teams report on their review of the texts and Read and Respond discussions.

Celebrate team successes!  
Final tally for this cycle

Record team celebration points on the teacher cycle record form.

Collect Read and Respond forms for this cycle.

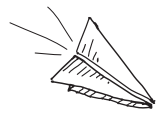
# Lesson 8

**Objectives:** Celebrate successes, and set new goals. Hold a Class Council meeting.

## Teacher Background

In the first part of this lesson, students review their test results and their final scores for the cycle and compare them with their goals. They celebrate success and set new objectives for further improvement.

In the second part of the lesson, students participate in Class Council.



## Active Instruction

(2 minutes)

### Two-Minute Edit

1. Display and have students complete the Two-Minute Edit as they arrive for class. A Two-Minute Edit sample sentence follows.

**What would you do to make this sentence better?**

even though it were july, Mackayla was already planned her birthday party in December.

*Even though it was July, Mackayla was already planning her birthday party in December.*

2. Use **Random Reporter** to check corrections. Award team celebration points.



## Celebrate/Set Goals

(20 minutes)

1. Distribute students' scored cycle tests. Allow a few moments for students to review them.
2. Distribute team score sheets to teams and celebration certificates to students. Remind students that the cycle's top-scoring teams are determined by their points on the poster and their test scores.
3. Recognize and celebrate the super, great, and good teams. Remind the teams of the impact of bonus points that are added to team members' cycle scores.
4. Have each team discuss and set a goal for the next cycle and record it on their team score sheet. Use the questions below to analyze and discuss students' scores.

**What was your team's highest score?**

Two-Minute Edit

(Optional) Use a sentence with the errors that your students often make.



Distribute scored cycle tests.

Distribute team score sheets and celebration certificates.

Class celebration! Celebrate team successes with a class cheer.

Each team sets a team goal for the next cycle.



**What score do you want to improve?**

**What can the team do to improve that score?**

Use **Random Reporter** to ask:

**What is your team's goal for the next cycle? Why did you choose that goal?**

*Accept supported answers.*

5. Use the poster to award team celebration points for responses that include the team's reasons for choosing the goal, thus beginning the accumulation of points for the next cycle.
6. Have students record their cycle test scores and their areas of greatest strength and improvement on their progress charts.



## Class Council

(30 minutes)



1. Share class compliments.
2. Review the class goal that was set at the last Class Council. Using the agreed-upon measure of progress, was the goal met? Why or why not?
3. Discuss a class concern, or use the scenario and discussion hints provided.
4. Have teams discuss and then use **Random Reporter** to share responses.
5. After debriefing how they resolved the problem, help students set a goal and a measure of progress that they can use at the next Class Council.

**Scenario:** Some kids in Jana's reading class have been teasing her because she always gets good grades. Jana has been thinking about messing up on the next reading test.

**Pretend that you are Jana. What would you do? Pretend that you are one of Jana's teammates. What would you do?**

Some kids have been teasing Carson because he is having trouble keeping up in reading class. He's been thinking about going to the nurse during the next reading class—after all, reading does make him feel queasy.

**Pretend that you are Carson. What would you do? Pretend that you are one of Carson's teammates. What would you do?**

**Discussion Hints:**

Putting yourself in another's shoes is one way to better understand how to be a good friend. Help students develop empathy for others with role-playing and taking on someone else's point of view.

(Optional) To save time, assign half of the teams to discuss Jana's problem and half to Carson's problem.

Model how to show respect for one another while giving feedback, asking for help, and recognizing successes. Make your classroom a sarcasm-free zone.

**Support teamwork:** Use team-building activities, review team goals regularly, and celebrate as a class when goals are met. Present the beginning of each cycle as a fresh starting point and another opportunity to set goals and move ahead with one another's help.

Be an active listener. Model how to ask open-ended questions. Paraphrase what the other person tells you, and check your understanding. Provide examples of situations in which you can see each situation from someone else's point of view.

The middle grades are a time for learning how to be a good friend and how to choose new friends. Change teams once or twice each grading period to give students a chance to get to know a broader circle of people. Make class celebrations meaningful and participatory for students. Emphasize how great it feels to set and meet goals when everyone participates.



## Brain Game

(5 minutes)

1. Choose a brain game from the card set, and then play the game.
2. Use the following questions to debrief and remind students of self-regulatory strategies:

**What did this game require your brain to do?**

**How will use of this skill improve your success in other classes?**

## Common Core State Standards

The following Common Core State Standards are addressed in this unit.

Full program alignments can be found on the Reading Edge online resources.

Contact your SFA coach for more information.

### Level 8 Clarify Words and Ideas

#### **English Language Arts Standards: Science and Technical Subjects**

##### **Craft and Structure**

RST.6-8.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.

RST.6-8.5. Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.

##### **Integration of Knowledge and Ideas**

RST.6-8.7. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

#### **English Language Arts Standards: Reading: Informational Text**

##### **Key Ideas and Details**

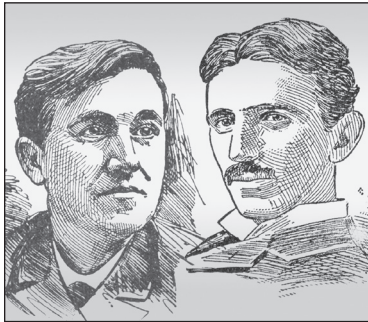
RI.8.1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.

#### **English Language Arts Standards: Writing**

##### **Text Types and Purposes**

W.8.2. Use precise language and domain-specific vocabulary to inform about or explain the topic.





**Informational**

Unit 2

# Make Connections

**Rage or Reason? When  
Scientists Feud**  
*Odyssey* magazine

**Research**



**Unit 2**

Make  
Connections

**Rage or Reason?  
When Scientists  
Feud**  
*Odyssey* magazine

The Lightning Round

- Random Reporters share team responses; team reps from other teams may agree, disagree, or add on to these responses.
- Use the following rubrics to evaluate responses and give specific feedback.
- Award points to the teams with 100-pt. responses; add the points to the Team Celebration Points poster.
- Celebrate team successes.

<b>Strategy Use</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and explains how using the strategy helped in better understanding the text.</b>
<b>90</b>	gives an 80-pt. response <b>and describes a problem and a strategy that was used to solve the problem.</b>
<b>80</b>	<b>identifies a problem that a team member had understanding the text.</b>

<b>Word Power</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and expands on the meaning, for example, identifies</b> <ul style="list-style-type: none"> <li>• related words</li> <li>• a second meaning</li> <li>• a word connotation</li> <li>• an antonym</li> </ul>
<b>90</b>	gives an 80-pt. response <b>and explains the meaning in a definition and a meaningful sentence.</b>
<b>80</b>	<b>tells a word or phrase added to the word power journal and why it was added (what makes it important or interesting).</b>

<b>Summary</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and uses key vocabulary correctly.</b>
<b>90</b>	gives an 80-pt. response <b>and clearly connects relevant ideas in a logical order.</b>
<b>80</b>	<b>presents main ideas and important details in his or her own words and without personal opinion.</b>

<b>Team Talk (oral and written)</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and connects the answer to the supporting evidence and uses academic language.</b>
<b>90</b>	gives an 80-pt. response <b>and includes supporting evidence and examples (from the text or from experience).</b>
<b>80</b>	<b>uses full sentences to clearly and correctly answer the question.</b>

<b>Fluency</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and reads smoothly and with expression (shows emotion and changes with punctuation and dialogue).</b>
<b>90</b>	gives an 80-pt. response <b>and reads at just the right pace to understand the text—not too slow and not too fast.</b>
<b>80</b>	<b>reads a short passage and pronounces most of the words correctly.</b>

<b>Graphic Organizer/Notes</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and explains how the graphic organizer helped in understanding the text.</b>
<b>90</b>	gives an 80-pt. response <b>and includes main points or events and important details.</b>
<b>80</b>	<b>selects a graphic organizer that is appropriate for the text.</b>



## Unit Objectives

**Reading:** Use strategies to help identify important information and the relationship of ideas.

**Writing:** Establish and maintain a formal style.

## Unit Overview


This unit focuses on the TIGRRS process, a process that will help students prepare to read and understand informational text. The acronym stands for Topic, Intent, Graphic Organizer, Read and Restate, Reread and Review, and Summarize. Students will practice previewing text to predict the topic and the intent of the author. They will use text features, such as titles, headings, subheads, graphics, and words in bold type, to determine how the text is organized. As a prereading strategy, students ask themselves:

- How is this text set up?
- What key words or text features tell me how the author organized the ideas?
- How can I best map this information? Which type of graphic organizer will work best with this structure?

Graphic organizers include not only the important facts from the text, but also show how these facts are related. Students will use different types of graphic organizers, such as a concept map, a chart, and a Venn diagram, and evaluate which works best. Guide students to understand that making a graphic organizer to record main ideas can help them recall the important information and also show the relationship among ideas.

Following is an explanation of the TIGRRS process that is included in the team folders.

*Follow the TIGRRS path to read and understand informational text better.*



---

**T**opic      Look for clues to predict the topic:

- title, headings, and subheadings;
- pictures, diagrams, and captions; and
- words in bold.

Think about what you already know about this topic.

---

**I**ntent      Why did the author write the text? Look for clues to predict the author's intent:

- title and subtitle; and
- introduction, preface, and book-jacket notes.

---

**G**raphic Organizer      Choose a format for your notes.  
Create a graphic organizer to make notes on the main ideas and supporting information in the text and to show how they are related.

---

**R**ead and Restate      Use strategies as you read with your partner.  
Restate the main ideas in your own words.  
Record main ideas on your graphic organizer.

---

**R**eread and Review      Choose an important section of the text to reread.  
Reread with your partner to:

- clarify anything that was confusing,
- find evidence to support the main ideas, and
- add supporting information to your notes.

Review your notes to:

- make connections between ideas and
- ask new questions.

---

**S**ummarize      Review your graphic organizer, and summarize what you have learned from the text.

In this unit, students will use strategies and make connections that help them identify important information in the texts. Students will read multiple texts on different topics. Recognizing the relationship among ideas—how important information is related across texts—will help students make connections and deepen their understanding of the big ideas presented. For writing, students will work to establish and maintain a formal style. Their answers to the writing prompt should reflect the academic language that they are expected to use when answering questions.

### Unit Topic/Content

Students will read *Odyssey* magazine: Rage or Reason? When Scientists Feud. They will read several articles that discuss the ideas, reasons, and outcomes (or ongoing nature) of scientific feuds, from the late Renaissance and Galileo to the 2011 discovery of life that could possibly live on other planets.

## Internet/Media Options

To expand your students' background knowledge, consider using Internet/media options with lessons. Always preview sites for availability and suitability. Please make sure you have the correct plug-ins.

## At a Glance

### Rage or Reason? When Scientists Feud *Odyssey* magazine

Cycle 1		
Lesson	Text	Media
Lesson 1	"Lab Wars," pages 6–9	
Lesson 2	"Battle of the Currents: AC or DC?," pages 28–31	(Optional) Background video: "Electricity" <a href="http://www.pbslearningmedia.org/content/idptv11.sci.phys.energy.d4kele">www.pbslearningmedia.org/content/idptv11.sci.phys.energy.d4kele</a> (Optional) Background video: "Edison's Inventions" <a href="http://www.nps.gov/edis/forkids/index.htm">www.nps.gov/edis/forkids/index.htm</a> (Optional) Background video: "AC and DC" <a href="http://www.pbs.org/tesla/ins/ins_acdc.html">www.pbs.org/tesla/ins/ins_acdc.html</a>
Lesson 3	"A Quarrel: Who Invented Calculus?," pages 17–19	(Embedded) Process video: "Partner Fluency Practice" (Optional) Background video: "Forces and Motion" <a href="http://www.pbslearningmedia.org/content/idptv11.sci.phys.maf.d4kfom">www.pbslearningmedia.org/content/idptv11.sci.phys.maf.d4kfom</a>
Lesson 4	"Germ Warfare: Showdown in a Paris Theater," pages 20–23	
Lesson 5	writing in response to reading	
Lesson 6	"Fighting Words," pages 32 and 33	
Lesson 7	self-selected reading	
Lesson 8	Getting Along Together	

**Rage or Reason?  
When Scientists  
Feud**  
*Odyssey* magazine

Cycle 2		
Lesson	Text	Media
Lesson 1	"In the Garden: A Famous Futile Feud," pages 14–16	(Optional) Background video: "Galileo's Sun-Centered System" <a href="http://www.pbslearningmedia.org/content/ess05.sci.ess.eiu.galileosys">www.pbslearningmedia.org/content/ess05.sci.ess.eiu.galileosys</a> (Cut off at 4:25.)
Lesson 2	"Rosalind Franklin: The Woman Who Should Have Won the Nobel Prize," pages 34–36	(Optional) Background website: "Anatomy of Photo 51" <a href="http://www.pbs.org/wgbh/nova/tech/DNA-photograph.html">www.pbs.org/wgbh/nova/tech/DNA-photograph.html</a>
Lesson 3	"Cosmic Warriors," pages 40–43	(Embedded) Process video: "Word Power Journal" (Optional) Background video: "Hubble's Expanding Universe" <a href="http://www.pbslearningmedia.org/content/phy03.sci.phys.fund.hubble2">www.pbslearningmedia.org/content/phy03.sci.phys.fund.hubble2</a> (Cut off at 3:00.)
Lesson 4	"The Alien Discovery That Wasn't," pages 10–13 (excluding green text box, p. 12)	
Lesson 5	writing in response to reading	
Lesson 6	"Einstein vs. Millikan: Right and Wrong Win the Prize," pages 38 and 39	
Lesson 7	self-selected reading	
Lesson 8	Getting Along Together	

## Cycle 1:

Make  
Connections

## Lesson 1

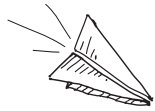
**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

**Teacher Background**

As long as there have been scientific ideas, there have been feuds and differing opinions about them. This helps science move forward and allows ideas to be proven and improved upon. However, sometimes those feuds get ugly and can cost scientists their jobs or reputations. Sometimes the feuds are resolved after several years of research and experimentation, while others are still being debated after more than 100 years.

The Big Question for this unit asks students to determine when a disagreement becomes a feud and how these actions may be similar or different. Most students will probably have experience with disagreements, especially between friends.

In Active Instruction, you will begin to introduce the TIGRRS process for reading informational texts. In upcoming lessons, there will be numerous opportunities for reviewing TIGRRS, so don't expect students to master the process in the first lesson.

**Active Instruction** tp

(22 minutes)

**Big Question**

Post and present this cycle's Big Question. Have students write a response to the question as they arrive for class.

**The Big Question:** When does a disagreement between friends, acquaintances, or coworkers become a feud?

**Set the Stage**

1. Refer students to today's Big Question. Use **Think-Pair-Share** to ask:

**When does a disagreement between friends, acquaintances, or coworkers become a feud?**

*A disagreement is a short-term problem in which the two parties disagree but eventually either reach an agreement or stop arguing. A feud seems like a longer-lasting disagreement. I think a feud sometimes outlasts the people who initially started the disagreement and involves more people. The disagreement also evolves beyond the initial argument to include more problems. The people involved may even forget what the original disagreement was about.*

Students write responses to the Big Question.

Discuss the Big Question.



Teams review their cycle goal.

Post and present the reading objective.

Refer students to the cover of the text.

2. Ask students to review their cycle goal. Remind students how to earn team celebration points. Remind them that team celebration points help them to become super teams. Tell them they earn team celebration points during the Lightning Round.
3. Introduce the texts, authors, and reading objective.
4. Distribute copies of *Odyssey* magazine: Rage or Reason? When Scientists Feud. Have students preview the text. Use **Think-Pair-Share** to ask:

**Is this literature or informational text? How do you know?**

*This text is informational. The table of contents, article titles and headings, and captions are evidence that the text is informational.*

5. Have partners survey the magazine to determine the topic and the author's intent. Use **Think-Pair-Share** to ask:

**What is the topic of this text? How do you know?**

*The topic of the text is feuds, or arguments, in science. The title of the text, Rage or Reason? When Scientists Feud is a clue. The titles of the articles, such as "Lab Wars," "In the Garden: a Famous Futile Feud," and "Einstein vs. Millikan: Right and Wrong Win the Prize," are clues that this is about feuds in science.*

**A magazine has multiple authors. Do you think the authors who wrote for this magazine have a single intent? What is it? Explain your thinking.**

*I think the authors in this magazine have the same intent: to inform me about scientific feuds. I will probably learn who was involved in the feuds and whether the feuds were ever resolved. It seems like each article in the magazine discusses a different argument between two scientists or people.*

Point out that by previewing the text and using clues such as headings, subheadings, pictures, and captions, students have established a purpose for reading: to learn about feuds in science.

6. Introduce the TIGRRS process for reading informational text. Refer students to the explanation of the TIGRRS steps in their student editions. Tell students that using the TIGRRS process can help them better understand informational text. Review the first two steps of the TIGRRS process: topic and intent of author.

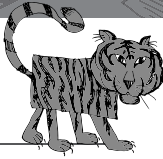
Introduce the TIGRRS process.



Refer students to pages 6–9 in the text.

Students use text features to help predict topic and intent of the author.

TIGRRS Process for Reading Informational Text:



**Follow the TIGRRS path to read and understand informational text better.**

---

**T**opic      Look for clues to predict the topic:

- title, headings, and subheadings;
- pictures, diagrams, and captions; and
- words in bold.

Think about what you already know about this topic.

---

**I**ntent      Why did the author write the text? Look for clues to predict the author's intent:

- title and subtitle; and
- introduction, preface, and book-jacket notes.

---

**G**raphic Organizer      Choose a format for your notes.  
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Reread with your partner to:

- clarify anything that was confusing,
- find evidence to support the main ideas, and
- add supporting information to your notes.

Review your notes to:

- make connections between ideas and
- ask new questions.

---

**S**ummarize      Review your graphic organizer, and summarize what you have learned from the text.

7. Have students open their texts to “Lab Wars,” pages 6–9. Have partners survey the article to determine the topic of the article and author’s intent. Allow one minute for this activity. Use **Think-Pair-Share** to ask:

**What is the topic of this article? How do you know?**

*The topic of this article is wars, or feuds, in science. I know because the title of the article is “Lab Wars.” The word lab is short for laboratory, which is where scientists often work and research their ideas. The text must discuss arguments that happen in labs or when scientists do their research.*

**What is the intent of the author? Explain your thinking.**

*I think the author wants me to learn how feuds happen in the world of science. I see headings that say, “Getting a Good Feud Going” and “The Evolving Nature of Feuds.” I think I will learn why scientists have disagreements and how their disagreements have changed over time.*

8. Have students turn to page 9. Read the caption under the photographs on page 9 aloud. Use **Think-Pair-Share** to ask:

**What do you think Robert J. Oppenheimer’s opinion was on developing nuclear weapons? Explain your thinking.**

*The caption says that Oppenheimer lost his security clearance and job when he refused to create stronger weapons. The caption also tells me that he is the father of the atomic bomb. So he must have disagreed with making weapons more powerful than the one he had already made. He felt it was powerful enough.*

Read page 9 aloud. Students use text features to identify important information.

Model choosing a graphic organizer, and explain your thinking.

Point out that students previewed features of the text, photographs, and a caption to figure out the answer to a question.

9. Remind students that as they read, they will make notes about the important ideas. Point out that the next step in the TIGRRS process is to choose a graphic organizer for making notes. Choices include, but are not limited to:
  - Venn diagram
  - timeline/sequence chain
  - T-chart
  - web
  - outline

**As I'm looking through the text, I don't see any signal words to suggest that I will be comparing and contrasting or looking for causes and effects. I see a section with the heading "Getting a Good Feud Going," followed by paragraphs of information. There is another heading too, "The Evolving Nature of Feuds." As I skim each paragraph in these sections, it looks like the author provides a lot of facts and details about these things. I think a web might be the best organizer to use; it will help me organize the main ideas in these paragraphs and the details about them.** (Display or draw a web.)

Point out that the first three steps in the TIGRRS process—predicting topic, predicting author's intent, and choosing a graphic organizer—help prepare them to read the text more effectively.

**T:** Feuds in science

**I:** To explain disagreements between scientists

**G:** A web for main ideas and details

### **Interactive Read Aloud**

1. This cycle our reading objective is: to use strategies to help identify important information and the relationship of ideas.

**In a magazine, such as the one you are reading, each article has its own main idea that may be stated directly in the text or may need further reading to develop. The most important information in each article has a connection to the overarching central idea of the whole magazine. Those are the connections that you will make in this unit. As you read the articles, keep the central idea of the whole magazine issue in mind to draw connections between the people, events, or ideas presented in the articles.**

2. Tell students that you will take the next step in the TIGRRS process: read and restate. You will read a section of text aloud and restate the important ideas. Read "Lab Wars," page 6 (paragraphs 1–3) aloud. A sample Think Aloud follows.

**Teacher:** Read aloud and think aloud to model the target skill or strategy use within the TIGRRS process.

**Students:** Actively listen.

## Sample Think Aloud

Remember that we said the topic of Rage or Reason? When Scientists Feud is scientific feuds, so the main idea in the articles we read should relate to that topic. When I read these first few paragraphs in "Lab Wars," I'm introduced to the idea of feuds between scientists. The author states that it seems unlikely that scientists would feud because their work often depends on the work of other scientists. However, it seems like that is the reason scientists often feud. The author states that scientists usually spend years, maybe their whole lives, researching and coming up with results for their research. They are very protective of their work. Therefore, I think they are unappreciative when it's criticized by others, found wrong, or even used as a springboard for other research. I can make a connection that this pride in their research and ideas might be behind many of the feuds that I'll read about in this magazine.

**Teacher:** Restate important ideas in the text, and add notes to the graphic organizer.



3. Use **Think-Pair-Share** to ask:

**How did I make connections between the text in this article and the magazine as a whole?**

*From the reading, you identified that pride in their work causes many scientists to feud when they disagree with others. Then you applied this idea to the whole text. The text is about feuds in science. You made the connection that the author is giving you this information because it will be important to many of the articles in the magazine.*

4. Partner Practice: Student partner pairs use the read-aloud/think-aloud process to practice the skill or strategy with the next passage in the text.

Have students read page 6 (paragraph 4) aloud. Use **Think-Pair-Share** to ask:

**Based on what the author says, how do you think people normally see scientists? What is the truth about them?**

*I think people normally see scientists as being better than most people. Scientists are smart and they research complicated things. We expect them to be rational people who make good decisions. But in truth, they are just normal people. They sometimes get jealous and greedy. They have opinions about many different topics even if they don't know much about the topic.*

**Why do you think the author gives us this information about scientists in relation to the whole magazine?**

*I think the author is giving us background on the reasons and arguments behind some of the feuds that we'll read about. Some of the feuds might go beyond the science that these scientists usually study.*

Use **Random Reporter** to debrief.

**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill/strategy.



**Partner pairs:** Review, reread to clarify, and add to the graphic organizer.

5. Refer to the reread and review step of the TIGRRS process. Review the points in this step.

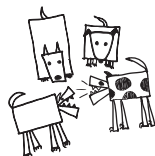
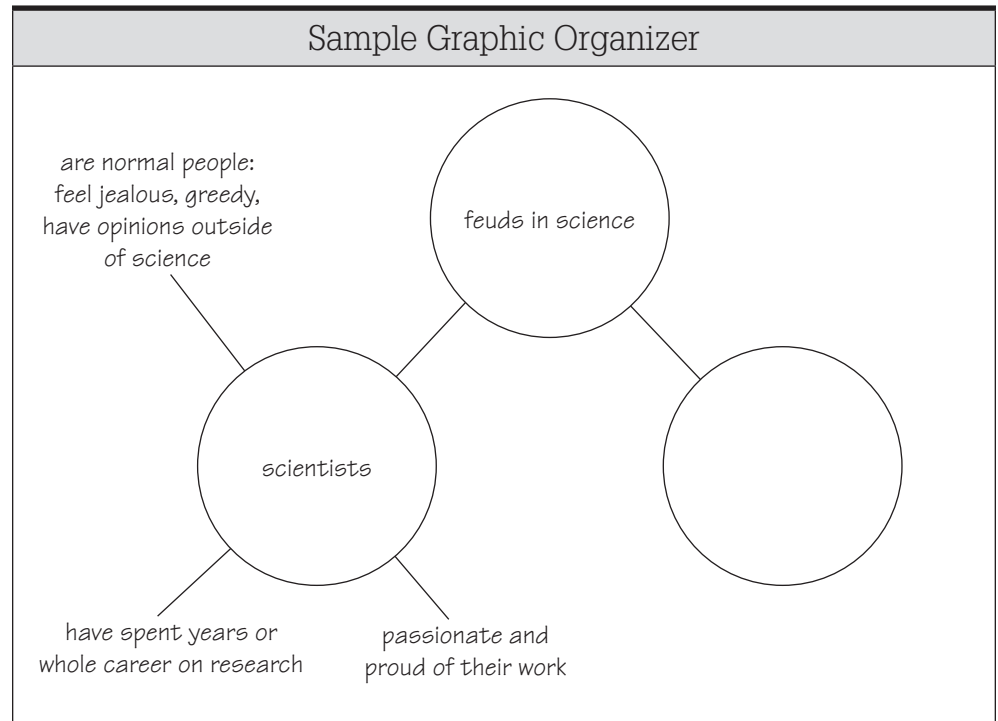
**Rereading is an important step because it can help us clarify anything confusing in the text. By rereading, we can also identify the details that support a main idea and add them to the graphic organizer. Reviewing the notes on the graphic organizer will help us make connections and ask new questions.**

6. Ask partners to review this section of text, check their understanding with each other, reread what they need to clarify, and add notes to their graphic organizers.

Use **Random Reporter** to debrief. Add student responses to the graphic organizer.

A sample graphic organizer follows.

Point out that students may structure their webs in a shape or form that makes sense to them, or they may use any graphic organizer that helps them organize the main ideas and supporting details.



## Teamwork tp

(20 minutes)

### Partner Prep

1. Explain, or review if necessary, the student routines for partner reading and the TIGRRS process before having students read and restate: sr

**pages 6–9 aloud with partners.**

Cue students to use their student routines for partner reading and the TIGRRS process.

2. Circulate and check for comprehension, evidence of strategy use, and use of the TIGRRS process, for example, restating ideas on the graphic organizer. Give students feedback. Prompt and reinforce their discussions.
3. If some partners finish ahead of their teammates, have them begin looking over the Team Talk questions.

### Team Discussion

1. Explain, or review if necessary, how to use role cards and the student routines for strategy use and Team Talk discussion. **SF**
2. Remind students to use the rubrics on their team folders to prepare each team member to discuss the team's strategy use and oral and written Team Talk responses. Each team member must be able to summarize the text and discuss the team's graphic organizer/notes during Class Discussion as indicated.
3. Preview the Team Talk questions. If necessary, ask questions to guide students' reflection as they determine the meaning of the "(Write)" question.

Cue students to use their student routines for strategy use and Team Talk discussion.

### Team Talk Questions

1. With whom do you think Robert J. Oppenheimer was less popular, his fellow scientists or political leaders in the government? Support your thinking. **[DC, SA]** (Team Talk rubric)

*100 = I think Robert J. Oppenheimer was less popular with the government than with his fellow scientists. According to the text, Oppenheimer was the "father of the atomic bomb," which means he did much of the work involved in creating it, but he was banned from doing government-sponsored research after creating it. I know the atomic bomb was a weapon because the text says the government wanted to create even more powerful weapons. I think he became unpopular with government leaders when he opposed their plans, so they fired him. The text doesn't say that other scientists disagreed with him, just that the government did. This shows that he lost his job because he was unpopular with the government.*

*90 = I think Robert J. Oppenheimer was less popular with the government than with other scientists. Oppenheimer was the "father of the atomic bomb," which means he did much of the work involved in creating it, but he was banned from doing government research afterward. The government wanted to create even more powerful weapons than the bomb, but Oppenheimer did not want to do that. The text does not say that his disagreement was with other scientists.*

*80 = He was less popular with the government than with other scientists because he refused to help the government create more powerful weapons. He was fired for refusing to help the government, not for feuding with other scientists.*

*continued*

Team Talk Questions *continued*

2. Which of the following best describes how scientists have changed in the past 200 years? **[RE, SA]** (Team Talk rubric)

- A. They have become less respected, especially among gentlemen.
- B. They have become professionals, specializing in different fields of science.
- C. They have become amateurs who study science in their spare time.
- D. They have become more political and less interested in discovery.

Use evidence from the text and your own knowledge to support your answer.

**100** = **According to the text**, scientists were originally men who were usually financially well off and who studied science as a hobby. They probably had the money and time to buy books and **equipment** to learn about different types of science. I know that a hobby is something you do in your spare time for enjoyment. Today, scientists are generally **professionally trained** to be **specialists** in science. I know that most scientists attend school for a long time and become doctors. This shows that being a scientist has become a respected job rather than a fun hobby.

**90** = Scientists used to be men who were rich and who studied science as a hobby. They probably had the money and time to buy books and tools to learn about different types of science. I know that a hobby is something you do for fun. Scientists are now trained to do their jobs. I know that most scientists go to school for a long time and become doctors.

**80** = Science used to be something studied by rich men as a hobby in their free time, but now it is something that people are trained to do through study and research at school.

3. According to the author, Leif J. Robinson, when does a feud benefit science? When do you think a feud does not benefit science according to Robinson? Support your thinking. **(Write) [RE, MI, SA]** (Team Talk rubric)

**100** = A feud benefits science when it causes the scientists involved to work hard and **examine their data**. Robinson says that **opposing parties** in a feud usually have to create the best arguments to support their ideas or **refine experiments** to make them better or more **accurate**. When this happens, it benefits science. I think that when feuds turn into personal battles or impolite attacks, it does not benefit science as much. I think Robinson believes that scientists should work through their feuds to make science better for everyone, not just themselves.

**90** = A feud helps science when it makes the scientists work hard and check their data. Robinson says that scientists in a feud usually have to make the best arguments to support their ideas or improve tests to make them better. When this happens, it benefits science. I think that when disagreements turn into personal battles or impolite attacks, it does not benefit science as much.

**80** = When disagreeing scientists have to make better arguments or design better tests to show their ideas, this improves science. When scientists just make personal attacks on one another, this does not help science.

*continued*

Team Talk Questions *continued*

4. What do you think is the intent of Robinson when he includes the text-box insert on the bottom of page 8 in the article? **[AP]** (Team Talk rubric)

*100 = Robinson wants readers to **further explore the topic of scientific feuds** by reading the book *Great Feuds in Science*, published by John Wiley and Sons. He **promotes** the book as being a “very readable history” and says it describes ten feuds. These ten feuds may not be covered in *Rage or Reason? When Scientists Feud*, or they may be covered in greater detail. The author wants readers who take an interest in the magazine’s topic to keep learning about it in other places.*

*90 = Robinson wants readers to learn more about scientific arguments by reading *Great Feuds in Science*. He says the book is “very readable,” which means it might be fun. It might cover different arguments or more disagreements than are in the magazine.*

*80 = Robinson wants readers to learn more about scientific arguments in another book that might be enjoyable.*

Randomly select team representatives who will share:

- strategy use
- oral and written Team Talk responses



Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.



## Class Discussion tp

(18 minutes)

### Lightning Round

1. Use **Random Reporter** to have teams share strategy use and oral and written Team Talk responses. Ask other teams to agree, disagree, or add on to responses.
2. Use rubrics to evaluate responses and give specific feedback. Award team celebration points for 100-point responses. Record individual scores on the teacher cycle record form.

### Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.



## Lesson 2

**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

### Teacher Background

Today students will read about the feud between one of the world's greatest inventors and an electrical genius. Thomas Edison and Nikola Tesla once worked together at Edison's laboratories, but their collaboration fell apart after some time. Their paths continued to cross, however, as they competed to create more impressive and important devices to improve the world.

As students preview articles and prepare to read, encourage them to use text features to make predictions about the topic and ideas presented in them. Predicting what information an author is going to present and how it is organized will help students start thinking about the ideas in the article, help them set up their notes, and improve their comprehension of the text.

## Predicting

### Informational Text

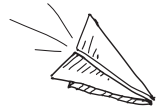
- Before you read, ask:  
What clues can help me predict what this text is about?
  - titles
  - headings
  - bold text
  - captions
  - sidebars
  - pictures
- Use clues to predict the topic of the text. Be prepared to explain your thinking.
- Can you confirm your prediction?

### Literature

- As you read, ask: What clues can help me predict what might happen?
  - setting
  - events
  - character's actions, thoughts, feelings
  - dialogue
- Use clues to predict possible outcomes. Be prepared to explain your thinking.
- Read on to find out if your prediction is confirmed.

You will be referring students to the Predicting Strategy card in their team folders. The Predicting Strategy card is a tool that prompts your students to look for clues to predict what the text is about. Encourage students to use the Predicting Strategy card throughout this unit and throughout the year to help them make predictions and identify clues, recognize information that confirms their predictions, and improve their comprehension of the text.





# Active Instruction tp

(25 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams discuss their vocabulary ratings.



Introduce vocabulary.

## Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rate their knowledge of each as they arrive for class.
2. Spot check the Read and Respond homework.

## Vocabulary

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a “+” and a word the entire team rated with a “?”.
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Award team celebration points.
3. Introduce the vocabulary for this cycle. Read each word aloud, and model chunking as needed. Then read the meaning of each word.

Word	Pronunciation	Definition	Sample Sentence
<b>egoists</b> (noun) page 6	e-go-ists (EE-goh-ists)	self-centered or selfish people	I don't want to join the conversation at that lunch table because those two people are <i>egoists</i> and only want to talk about themselves.
<b>contemporary</b> (noun) page 8	con-tem-po-rar-y (kuhn-TEM-puh-rer-ee)	something or someone that belongs to the same time period	Author C. S. Lewis was a <i>contemporary</i> of J. R. R. Tolkien, so they often communicated and shared their ideas about writing with each other.
<b>prestigious</b> (adjective) page 18	pres-tig-ious (pre-STIJ-uhs) or (pre-STEE-juhs)	having a high or excellent reputation; honored	We learned that Emi was winning an award from the <i>prestigious</i> Association of Young Writers of America for her story of adventure and bravery.

*continued*

Word	Pronunciation	Definition	Sample Sentence
<b>microorganisms</b> (noun) page 21	mi-cro-or-gan-isms (mahy-kroh-AWR-guh-niz-uhms)	any organism, or living creature, too small to be seen with the naked eye	People had no idea that there were <i>microorganisms</i> living in the air and water until the microscope could magnify them.
<b>pathogens</b> (noun) page 21	path-o-gens (PATH-uh-jens)	disease-producing agents, such as bacteria or viruses	Surgeons do not want to introduce any harmful <i>pathogens</i> to their patients when they operate, so they clean their instruments and their bodies as much as possible before surgery.
<b>devising</b> (verb) page 21	de-vi-sing (dih-VAHYZ-ing)	planning or contriving	Zach was already <i>devising</i> ways to improve his science fair project after testing it for the first time.
<b>transmission</b> (noun) page 30	trans-mis-sion (tranz-MISH-uhn)	communication or broadcast of information	The first telephone <i>transmission</i> was over a short distance between offices, but it was a great accomplishment for science.
<b>universally</b> (adverb) page 33	u-ni-ver-sal-ly (yoo-nuh-VUR-suh-lee)	without exception, in a complete or whole manner	The idea that Earth is round was <i>universally</i> accepted by Christopher Columbus's time, despite the popular myth about his sailors fearing that they would sail off the edge of the earth.

4. Use **Random Reporter** to have teams share a new sentence that uses one of their vocabulary words. Award team celebration points.
5. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.

Review Vocabulary Vault.

Teams review their cycle goal.

Post and present the reading objective.

Review the TIGRRS process. Display the Predicting Strategy Card for informational text.

Refer students to pages 28–31 in the text.



Model identifying a graphic organizer.

### Set the Stage

1. Ask students to review their team’s goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading objective.
4. Refer students to the TIGRRS process. Remind them that the first step in the TIGRRS process is to predict the topic of the text.

Display the Predicting Strategy Card for informational text. Point out to students that this strategy card is in their team folders. The Predicting Strategy Card for informational text can help them make predictions about the topic. Have partners use the Predicting Strategy Card as they survey the text and predict the topic.

Allow a minute for this activity. Use **Think-Pair-Share** to ask:

#### **What is the topic of this text? How do you know?**

*The topic of the text is the battle between two electric currents, AC and DC, and their inventors, Nikola Tesla and Thomas Edison. I know because the title of the article is “Battle of the Currents: AC or DC?” I see a large text box on page 30 titled “More Tesla/Edison Inventions That Changed the World,” so I think Tesla and Edison are the scientists behind the battle. Their biggest feud must have been about AC and DC currents.*

5. Prompt students to identify the next step of TIGRRS. Have partners predict the author’s intent. Use **Think-Pair-Share** to ask:

#### **What is the intent of the author? How do you know?**

*The author wants to inform me about a famous scientific feud. I think I will learn about what caused the feud between Edison and Tesla and maybe who won it.*

6. Remind students that as they read, they will make notes about the important ideas on a graphic organizer. Remind students that when they read texts with multiple articles, they may use a different graphic organizer for each article.

Refer students to “Battle of the Currents: AC or DC?” pages 28–31. Model looking for clues and identifying the appropriate graphic organizer to use.

**As I look through the text, I don’t see any signal words to suggest that I will find causes and effects, and there aren’t any headings to help me organize main ideas and supporting details. However, the text does make a lot of comparisons between Thomas Edison and Nikola Tesla. I think a Venn diagram might be the best organizer to use; it will help me compare and contrast important ideas about these inventors. (Display or draw a Venn diagram.) In the middle, where the two circles overlap, we write the things that the two subjects have in common. In each subject’s individual circle, we write the ways that each subject is different.**

Build background about the topic.

Review the skill as necessary.

**Teacher:** Read aloud and think aloud to model target skill or strategy use within the TIGRRS process.

**Students:** Actively listen.

- T:** Battle between inventors of AC and DC currents
- I:** To inform the reader about the Edison and Tesla feud
- G:** Venn diagram

7. Review the Big Question with students: When does a disagreement between friends, acquaintances, or coworkers become a feud? Use **Think-Pair-Share** to ask:

**How might competition encourage feuds?**

*If two people are competing against each other, it means they are rivals and are each trying to do something better than the other person. The two people competing against each other may never agree to work together, so they just continue trying to beat the other person. When one person creates something good, the other creates something better, back and forth.*

8. (Optional) If you have access to the Internet, show the following videos to provide students with background information:

- “Electricity” [www.pbslearningmedia.org/content/idptv11.sci.phys.energy.d4kele](http://www.pbslearningmedia.org/content/idptv11.sci.phys.energy.d4kele)
- “Edison’s Inventions” [www.nps.gov/edis/forkids/index.htm](http://www.nps.gov/edis/forkids/index.htm)
- “AC and DC” [www.pbs.org/tesla/ins/ins\\_acdc.html](http://www.pbs.org/tesla/ins/ins_acdc.html)

**Interactive Read Aloud**

1. Refer students to the reading objective: to use strategies to help identify important information and the relationship of ideas. Explain that it is important to make connections between ideas, people, and events across texts.
2. Explain that you are going to take the next step in the TIGRRS process: read and restate. You will read a section of text aloud and restate the important ideas. Read “Battle of the Currents: AC or DC?,” page 29 (paragraph 1) aloud. A sample Think Aloud follows.

Sample Think Aloud
<p>Let me think about the information I read. I know that I’ll be reading about a feud since that should be the important idea across the articles in this magazine; however, I read that this feud started off as a great partnership. Nikola Tesla respected Thomas Edison so much that he traveled to Manhattan to meet Edison, and Edison was so impressed with Tesla’s knowledge that he hired him right away. I can make a connection to what I read in “Lab Wars” because in that text, I learned that much of science is developed when scientists work together and build off one another’s research. It seems like this is how it was for Edison and Tesla, at least at first.</p>

**Teacher:** Restate important ideas in the text, and add notes to the graphic organizer.

**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill or strategy.



- Point out to students that you made a connection between the text you are currently reading and a text you read previously. Explain that making this connection helps you understand the ideas better, especially the idea of how scientists develop feuds with one another.
- Partner Practice: Student partner pairs use the read-aloud/think-aloud process to practice the skill or strategy with the next passage in the text. Have students read page 29 (paragraph 2) aloud. Use **Think-Pair-Share** to ask:

**What were Edison’s reasons behind what happened to his partnership with Tesla? Does this confirm any ideas mentioned in “Lab Wars”? Support your thinking.**

*First, Edison claimed that he had only been joking about giving Tesla a bonus for fixing the dynamos. Edison’s friends also claimed that it was Tesla’s fault that he did not receive his bonus because he was too interested in his own ideas and in making machines that were not compatible with Edison’s work. I think this does support something I read in “Lab Wars.” The author of that article said that scientists are egoists, and we discussed that scientists are protective of their work. Edison might not have appreciated Tesla’s desire to improve or change his work because Edison was proud of what he had created. Pride might have had something to do with their partnership falling apart.*

Use **Random Reporter** to debrief.

- Refer students to the next step in the TIGRRS process: reread and review. Ask partners to review this section of text, check their understanding with each other, reread what they need to clarify, and add notes to their graphic organizers. Use **Think-Pair-Share** to ask:

**What were you able to clarify by rereading?**

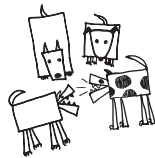
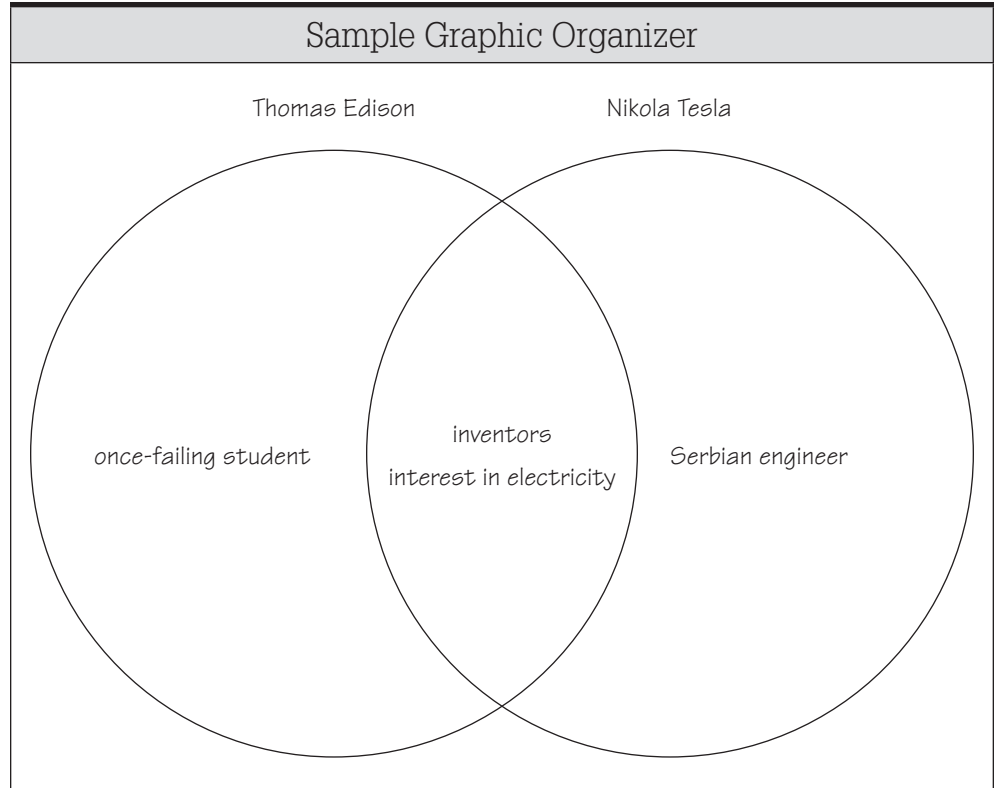
*Answers will vary.*

Use **Random Reporter** to debrief. Add student responses to the graphic organizer.

A sample graphic organizer follows.



**Partner pairs:** Review, reread to clarify, and add to the graphic organizer.



## Teamwork tp

(20 minutes)

Cue students to use their student routines for partner reading and the TIGRRS process.

### Partner Prep

1. Explain, or review if necessary, the student routines for partner reading and the TIGRRS process before having students read and restate: sr  
**pages 28–31 aloud with partners.**
2. Circulate and check for comprehension, evidence of strategy use, and use of the TIGRRS process, for example, restating ideas on the graphic organizer. Give students feedback. Prompt and reinforce their discussions.
3. If some partners finish ahead of their teammates, have them begin looking over the Team Talk questions.

### Team Discussion

1. Explain, or review if necessary, how to use role cards and the student routines for strategy use and Team Talk discussion. sr
2. Remind students to use the rubrics on their team folders to prepare each team member to discuss the team’s strategy use and oral and written Team Talk responses. Each team member must be able to summarize the text and discuss the team’s graphic organizer/notes during Class Discussion as indicated.

Cue students to use their student routines for strategy use and Team Talk discussion.

3. Preview the Team Talk questions. If necessary, ask questions to guide students' reflection as they determine the meaning of the "(Write)" question.

### Team Talk Questions

1. What may have been the final event that caused the feud between Edison and Tesla? Why do you think this caused such a problem? Support your thinking. **[DC, SA]** (Team Talk rubric)
- 100 = Edison promised Tesla a **bonus** if he could make the **dynamos** for Edison's electric company work more **efficiently**. According to the text, Tesla **succeeded** in fixing the dynamos, but Edison **claimed** he was only kidding about the bonus. I think it made Tesla distrust Edison as an employer. The two men were already opposites in many ways, **for example**, in the way they worked. Edison liked experimenting through trial and error while Tesla worked out long calculations before experimenting. **This lie, in addition to the personality differences between the two men, caused them to end their working relationship.**
- 90 = Edison promised Tesla more money if he could make the machines for Edison's electric company work better. Tesla fixed the machines, but Edison said he was only kidding about the money. It made Tesla distrust Edison. The two men were already opposites, such as in the way they worked. Edison liked trial and error while Tesla worked out problems before testing them.
- 80 = The feud between Edison and Tesla started when Edison did not reward Tesla with money for fixing his machines as Edison had promised. I think it made Tesla distrust Edison on top of other problems they had.
2. What made polyphase alternating current (AC) more practical for providing electricity to cities than direct current (DC)? What applications is DC still used for? Support your response. **[RE, MI]** (Team Talk rubric)
- 100 = Polyphase alternating current is **complicated** but **practical** because of how the electricity travels. **According to the text**, AC systems can send electricity long distances over thin copper wires, making it more cost **effective**. DC systems can only send electricity short distances, so it needs power stations every few blocks and requires thicker wires, which cost more money. With AC systems, Tesla could even **harness** the power of Niagara Falls to **generate** electricity for cities far away. DC is still used in many useful applications such as flashlights. **This shows that while AC may be the most useful way to power large cities and homes, DC is useful for small devices.**
- 90 = Polyphase alternating current is not simple, but it is more useful because of how the electricity travels. AC systems can send electricity long distances over thin copper wires, making it cheaper. DC systems can only send electricity short distances, so it needs power stations every few blocks and uses thicker wires, which cost more money. With AC systems, Tesla could even use Niagara Falls to create electricity for cities far away. DC is still used in flashlights.
- 80 = Polyphase alternating current is more useful because it can cover a larger area for less money than direct current. DC can still be found in simple tools.

continued



Team Talk Questions *continued*

3. Tesla made the following statement about Edison: "If Thomas Edison had to find a needle in a haystack, he would examine each straw instead of finding a smarter way." Which of the following best rephrases what Tesla thought about Edison's work habits? **[DC, CV]** (Team Talk rubric)

- A. Edison always looked for shortcut answers.
- B. Edison preferred to keep things simple.
- C. Edison was a role model of good work habits.
- D. Edison worked harder rather than smarter.

Why do you think Tesla did not appreciate Edison's methods of inventing or researching?

*100 = I think Tesla probably thought Edison wasted a lot of time doing unnecessary work rather than finding a more efficient way to solve problems. The text says that Edison preferred trial and error, which means he experimented over and over until he succeeded. According to the description of Tesla, he was scholarly and bookish, preferring to think out ideas and work out long calculations. I think this shows that he planned out experiments to figure out the best way to test an idea without wasting time.*

*90 = I think Tesla probably thought Edison wasted a lot of time doing more work than he needed to do to solve problems. Edison liked trial and error, which means he tested ideas over and over until he succeeded. Tesla was well educated, preferred to think out ideas, and worked out long problems.*

*80 = Tesla probably thought Edison wasted a lot of time testing ideas through trial and error instead of thinking and solving problems before testing them over and over again.*

*continued*



Team Talk Questions *continued*

4. In “Lab Wars,” Robinson argued that feuds could sometimes inhibit scientific development. Does Nick D’Alto agree with Robinson when it comes to the feud between Edison and Tesla? Support your thinking. **(Write) [RE, MI, SA]** (Team Talk rubric)

*100 = I think Nick D’Alto disagrees because the feud between Edison and Tesla caused them both to be **prolific researchers and inventors**. After their working relationship **dissolved**, they raced to invent greater and greater machines. Edison continued to **promote DC electricity** for powering cities, created a new telephone, designed **prefabricated** houses, and created a movie studio. Tesla promoted AC electricity, built the most powerful steam engine in the world, designed vacuum tubes to be later used in television, and invented a machine that made showers of artificial lightning. **This shows that instead of hurting scientific development, their race to outinvent each other provided new devices for people to use.***

*90 = Nick D’Alto disagrees because the disagreement between Edison and Tesla caused them both to create many new machines. Edison continued to support DC electricity, created a new telephone, designed premade houses, and created a movie studio. Tesla supported AC electricity, built the most powerful steam engine in the world, designed tubes later used in television, and made a machine that made lightning.*

*80 = The author disagrees because the disagreement between Edison and Tesla caused them to invent more machines to try to outdo each other. Their feud helped science.*

5. The vocabulary word *pathogen* comes from the Greek root *patho*, meaning suffering or feeling. What do you think the word *sympathy* means? **[CV]**

*I think the word sympathy means that you have a similar feeling as someone, such as when they are sad or are suffering.*

4. Have students thoroughly discuss Team Talk questions before they write individual answers to the skill question marked “(Write).” Allow students to revise their answers after further discussion if necessary.
5. Prompt teams to discuss comprehension problems and strategy use (their sticky notes), and important ideas that they added to their graphic organizers.
6. Circulate and give feedback to teams and students. Use rubrics to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
7. Award team celebration points for good team discussions that demonstrate 100-point responses.

Cue students to discuss strategy use and graphic organizers.

**Randomly select team representatives who will share:**

- strategy use
- oral and written Team Talk responses



Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.



# Class Discussion

(15 minutes)

## Lightning Round

1. Use **Random Reporter** to have teams share strategy use, and oral and written Team Talk responses. Ask other teams to agree, disagree, or add on to responses.
2. Use rubrics to evaluate responses and give specific feedback. Award team celebration points for 100-point responses. Record individual scores on the teacher cycle record form.

## Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Word	Pronunciation	Definition	Sample Sentence
<b>egoists</b> (noun) page 6	e-go-ists (EE-goh-ists)	self-centered or selfish people	I don't want to join the conversation at that lunch table because those two people are <i>egoists</i> and only want to talk about themselves.
<b>contemporary</b> (noun) page 8	con-tem-po-rar-y (kuhn-TEM-puh-rer-ee)	something or someone that belongs to the same time period	Author C. S. Lewis was a <i>contemporary</i> of J. R. R. Tolkien, so they often communicated and shared their ideas about writing with each other.
<b>prestigious</b> (adjective) page 18	pres-tig-ious (pre-STIJ-uhs) or (pre-STEE-juhs)	having a high or excellent reputation; honored	We learned that Emi was winning an award from the <i>prestigious</i> Association of Young Writers of America for her story of adventure and bravery.
<b>microorganisms</b> (noun) page 21	mi-cro-or-gan-isms (mahy-kroh-AWR-guh-niz-uhms)	any organism, or living creature, too small to be seen with the naked eye	People had no idea that there were <i>microorganisms</i> living in the air and water until the microscope could magnify them.
<b>pathogens</b> (noun) page 21	path-o-gens (PATH-uh-jens)	disease-producing agents, such as bacteria or viruses	Surgeons do not want to introduce any harmful <i>pathogens</i> to their patients when they operate, so they clean their instruments and their bodies as much as possible before surgery.
<b>devising</b> (verb) page 21	de-vi-sing (dih-VAHYZ-ing)	planning or contriving	Zach was already <i>devising</i> ways to improve his science fair project after testing it for the first time.
<b>transmission</b> (noun) page 30	trans-mis-sion (tranz-MISH-uhn)	communication or broadcast of information	The first telephone <i>transmission</i> was over a short distance between offices, but it was a great accomplishment for science.
<b>universally</b> (adverb) page 33	u-ni-ver-sal-ly (yoo-nuh-VUR-suh-lee)	without exception, in a complete or whole manner	The idea that Earth is round was <i>universally</i> accepted by Christopher Columbus's time, despite what the popular myth says about his sailors fearing that they would sail off the edge of the earth.

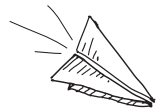
## Lesson 3

**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

### Teacher Background

Today students will read about the invention of calculus and who should receive credit for it: Sir Isaac Newton or Baron Gottfried Wilhelm Leibniz. There is evidence that Newton created calculus first, but he never published his ideas until after Leibniz created calculus independently of Newton and published his work. As a result, the world of mathematics remained divided for some time over who invented it and who had created the best system of performing calculus calculations.

In this lesson, you will also introduce the partner routine for practicing fluency and the fluency rubric. The fluency rubric will help partners give feedback to each other to improve their fluency. It is also a tool for evaluating and giving feedback to students in the Lightning Round.



## Active Instruction tp

(25 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams discuss their vocabulary ratings.



Review Vocabulary Vault.

### Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they reread their knowledge of each vocabulary word as they arrive for class.
2. Spot check the Read and Respond homework.

### Vocabulary

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a "+" and a word the entire team rated with a "?."
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Use **Random Reporter** to have teams report on a new sentence using a vocabulary word. Award team celebration points.
3. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.

Teams review their cycle goal.

Post and present the reading objective.

Review the TIGRRS process.

Refer students to pages 17–19 in the text.

Students begin the TIGRRS process by predicting the topic and author's intent.



Model identifying a graphic organizer.

### Set the Stage

1. Ask students to review their team's goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading objective.

4. Refer to the first steps in the TIGRRS process. Remind students that they can refer to the Predicting Strategy Card for informational text to help them make predictions. Have partners survey the text to predict the topic. Use **Think-Pair-Share** to ask:

#### **What is the topic of this text? How do you know?**

*The topic of the text is who invented calculus. I know because the title of the text is "A Quarrel: Who Invented Calculus?" I also see headings that say, "Facing Off," "War in the Math World," and "Who Won?" which tell me that the feud in this article is about who invented calculus.*

5. Prompt students to identify the next step of TIGRRS. Have partners predict the author's intent. Use **Think-Pair-Share** to ask:

#### **What is the intent of the author? How do you know?**

*The author wants to inform me about the feud over who invented calculus. I know this is the intent because the title of the article asks that question. The author must want to tell me the answer. There is information in the article to tell me about the feud.*

6. Remind students that as they read, they will make notes about the important ideas on a graphic organizer. Remind students that when they read texts with multiple articles, they may use a different graphic organizer for each article.

Refer students to "A Quarrel: Who Invented Calculus?," pages 17–19. Use a Think Aloud to model looking for clues and identifying the appropriate graphic organizer to use.

**In the last text, I used a Venn diagram to record important information, but I don't think that graphic organizer will work here. I also don't see a lot of information that asks for causes and effects or to sequence information. There are several different sections within the article that seem to discuss important ideas. I think a web like the one I used while reading "Lab Wars" is the best for this text; it will help me note the important ideas in the article and their supporting details.**

**T:** Who invented calculus

**I:** To inform the reader about the feud over who invented calculus

**G:** A web

7. Point out that students may be more familiar with Sir Isaac Newton for his theories on gravity than for inventing calculus.

(Optional) If you have time and access to the Internet, view the following video to give students background information on Newton's laws of motion: "Forces and Motion" [www.pbslearningmedia.org/content/idptv11.sci.phys.maf.d4kfom](http://www.pbslearningmedia.org/content/idptv11.sci.phys.maf.d4kfom).

8. If necessary, provide background on the development of mathematics over time. For example:
- 50,000 B.C.E.: Evidence of counting has been discovered dating as far back as 50,000 B.C.E.
  - 518 B.C.E.: Although geometry had been used by Babylonians for hundreds of years, the Greek philosopher Pythagoras made geometry practical and was the first to prove its concepts, such as the Pythagorean theorem for triangles ( $a^2 + b^2 = c^2$ ).
  - 830 C.E.: Islamic mathematician Al-Khowarizmi introduced algebra to the western world, becoming known as the father of algebra.

### Interactive Read Aloud

1. Tell students that you will take the next step in the TIGRRS process: read and restate. You will read a section of text aloud and then restate the important ideas. Read "A Quarrel: Who Invented Calculus," page 18 (paragraph 4) aloud. Use **Think-Pair-Share** to ask:

**One of the thoughts on why Newton didn't publish his work on calculus was because he didn't want to be criticized. How does this relate to what we've already read about scientists?**

*We've already learned that scientists are very proud of their work and sometimes do not appreciate others disagreeing with them or showing them that their work is wrong. I think that if Newton was afraid of being criticized, it shows that he was proud of his ideas and wasn't ready for people to be critical of them. He didn't want to give other people the opportunity to insult him or his work.*

2. Partner Practice: Student partner pairs use the read-aloud/think-aloud process to practice the skill or strategy with the next passage in the text.

Have students read page 18 (paragraphs 5 and 6) aloud.

Use **Think-Pair-Share** to ask:

**Did Leibniz have the same fears as Newton when it came to publishing his work? How can you tell?**

*Leibniz must have been more confident about his work than Newton because in less than ten years, he independently invented, outlined, and published his work on calculus. He was not as afraid of criticism as Newton, who still had not published his work on calculus after nearly twenty years.*

Use **Random Reporter** to debrief.

**Teacher:** Read aloud.  
**Students:** Practice the skill or strategy.



**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill/strategy.



**Partner pairs:** Review, reread to clarify, and add to the graphic organizer.

- Refer students to the next step in the TIGRRS process: reread and review. Ask partners to review this section of text, check their understanding with each other, reread what they need to clarify, and add notes to their graphic organizers.

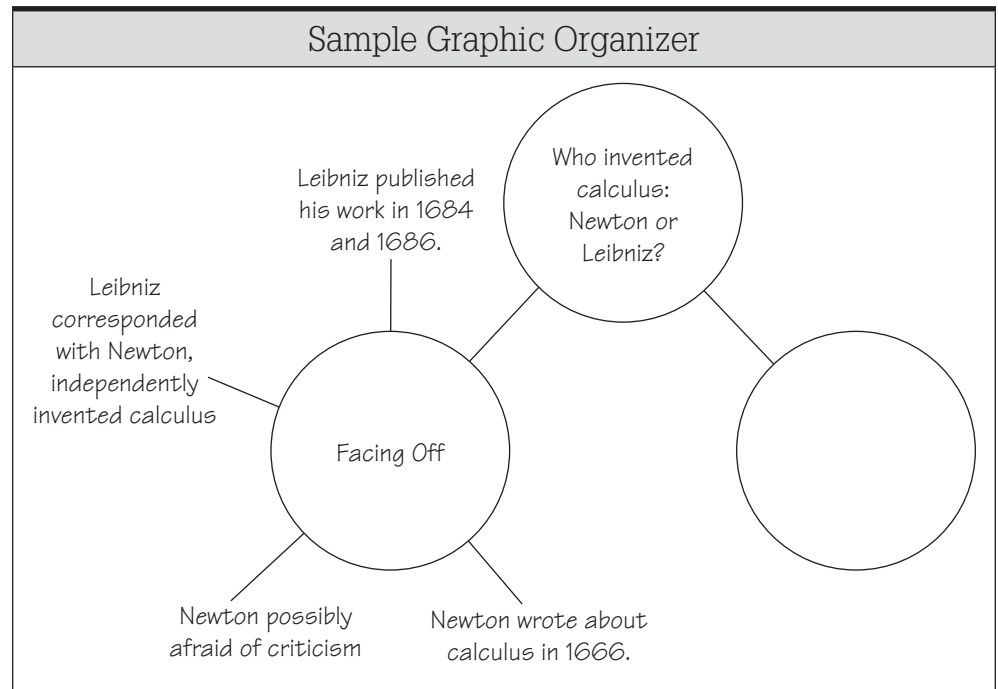
Use **Think-Pair-Share** to ask:

**What were you able to clarify by rereading?**

*Answers will vary.*

Use **Random Reporter** to debrief. Add student responses to the graphic organizer.

Remind students that their webs may look different and that they may add more bubbles, as needed, for the information that they gather from the text.



Introduce fluency routine.

- Introduce the partner routine for practicing fluency and the fluency rubric. Explain that fluency is about pronouncing words correctly and reading smoothly, with expression, and at a speed that is just right for understanding the text. Point out that when we practice fluency, we become better and more fluent readers.
- Refer students to the teamwork routine for fluency, and review the routine.

With Partners	First	Second	Third	Fourth	Finally
<b>3 Fluency</b>	Choose a short passage from the text.	Practice reading it aloud with your partner.	Use the fluency rubric to give your partner feedback.	Make sure all team members are prepared for a fluency check in the Lightning Round.	

6. Display the following fluency rubric (also on the team folder). Remind students that the rubrics are tools to help teams get ready for the Lightning Round. Explain that teams can earn points on the poster when they practice and prepare their team members to read a short passage fluently. Review the levels on the rubric.

<b>Fluency</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and reads smoothly and with expression (shows emotion and changes with punctuation and dialogue).</b>
<b>90</b>	gives an 80-pt. response <b>and reads at just the right pace to understand the text—not too slow and not too fast.</b>
<b>80</b>	reads a short passage and pronounces most of the words correctly.

7. Introduce the video.

**Let's watch as partners practice fluency. Using the fluency rubric, think about what feedback you would give the partners. Do they pronounce words correctly? Do they read at just the right rate for the text? Do they read smoothly and with expression?**

Show the first part of the video.

Use **Think-Pair-Share** to debrief.

**Using the fluency rubric, what feedback would you give the partner?**

*Accept reasonable responses.*

Show the second part of the video.

Use **Think-Pair-Share** to debrief.

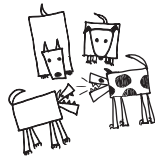
**What feedback did the listening partner give the reading partner? How did the feedback help?**

8. Refer again to the fluency teamwork routine and tell partners to practice the routine in partner reading. Point out that teams earn points for fluency during the Lightning Round if their Random Reporter gives a 100-point response. Teams will want to be sure all team members are ready to read a passage fluently.

Show video "Partner Fluency Practice"







# Teamwork tp

(20 minutes)

Cue students to use their student routines for partner reading, fluency, and the TIGRRS process.

## Partner Prep

1. Explain, or review if necessary, the student routines for partner reading, fluency, and the TIGRRS process before having students read and restate: sr  
**pages 17–19 aloud with partners.**
2. Circulate and check for comprehension, evidence of strategy use, and use of the TIGRRS process, for example, restating ideas on the graphic organizer. Give students feedback. Prompt and reinforce their discussions.
3. If some partners finish ahead of their teammates, have them begin looking over the Team Talk questions.

## Team Discussion

1. Explain, or review if necessary, how to use role cards and the student routines for strategy use and Team Talk discussion. sr
2. Remind students to use the rubrics on their team folders to prepare each team member to discuss the team’s strategy use, oral and written Team Talk responses, and fluency. Each team member must be able to summarize the text and discuss the team’s graphic organizer/notes during Class Discussion as indicated.
3. Preview the Team Talk questions. If necessary, ask questions to guide students’ reflection as they determine the meaning of the “(Write)” question.

Cue students to use their student routines for strategy use and Team Talk discussion.

### Team Talk Questions

1. The author refers to the year from 1665 to 1666 as the wonderful year for Newton. Why do you think this year is described this way, despite there being a deadly plague in England? Support your thinking. **(Write) [RE, DC, SA]** (Team Talk rubric)
 

100 = *Because of the plague, Cambridge University had to close Trinity College temporarily and send the students, including Newton, home. I think it was a wonderful year because Newton was left to educate himself. I can imagine that while at school, he had to study and do work for all the classes he was taking, but at home, he could focus on ideas that were really important to him. The text says that he invented calculus and his theory about gravity during this year at home, which turned out to be very important later in history. This shows that, although the plague was a bad thing, it gave Newton the freedom to create important scientific ideas. Without that year off from school, these ideas might have been invented later or by someone else.*

90 = *Because of the plague, Cambridge University had to close Trinity College for a while and send the students home. It was a wonderful year because Newton had to educate himself. At home, he could probably concentrate on ideas that were really important to him. Newton invented calculus and his theory about gravity during this year, which became very important ideas in science later.*

80 = *The plague meant that Newton had to do his own studying at home, giving him time to focus on subjects and ideas that were very important to him, such as calculus.*

*continued*

Team Talk Questions *continued*

2. How did the feud between Newton and Leibniz escalate beyond just arguing over who invented calculus first? Does their feud support the argument from “Lab Wars” on pages 6–9 that scientists can often harbor unscientific feelings? Support your thinking. **[RE, SA]** (Team Talk rubric)

100 = *While the feud began as a disagreement over who invented calculus first, Newton and Leibniz’s supporters joined the fray. According to the text, Leibniz’s supporters issued mathematical challenges to Newton, and the two scientists slung insults at each other. Then their argument started to involve their different opinions in philosophy, religion, and other subjects. Newton used politics to block Leibniz from arguing through the Royal Society. They showed that they had very unscientific or illogical feelings by attacking each other personally and about opinions that had nothing to do with mathematics or calculus. This shows that scientists are regular people who feel strongly about many topics.*

90 = *The feud began as a disagreement over who invented calculus first, but when Newton’s and Leibniz’s friends joined the argument, it turned more personal. Leibniz’s supporters sent mathematical challenges to Newton, and the two scientists often insulted each other. They argued over their different ideas about philosophy, religion, and other subjects. Newton used his position at the Royal Society to block Leibniz. They showed that they had very unscientific or illogical feelings by attacking each other personally.*

80 = *While the argument started over calculus, it turned into bitter personal attacks and political maneuvers. Scientists have strong feelings about many different things.*

3. In the last section on page 19, the author compares Newton’s calculus notation with Leibniz’s notation and refers the reader to page 17. What information do you think could make this text feature on page 17 more effective for readers? Support your reasoning. **[DC, SA]** (Team Talk rubric)

100 = *Page 17 has unlabeled images of two men with mathematical equations written in speech bubbles next to them. Captions or labels for these images would help me better understand the text. I can conclude that Newton is the man on the right because the author describes his calculus notation as having dots in it. However, I think both equations are difficult to understand if someone is unfamiliar with calculus. Also, the equation on the left has a dot in it and some other strange markings. This shows that captions would help readers understand right away which equation and which features they were looking for.*

90 = *Page 17 has unmarked images of two men with equations written next to them. Captions or labels for these images would help me better understand the text. I think Newton is the man on the right because the author describes his equation as having dots in them. But both equations are difficult to understand, and the equation on the left has a dot and some other strange markings in it.*

80 = *Page 17 has two images of men with equations in speech bubbles, but it might be hard for some readers to figure out which is Newton’s equation from the text. Captions would help to make this clearer.*

*continued*

Team Talk Questions *continued*

4. Which of the following statements best states the author's opinion about sharing ideas? **[MI, RE]** (Team Talk rubric)
- A. Scientists should keep their ideas to themselves until they are ready to publish.
  - B. Publishing ideas means that other people can steal your work.
  - C. Publishing ideas means that other people may get your ideas wrong.
  - D. *Scientists should publish their ideas so everyone can work to improve them.*

How might the feud between Newton and Leibniz have turned out differently if Newton had published his ideas?

*100 = Newton wrote a paper about calculus in 1666, but he chose to show it to only a few people and never **published** it. **Later Leibniz communicated with Newton through letters and may have learned enough to independently invent calculus himself, but unlike Newton, he published his work in 1684. This led to a bitter argument between Newton, Leibniz, and their supporters, and the two scientists never worked together. I think that if Newton had published his ideas, he and Leibniz would probably have been able to collaborate and advance calculus together rather than independently. This would have benefitted science more than their feud.***

*90 = Newton wrote a paper about calculus in 1666, but he chose to show it to only a few people and never shared it with the public. Later Leibniz wrote to Newton and may have learned enough to invent calculus himself, but unlike Newton, he shared his work in 1684. This led to a bitter argument between Newton and Leibniz, and they never worked together. If Newton had shared his ideas, he and Leibniz could have worked on calculus together.*

*80 = Even though Newton invented calculus before Leibniz, no one really knew about it because he didn't share his work with the public. If he had, he and Leibniz could have worked together to develop calculus.*

5. Choose a word from the vocabulary list, and write a meaningful sentence using the word correctly. **[CV]**

*Accept a sentence that shows that the student knows the meaning of the word and can use it correctly. For example: Although he was much older, Benjamin Franklin was a contemporary of Thomas Jefferson and gave him advice on writing the Declaration of Independence.*

4. Have students thoroughly discuss Team Talk questions before they write individual answers to the skill question marked "(Write)." Allow students to revise their written answers after further discussion if necessary.
5. Prompt teams to discuss comprehension problems and strategy use (their sticky notes), and important ideas that they added to their graphic organizers.
6. Circulate and give feedback to teams and students. Use rubrics to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.

Cue students to discuss strategy use, and graphic organizers.

7. If some teams finish ahead of others, have them practice their fluency.
8. Award team celebration points for good team discussions that demonstrate 100-point responses.



## Class Discussion tp

(15 minutes)

**Randomly select team representatives who will share:**

- strategy use
- oral and written Team Talk responses
- fluency selection



### Lightning Round

1. Use **Random Reporter** to have teams share strategy use, oral and written Team Talk responses, and fluency. Ask other teams to agree, disagree, or add on to responses.
2. Use rubrics to evaluate responses and give specific feedback. Award team celebration points for 100-point responses. Record individual scores on the teacher cycle record form.

### Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Celebrate team successes!

The top team chooses a cheer.

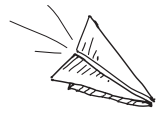
Remind students of the Read and Respond homework assignment.

## Lesson 4

**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

### Teacher Background

Today students will read about the feud between Louis Pasteur and Félix Pouchet about whether life could spontaneously generate. Although Pasteur demonstrated with solid evidence that the idea of spontaneous generation was wrong, it took nearly fifty years for all leading scientists to accept his theory as fact.



## Active Instruction

(25 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams discuss their vocabulary ratings.



Review Vocabulary Vault.

Teams review their cycle goal.

Post and present the reading objective.

### Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rerate their knowledge of each vocabulary word as they arrive for class.
2. Spot check the Read and Respond homework.

### Vocabulary

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a “+” and a word the entire team rated with a “?”.
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Use **Random Reporter** to have teams report on a new sentence using a vocabulary word. Award team celebration points.
3. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.

### Set the Stage

1. Ask students to review their team’s goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading objective.

Refer students to pages 20–23 in the text.

Students predict the topic and author's intent and choose a graphic organizer.



- Refer students to the first steps in the TIGRRS process. Remind them that they can use the Predicting Strategy Card to help them make predictions. Use **Think-Pair-Share** to have students predict the topic and identify clues and predict the author's intent. Randomly select a few students to share.
- Use **Think-Pair-Share** to ask:

**Which graphic organizer(s) will work best with this text? Why?**

**T:** A feud over germs

**I:** To inform the reader about a debate between two scientists and who won the debate about germs

**G:** A web

### Interactive Read Aloud

- Read “Germ Warfare: Showdown in a Paris Theater,” pages 20 and 21 (ending at paragraph 1) aloud. Use **Think-Pair-Share** to ask:

**What does Louis Pasteur think of the research and work of other scientists based on what he says at the start of his presentation? How can you tell?**

*Louis Pasteur thinks the research of other scientists is wrong. According to the text, he says that they have had “enough of poetry, enough fantasy, and enough of intuitive solutions.” It sounds like he is preparing the audience to hear the truth or correct way of thinking.*

**Based on what you’ve learned about scientific feuds, how do you think other scientists might take Pasteur’s words?**

*Other scientists might be hurt and want to defend their work since it seems like Pasteur is going to attack it. It does not seem like Pasteur is being complimentary of other scientists, and I know that scientists don’t always appreciate criticism, which leads to feuds.*

- Partner Practice: Student partner pairs use the read-aloud/think-aloud process to practice the skill or strategy with the next passage in the text.

Have students read page 21 (paragraphs 1 and 2).

Use **Think-Pair-Share** to ask:

**Make a connection between what the author describes as the old thought on spontaneous generation and what Pasteur said at the start of his presentation.**

*The idea that life springs from nothing is the poetry and fantasy that Pasteur mentioned in his presentation. Although most scientists had stopped believing that rats emerged from cheese or maggots came from rotting meat, it seems that they were willing to believe that microbes still magically appeared from nothing. Pasteur wants facts to prove this one way or another.*

**Teacher:** Read aloud.

**Students:** Practice the skill or strategy.



**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill/strategy.



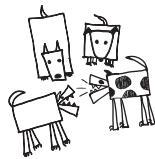
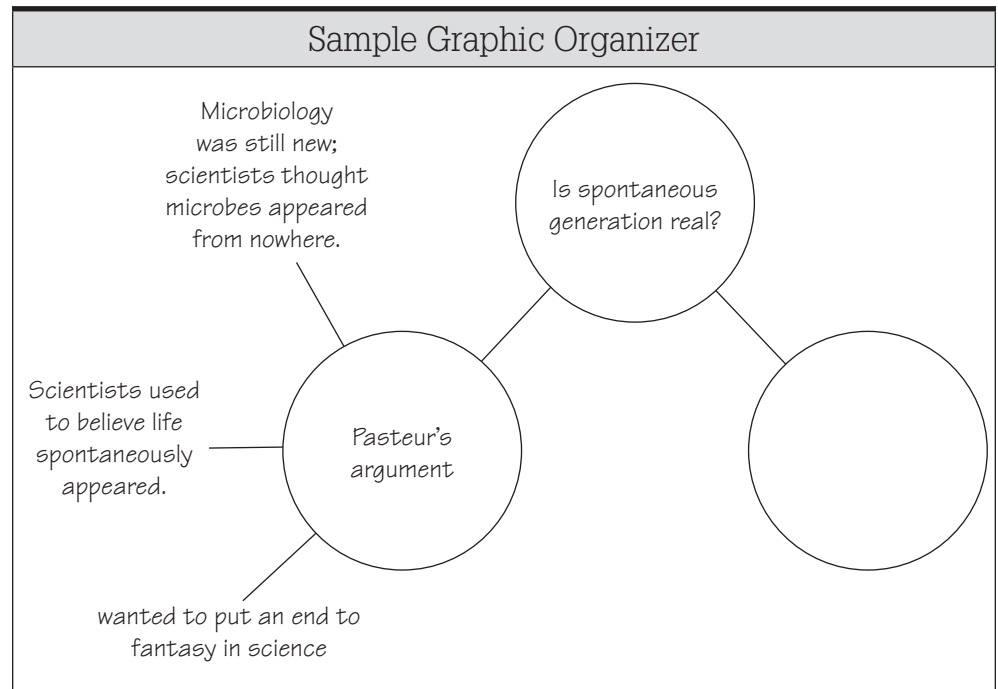
**Partner pairs:** Review, reread to clarify, and add to the graphic organizer.

Use **Random Reporter** to debrief.

3. Refer students to the next step in the TIGRRS process: reread and review. Ask partners to review this section of text, check their understanding with each other, reread what they need to clarify, and add notes to their graphic organizers.

Use **Random Reporter** to debrief. Add student responses to the graphic organizer.

A sample graphic organizer follows.



## Teamwork tp

(20 minutes)

### Partner Prep

1. Explain, or review if necessary, the student routines for partner reading, fluency, and the TIGRRS process before having students read and restate: sr  
**pages 20–23 aloud with partners.**
2. Circulate and check for comprehension, evidence of strategy use, and use of the TIGRRS process, for example, restating ideas on the graphic organizer. Give students feedback. Prompt and reinforce their discussions.
3. If some partners finish ahead of their teammates, have them begin looking over the Team Talk questions.

Cue students to use their student routines for partner reading, fluency, and the TIGRRS process.



Cue students to use their student routines for strategy use and Team Talk discussion.

### Team Discussion

1. Explain, or review if necessary, how to use role cards and the student routines for strategy use and Team Talk discussion. **Sf**
2. Remind students to use the rubrics on their team folders to prepare each team member to discuss the team's strategy use, oral and written Team Talk responses, and fluency. Each team member must be able to summarize the text and discuss the team's graphic organizer/notes during Class Discussion as indicated.
3. Preview the Team Talk questions. If necessary, ask questions to guide students' reflection as they determine the meaning of the "(Write)" question.

#### Team Talk Questions

1. Write a summary of the section of text that you read today. **(Write) [MI]**

*100 = Louis Pasteur presented his idea that germs grow from parent cells to oppose the idea that life is spontaneously generated. He explained how Félix Pouchet's experiment was flawed and how his own experiment corrected those mistakes. Although some scientists still supported Pouchet's experiments for years afterward, many more accepted Pasteur's ideas. With their support, Pasteur developed important processes that made food, especially milk, safer to eat and made surgery sterile and safe for patients.*

*90 = Louis Pasteur presented his idea that germs grow from parent cells to oppose the idea that life appears from nothing. He explained what went wrong in Pouchet's tests and how he fixed those mistakes. Although some scientists still supported Pouchet's tests years later, many more followed Pasteur's ideas. He developed important processes that made food and surgery safer for everyone.*

*80 = Pasteur presented his ideas about life forming from parent cells and gained the support of many scientists. He used his ideas to develop techniques to make food and surgery safer.*

*continued*



Team Talk Questions *continued*

2. What caused Pouchet to be so eager to attack Pasteur's ideas and experiments even before hearing Pasteur's full argument? What could he have done instead that would have benefitted science more? Support your answer. **(Write [RE, DC, SA])** (Team Talk rubric)

100 = *Pouchet's experiments on spontaneous generation were under attack by Pasteur at the meeting at the Sorbonne, and I think Pouchet felt defensive of his work. I think Pouchet also didn't want Pasteur to win the support of other scientists because a large cash prize from the Sorbonne was at stake for proving whether spontaneous generation existed. I think that Pouchet should have listened to Pasteur's explanation and accepted that his own experiment was flawed. He could have helped end the debate about spontaneous generation sooner.*

90 = *Pouchet's tests on spontaneous generation were being questioned by Pasteur at the meeting at the Sorbonne, and Pouchet wanted to protect his ideas. He also didn't want other scientists to agree with Pasteur and allow him to win the prize from the Sorbonne. Pouchet should have listened to Pasteur's explanation and accepted that his own experiment had been flawed.*

80 = *Pouchet felt defensive about his experiments being called into question by Pasteur. It would have been better if he had tested Pasteur's ideas and accepted that he might have been wrong.*

3. What was the flaw in Pouchet's experiment? What concept of the scientific method do you think was important to proving that Pouchet's experiment was poorly designed? **[MI, RE]** (Team Talk rubric)

100 = *Pasteur discovered that the tub of mercury that Pouchet used in his experiment had dust in it, and the dust allowed microbes into the bottle which then grew mold. Pouchet assumed that there were no living microbes in the mercury, air, or water in the experiment. According to the text, the scientific method works best if the scientist designs an experiment that can be repeated by anyone and achieve the same result. Pasteur proved that Pouchet's experiment was not repeatable because if another scientist used mercury that had no dust in it, mold might not have developed in the bottle. This showed that Pouchet did not test his experiment enough or ask other scientists to test it and verify his results.*

90 = *Pasteur saw that the tub of mercury Pouchet used in his test had dust in it, and the dust allowed germs into the bottle which then grew mold. Pouchet thought that there was nothing alive in the mercury, air, or water. The scientific method works best if the scientist makes an experiment that can be repeated by anyone for the same answer. Pasteur proved that Pouchet's experiment was not repeatable because another scientist might use cleaner mercury.*

80 = *Pouchet's mercury had dust in it that allowed microbes to enter the bottle and grow mold. His experiment could not be reliably repeated by other scientists.*

*continued*

Team Talk Questions *continued*

4. Compared with Isaac Newton, Pasteur could be described as— **[RE, MI, SA]**  
(Team Talk rubric)

- A. similar in his desire to keep ideas to himself for development.
- B. *willing to collaborate and share ideas to advance science.*
- C. selfish about claiming the glory for disproving spontaneous generation.
- D. in agreement about using calculus to design experiments.

What evidence from the text supports this description?

**100** = *Pasteur **presented** his ideas about germs to an audience of more than 200 scientists, hoping to **gain acceptance** for his ideas over spontaneous generation. Once he had the **support** of a large portion of his fellow scientists, he used his ideas to advance food safety and medicine. He created the process of heating liquids to kill microbes, known as **pasteurization**, and developed **sterile surgery techniques** with Joseph Lister. Unlike Newton, who did not share his ideas with many people and slowed the development of calculus because of it, Pasteur used his ideas to work with others to create solutions for common problems.*

**90** = *Pasteur explained his ideas about germs to more than 200 scientists, hoping to get their support. With their support, he used his ideas to help food safety and medicine. He created the process of heating liquids to kill germs and created safe and clean surgery methods with Joseph Lister.*

**80** = *Pasteur shared his ideas about germs with other scientists, and once he had their support, he worked with others to develop solutions for common problems in food safety and medicine.*

5. What is an example of a microorganism? What is an example of a pathogen? Can a microorganism also be a pathogen? Explain your answer. **[CV]**

*An example of a microorganism is any small living thing that is invisible to our eyes, such as bacteria or algae. An example of a pathogen is anything that causes disease or sickness, such as bacteria or virus. A microorganism can be a pathogen when it is bacteria or another small living thing that causes sickness, but a microorganism might not always be a pathogen.*

4. Have students thoroughly discuss Team Talk questions before they write individual answers to the skill question marked “(Write).” Allow students to revise their written answers after further discussion if necessary.
5. Prompt teams to discuss comprehension problems and strategy use (their sticky notes), and important ideas that they added to their graphic organizers.
6. Circulate and give feedback to teams and students. Use rubrics to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
7. If some teams finish ahead of others, have them practice their fluency.
8. Award team celebration points for good team discussions that demonstrate 100-point responses.

Cue students to discuss strategy use and graphic organizers.

**Randomly select team representatives who will share:**

- strategy use
- oral and written Team Talk responses
- fluency selection



Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.



## Class Discussion tp

(15 minutes)

### Lightning Round

1. Use **Random Reporter** to have teams share strategy use, oral and written Team Talk responses, and fluency. Ask other teams to agree, disagree, or add on to responses.
2. Use rubrics to evaluate responses and give specific feedback. Award team celebration points for 100-point responses. Record individual scores on the teacher cycle record form.

### Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

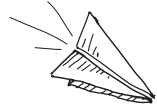
- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

## Lesson 5

**Writing Objective:** Establish and maintain a formal style.

**Teacher Background**

During this writing activity, students should be using the academic language that they are expected to use while writing Team Talk answers. They are writing in an informative style, which means their writing should be free of opinions.

**Active Instruction**

(10 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams discuss their vocabulary ratings.



Review Vocabulary Vault.

Teams review their cycle goal.

Post and present the writing objective.

Introduce the writing project.

**Partner Vocabulary Study**

1. Display the vocabulary words. Have students use the vocabulary study routine as they rerate their knowledge of each vocabulary word as they arrive for class.
2. Spot check the Read and Respond homework.

**Vocabulary**

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a "+" and a word the entire team rated with a "?."
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Award team celebration points.
3. Use **Random Reporter** to have teams share a new sentence that uses one of their vocabulary words. Award team celebration points.
4. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.

**Set the Stage**

1. Ask students to review their team's goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and writing objective.
4. **This cycle you have been reading informative texts about great feuds in science. These texts have presented facts about the scientists behind the feuds, what caused them, and what the outcomes of the feuds were. Today you will write an informative piece that establishes and maintains a formal style.**

**Remember that you can write in a formal or an informal style. Examples of writing informally are when you write a letter or an e-mail to a friend or when you write in a journal. Today you will write in a formal style. Your writing should be objective, or free from your own opinion and thoughts on the subject. It should contain formal language, like the language that you use when answering comprehension questions, rather than the casual language that you use when talking to your friends.**

5. Refer students to the following writing prompt in their student editions. Read the writing prompt aloud.

Read the prompt aloud.

Writing Prompt
Select one of the feuds that you read about this cycle in Rage or Reason? When Scientists Feud, and describe what the feud was about, who was involved, what their arguments were, and the outcome. Remember to use information and technical words from the text to describe the feud.



Students identify the purpose for writing.

Use **Think-Pair-Share** to ask:

**Read the prompt. What is it asking you to do: support a claim with reasons, explain ideas or information on a topic, or write a literary response? How do you know?**

*Explain ideas or information on a topic. I know this because the prompt tells me to describe a feud from the text with certain details. The prompt does not ask me to state a claim or an opinion and support it, or write a literary response.*

Refer students to the appropriate writer's guide in their student editions.

6. Refer students to the following writer's guide in their student editions. Point out that this guide for writing to inform or explain is the criteria for writing. Point out that using the writer's guide will help them write a quality response.

Writing to Inform or Explain	
<b>Ideas</b>	<ul style="list-style-type: none"> <li>• Clearly introduce the topic.</li> <li>• Develop the topic with relevant details.</li> </ul>
<b>Organization</b>	<ul style="list-style-type: none"> <li>• Begin by introducing the topic.</li> <li>• In the middle, provide facts, examples, or events that help a reader understand the information.</li> <li>• End with a closing statement that supports the information.</li> </ul>
<b>Style</b>	<ul style="list-style-type: none"> <li>• Use words and phrases that help a reader understand how the facts or events are related.</li> <li>• Include details or examples that help a reader make a mind movie.</li> </ul>
<b>Mechanics</b>	<ul style="list-style-type: none"> <li>• Use correct punctuation, capitalization, spelling, and grammar.</li> </ul>

Highlight the writing objective.

Briefly review the guide, noting the four aspects of writing: ideas, organization, style, and mechanics.

Use **Think-Pair-Share** to ask:

**Which guideline relates to our writing objective: to establish and maintain a formal style?**

*The style guideline. We should be using words from the text and other phrases to create a formal writing style.*

- Tell students that this 10-minute writing project is practice to prepare them to write a quality answer for the writing section (part II) of the cycle test. Remind them that this section of the test is worth one third of their test score.

### **Model a Skill**

- Remember that your objective for writing is maintaining a formal style, so when you revise your writing, make sure to correct instances where your writing is too casual, for example, when it contains opinions.**
- Display the following passage for students.

In the late 1600s, a feud between Isaac Newton and Gottfried Leibniz blew up over who was the first person to make calculus. Evidence shows that Newton made calculus in 1666, which is when he showed a paper on the subject to some guys. However, he didn't publish his work for whatever reason, and I think that really made him lose the chance to say he made calculus first.

Point out that this passage begins in a formal writing style, but then it becomes too casual. Use a Think Aloud to model revising the passage to be more formal.

#### Sample Think Aloud

Let me think about how I can edit this passage to maintain a formal style throughout. I think the last sentence needs revising because not only does the language become more casual, but it seems like the author inserts some of his or her opinion, which should not be in informative writing. I might edit the sentence to say "However, he failed to publish his work for reasons that historians still discuss today." I can delete the last half of the sentence because that is the author's opinion. I know from the text that Newton could prove that he had written about calculus, and the colleagues he discussed it with were witnesses, but his work was not widely known when Leibniz wrote about calculus.

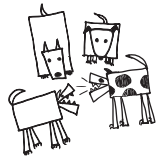
**tps**

- Use **Think-Pair-Share** to ask:

**Are there other examples of informal language or language that can be replaced with more precise words in the sample? What are they, and how could you edit them?**

*The phrase "blew up" could be replaced with erupted. You can replace the words make and made with the words invent and invented. You can replace the phrase "some guys" with coworkers or colleagues.*

Model revising writing to make it more formal.



## Teamwork tp

(20 minutes)

Students write for 10 minutes.

Monitor discussions as partners and teams give feedback.

Students revise and edit their writing projects.

### Independent Work

Tell students that they have 10 minutes to plan and write drafts of their responses to the writing prompt. Remind them to write on every other line to leave room for revisions. Suggest that they refer to the writing prompt to be sure that they include all the required elements and to the writer's guide to check the quality of their response.

### Team Discussion

1. Refer students to the peer feedback checklist in their student editions, and review how to get/give feedback.
2. Have students share their drafts in teams. Allow 5 minutes for students to revise their writing projects based on feedback and to edit them using the editing checklist in their student editions.
3. Have teams put their writing projects in a pile in the middle of their tables so a writing project can be randomly selected.



## Class Discussion tp

(30 minutes)

Display and evaluate randomly selected writing projects using the writer's guide.

### Lightning Round

Randomly select a writing project from one or two teams' piles without revealing their authors. Display a writing project, and read it aloud.

Refer students to the writer's guide for writing to inform or explain and the writing objective—to establish and maintain a formal style.

Using the writer's guide, discuss and evaluate the selected writing project(s) with the class.

For example, ask:

- **Does the writer introduce the topic clearly?**
- **Does the writer include facts and examples to help a reader understand the information?**
- **Does the writer end with a closing statement that supports the information?**
- **Does the writer use appropriate academic language and full sentences?**
- **Does the writer maintain a formal style and keep his or her language objective?**

Award points to teams whose writing projects meet the criteria. Record these points on the team poster.

### **Reflection on Writing**

Have students reflect on their use of the writing process. Ask:

**How did creating and using a graphic organizer work for you? How did it help you write your draft?**

*Answers will vary.*

**What was the most useful feedback that you received? How did it affect your revisions?**

*Answers will vary.*

**Did you find it easy or difficult to write formally and remain objective?**

*Answers will vary.*

### **Celebrate**

Celebrate team successes!

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

The top team chooses a cheer.

2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Remind students of the Read and Respond homework assignment.



## Writing Prompt

Select one of the feuds that you read about this cycle in *Rage or Reason? When Scientists Feud*, and describe what the feud was about, who was involved, what their arguments were, and the outcome. Remember to use information and technical words from the text to describe the feud.

Writing to Inform or Explain	
<b>Ideas</b>	<ul style="list-style-type: none"> <li>Clearly introduce the topic.</li> <li>Develop the topic with relevant details.</li> </ul>
<b>Organization</b>	<ul style="list-style-type: none"> <li>Begin by introducing the topic.</li> <li>In the middle, provide facts, examples, or events that help a reader understand the information.</li> <li>End with a closing statement that supports the information.</li> </ul>
<b>Style</b>	<ul style="list-style-type: none"> <li>Use words and phrases that help a reader understand how the facts or events are related.</li> <li>Include details or examples that help a reader make a mind movie.</li> </ul>
<b>Mechanics</b>	<ul style="list-style-type: none"> <li>Use correct punctuation, capitalization, spelling, and grammar.</li> </ul>

## Lesson 6

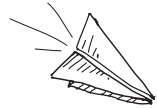
**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

**Writing Objective:** Establish and maintain a formal style.

### Teacher Background

Today's cycle test challenges students to make connections between the feuds of different scientists and how those feuds have affected scientific developments today.

Today students will read about three feuds in which the words and methods used to argue were particularly personal or harmful to the careers of the scientists involved. Some of the feuds were settled, but one, the feud over evolution, is still going strong today between conservative religious groups and scientists.



## Active Instruction

(5 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams review their cycle goal.

Post and present the reading and writing objectives.

Review Vocabulary Vault.

### Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rerate their knowledge of each vocabulary word as they arrive for class.
2. Spot check the Read and Respond homework.

### Set the Stage

1. Ask students to review their team's goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading and writing objectives.
4. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.



# Prepare Students for the Test tp

(5 minutes)

tps

## Partner Review

1. Remind students that they have been practicing using strategies to help identify important information and the relationship of ideas and establishing and maintaining a formal style. Use **Think-Pair-Share** to ask:

**What strategies have you used to make connections between people, ideas, and events from the texts that you read this cycle?**

*(Answers may vary.) I have made connections between the feuds and the people involved in them to understand how feuds are similar or how the scientists involved have similarities and differences that cause their feuds.*

Tell students that they will use these skills as they take the cycle test.

2. Have partners review their notes for this cycle. Allow 2 or 3 minutes for this activity.

## Test Directions

1. Remind students that the test is independent work. Students should not ask their partners for help as they read, but they may use sticky notes if they would like.
2. Distribute the test so students can preview the questions. Point out that some of the test questions are multiple choice for which they will choose the best answer. Other questions require them to write a short answer or create a graphic organizer. Part II of the cycle test requires them to write a long answer. Remind them that their writing project was practice for writing the long answer for part II of the test.
3. Point out that questions #3, #4, and #5 ask about the relationship of ideas.
4. Ask students to identify key words or phrases in question #3.

3. Isaac Newton and Gottfried Leibniz were contemporaries of Thomas Hobbes and John Wallis. How were the feuds between these men different? What does that tell you about the state of mathematics in the seventeenth century? Support your answer. **[RE, SA]**

5. Introduce the text that students will read. Tell what it is about, but do not give additional information or details.

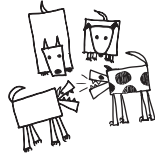
**Today you will read more about some notable feuds in science.**



## Test tp

(30 minutes)

Tell students that they have 30 minutes for the test and that they may begin. Give students a 5-minute warning before the end of the test.



## Teamwork tp

(10 minutes)

### Team Discussion

Teams discuss the answers to the test questions.

1. Pass out a colored pen to each student.
2. Explain or review, if necessary, the student routine for team discussions after the test.
3. Have teams discuss their answers to the test questions. As you monitor team discussions, ask additional questions to prompt their thinking about the important ideas in the reading and about the skills and strategies that they have been using.



## Class Discussion tp

(10 minutes)

### Lightning Round

Random Reporters share team discussion of a test question.



1. Use **Random Reporter** to have teams share team discussions of the test questions and explain their thinking.
2. Award team celebration points.
3. Collect test answers. Score original answers, and add extra points for improved answers.

### Celebrate

Celebrate team successes!

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.

The top team chooses a cheer.

2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Remind students of the Read and Respond homework assignment.

## Cycle 1 Test

## Make Connections

**Directions:** Read “Fighting Words,” pages 32 and 33. Use the TIGRRS process, and answer the following questions on a separate piece of paper. Some of the questions are based on today’s reading, and other questions are about the text that you read in previous lessons. You may refer to your notes from this cycle.

**Part I. Comprehension** (100 points)

1. What is the topic?

*5 points = The topic is words that scientists use to argue with one another.*

What is the author’s intent?

*5 points = To inform readers about how scientists argue their points and get into feuds with fellow scientists who do not agree with them.*

Write a short summary of the text. Include the graphic organizer or notes that you used to organize the information and your thoughts. **[MI, AP]**

*10 points = Scientists have always argued about their theories and ideas, but sometimes those feuds led to name calling and insults. Thomas Hobbes and John Wallis argued about whether geometry had more merit than algebra through published writings. Charles Darwin’s biggest supporter, Thomas Huxley, held a public debate with Samuel Wilberforce over the validity of evolution. People still argue about evolution today. Paleontologists Othniel Charles Marsh and Edward Drinker Cope fought over who was first to discover different species of dinosaurs in a very public debate.*

2. How does the author of “Lab Wars,” pages 6–9, feel that feuds about scientific thoughts are affected by modern technology such as the Internet? **[AP]**

*20 points = The author of “Lab Wars” points out that many scientists can now publish their research on the Internet before it has been peer reviewed. This may cause feuds and arguments to happen quickly because scientists will attack the publishing scientist if his or her information is misleading or incorrect. Since you can react immediately to information on the Internet, the attacks may be impolite or personal and are available to a wide audience of readers. The author thinks that people should take time to reflect on what they have read before reacting so their criticisms are calm and rational rather than mean-spirited.*

*15 points = The author of “Lab Wars” says that many scientists can now put their research on the Internet before it has been read by other scientists. Scientists may attack the information if it is misleading or incorrect. Since you can react immediately to information on the Internet, the attacks may be impolite or personal and are available to a lot of people.*

*10 points = Scientists can put their research on the Internet before having other scientists read it, which means information may be incorrect. Other scientists may attack the research for a lot of people to see.*

3. Isaac Newton and Gottfried Leibniz were contemporaries of Thomas Hobbes and John Wallis. How were the feuds between these men different? What does that tell you about the state of mathematics in the seventeenth century? Support your answer. **[RE, SA]**

*20 points = Isaac Newton, Gottfried Leibniz, Thomas Hobbes, and John Wallis were all feuding about mathematics, but their reasons were different. Newton and Leibniz were feuding over who **invented** calculus first and about whose **system** of calculus was better. Thomas Hobbes was arguing that geometry had more **merit** than the newly invented algebra that John Wallis **supported**. Wallis eventually **proved** that Hobbes could not solve a puzzle of creating and measuring a square that could contain the **exact** area of a circle using geometry. These feuds tell me that certain **mathematical** processes were still new and being debated at the time. **Not everyone agreed on what certain types of mathematics should look like.***

*15 points = Isaac Newton, Gottfried Leibniz, Thomas Hobbes, and John Wallis were all feuding about math, but their reasons were different. Newton and Leibniz were arguing over who created calculus first and about whose way of doing it was better. Thomas Hobbes was arguing that geometry was better than algebra, which John Wallis supported. Wallis showed that Hobbes could not use geometry to solve a puzzle of creating and measuring a square that could contain the exact area of a circle. Some types of math were still new and being argued about at the time.*

*10 points = Isaac Newton and Gottfried Leibniz were arguing about who created calculus first. Thomas Hobbes and John Wallis were arguing about the usefulness of geometry. Some types of math were still being argued about at the time.*

4. Which of the following best describes the acceptance of evolution in the 1860s? **[RE, DC, SA]**
- Most scientists did not accept it, but religious leaders embraced it.
  - It was not widely accepted by all scientists.*
  - Everyone accepted it from the moment Charles Darwin introduced it.
  - It was immediately disregarded as false information.

How has this changed in modern times? Support your answer with evidence.

*20 points = The **controversy** about evolution has outlived the 1860s, but the support of it has changed. **According to the text**, when the theory was new, it **outraged** Christian leaders and **devoutly** religious scientists. They did not accept this new theory that species changed slowly over time through natural selection. **The text says** that evolution is **universally accepted** by scientists today. I think that means that even scientists who are religious accept evolution. **That means the debate is now between scientists and devout Christians.***

15 points = *The disagreement over evolution is still happening, but the support of it has changed. When the idea was new, it angered Christian leaders and religious scientists. They did not accept this new theory that species changed slowly over time through natural selection. Today evolution is generally accepted by scientists.*

10 points = *When the idea of evolution was new, it angered Christian leaders and scientists alike. Now most scientists support evolution, leaving the debate between them and devout Christians.*

5. How did the feud between paleontologists Othniel Charles Marsh and Edward Drinker Cope have an effect on their professional or working lives? Why do you think this happened? Support your thinking. **[RE, DC, SA]**

20 points = *The feud between Othniel Charles Marsh and Edward Drinker Cope had a **negative effect** on both of their **careers**. They insulted each other **publicly**, such as when Marsh pointed out that Cope had put the skull of a dinosaur on its tail instead of its neck. Cope's mistake **singed** his professional **reputation** as a paleontologist. I think Marsh's harsh criticism of Cope made Marsh lose his **position** at the United States Geological Survey two years later. I don't think people liked that two scientists who were working toward the same goal fought so publicly. Their **rivalry** to be the better scientist should not have been more important than the discoveries they were making.*

15 points = *The disagreement between Othniel Charles Marsh and Edward Drinker Cope did not help their jobs. They insulted each other in public, such as when Marsh said that Cope had put the skull of a dinosaur on its tail instead of its neck. Cope's mistake made people think less of his work. I think Marsh's insults made him lose his job at the United States Geological Survey. I don't think people liked that two scientists who worked on the same things fought so much.*

10 points = *Their feud hurt their jobs by damaging their reputations and causing them to lose their jobs. People did not like their public feud.*

## Part II. Writing (100 points)

Write at least a paragraph to answer the following question:

Select two of the feuds that you read about during the cycle, and describe at least one way that they are alike. Remember to accurately describe the feuds using language found in the text.

*The feuds between Louis Pasteur and Félix Pouchet and between Othniel Charles Marsh and Edward Drinker Cope have something in common. Both of these feuds ruined the reputation of at least one scientist involved. According to the text "Germ Warfare: Showdown in a Paris Theater," Pouchet was worried that his reputation as a scientist would be in trouble if Pasteur's theory was accepted by other scientists. In the end, Pasteur was proven correct, and his theory is still accepted today, whereas Pouchet's theory is not. Cope's career was sorely damaged when Marsh pointed out Cope's mistake of attaching the head of an Elasmosaurus to the tail of its body rather than to the neck. His career did not recover from this very public and monumental error. In both of these feuds between scientists, there was a clear winner and loser.*

The following guide is used to score part II of the cycle test.

Writing to Inform or Explain		
<b>Ideas</b>	<ul style="list-style-type: none"> <li>Clearly introduces the topic</li> <li>Develops the topic with relevant details</li> </ul>	<b>0–25 pts.</b>
<b>Organization</b>	<ul style="list-style-type: none"> <li>Begins by introducing the topic</li> <li>In the middle, provides facts, examples, or events that help a reader understand the information</li> <li>Ends with a closing statement that supports the information</li> </ul>	<b>0–25 pts.</b>
<b>Style</b>	<ul style="list-style-type: none"> <li>Uses words and phrases that help a reader understand how the facts or events are related</li> <li>Includes details or examples that help a reader make a mind movie</li> </ul>	<b>0–25 pts.</b>
<b>Mechanics</b>	<ul style="list-style-type: none"> <li>Uses correct punctuation, capitalization, spelling, and grammar</li> </ul>	<b>0–10 pts.</b>
<b>Writing Objective</b>	<ul style="list-style-type: none"> <li>Establish and maintain a formal style.</li> </ul>	<b>0–15 pts.</b>

**Part III. Vocabulary** (100 points)

- “But [Charles Darwin’s] contemporary, the influential anatomist and paleontologist Richard Owen, believed that evolution was a product of *divine influence*.” In this sentence on page 8, the word *contemporary* most nearly means— **[CV]**
  - one who is more modern and advanced.
  - one who supports arguments made by a friend.
  - one who disagrees with another’s ideas.
  - one who lives during the same time as another.*

- The vocabulary word *transmission* comes from the Latin word root *trans-*, meaning across. How does the meaning of *trans-* relate to the meaning of *transmission*? **[CV]**

*The meaning of the root relates to the word transmission because a transmission has to be sent across something to reach the other person with whom you are communicating. For example, you can send information across phone lines or radio waves.*

- Mrs. Gottweiler was nominated as national teacher of the year, one of the most \_\_\_\_\_ awards that a teacher can win in his or her career.

Choose the word that belongs in the blank. **[CV]**

- contemporary
- devising
- prestigious*
- universally



4. The vocabulary word *pathogens* has the Greek roots *patho-*, meaning suffering or feeling, and *gen-*, meaning birth or start. How does the meaning of these roots relate to the meaning of *pathogens*? **[CV]**

*I know that pathogens are disease-producing agents, such as bacteria, so this relates to the roots because the word pathogen could be defined as the birth or start of suffering. Pathogens are what make you start to feel sick.*

5. In which of the following sentences is the word *universally* used incorrectly? **[CV]**
- A. The children in the classroom universally raised their hands when asked who would like to go outside for recess on the bright sunny day.
  - B. We would not adopt a dog at the shelter unless we universally agreed upon which one we wanted to take home.
  - C. The company advertises that its credit card is universally accepted at all stores.
  - D. *I universally choose vanilla or sometimes chocolate ice cream when we go to the store, but occasionally I will buy strawberry too.*
6. Which of the following is not an example of a *microorganism*? Explain why. **[CV]**
- A. eye-infection bacteria
  - B. *a household pet*
  - C. the cold virus
  - D. microscopic dust mites

*Microorganisms are creatures that are too small to be seen by the naked eye. I need a tool, such as a microscope, to see them. Of the choices, a house pet is the only one that I know can be seen without help from a microscope.*

7. Write a meaningful sentence using the word *devising*. **[CV]**

*Accept responses that show that the student knows the meaning of the word and can use it correctly. For example: My brothers and I began devising how to convince our mom to take us to the amusement park for the day instead of making us do chores.*

8. The word *egoists* has the Latin root *ego*, meaning I. How does the meaning of *ego* relate to the meaning of *egoist*? **[CV]**

*An egoist is someone who is self-centered, which means that person only thinks about himself or herself. I think an egoist would use the word I a lot because he or she would be talking about himself or herself all the time.*

9. There was an interruption in the radio \_\_\_\_\_ and we didn't hear the final score of the game.

Choose the word that belongs in the blank. **[CV]**

- A. microorganism
  - B. *transmission*
  - C. inception
  - D. collision
10. As used in the passage "That same year, British surgeon Joseph Lister uses Pasteur's ideas to sterilize operations. The patient mortality rate drops from 50 to 15 percent" on page 23, *mortality* most nearly means— **[CV]**
- A. recovery.
  - B. satisfaction.
  - C. *death*.
  - D. return.

Explain how you figured out the meaning of *mortality*.

*I figured out the meaning by using the context and my own knowledge. Joseph Lister was a surgeon, and I know that surgery can be dangerous, and that even today, people can die in surgery. I know that sterilizing operations makes them safer, so patients are less likely to die in surgery.*

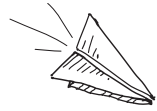
Question Codes			
<b>[DC]</b>	Make inferences; interpret data; draw conclusions.	<b>[AA]</b>	Analyze an argument.
<b>[SA]</b>	Support an answer; cite supporting evidence.	<b>[AP]</b>	Identify author's intent or purpose.
<b>[MI]</b>	Identify the main idea that is stated or implied.	<b>[RE]</b>	Analyze relationships (ideas, story elements, text structures).
<b>[CV]</b>	Clarify vocabulary.	<b>[AC]</b>	Author's craft; literary devices

## Lesson 7

**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

### Teacher Background

During Class Discussion, students orally present evaluations of their homework reading selections. During Teamwork, students use their Read and Respond notes and answers to the homework questions to make final preparations for these presentations. Team members share their responses and give one another feedback. During the oral presentations, students use their revised responses to the questions to describe the kind of texts they read, the strategies that helped them understand the text, and whether they will recommend their reading selections to others.



## Active Instruction

(20 minutes)

### Two-Minute Edit

1. Display and have students complete the Two-Minute Edit as they arrive for class.
2. Use **Random Reporter** to check corrections. Award team celebration points.

### Vocabulary

Ask teams if they have a Vocabulary Vault word that they would like to share. Award team celebration points.

### Set the Stage

1. Ask students to review their team's goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Have students get out their reading selections and Read and Respond forms. Remind them that today, with the help of their teams, they will each prepare a presentation about their individual reading selections.

Challenge students to think about the strategies and skills that they used to read their self-selected texts, share their answers to the Read and Respond questions, discuss their thinking, and prepare evaluations of their selections.

4. Remind students to add to the notes on their Read and Respond forms as they discuss their selections and prepare oral presentations about their selections. Students will use their answers to the questions on the Read and Respond form as the basis for their presentations.

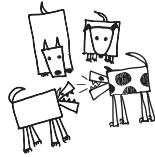
Two-Minute Edit



Vocabulary Vault

Teams review their cycle goal.

Connect the cycle objective to students' homework reading selections.



# Teamwork tp

(25 minutes)

## Team Discussion

1. Tell students that they will use the Read and Respond questions as a guide as they discuss their homework reading and prepare evaluations of their reading selections to share with their teams.
2. As students prepare their answers, check in with those students for whom you do not have individual scores for graphic organizer/notes, written Team Talk responses, and/or a fluency score. Have them show you examples from the cycle. Point out areas of success, and give feedback to improve student performance.
3. As you visit teams, take this opportunity to check students' homework for completion (Read and Respond forms). Enter the information on your teacher cycle record form.

### Teacher's Note:

Have students who are ready for a new selection take turns choosing reading material from the classroom library. Make sure that every student has a Read and Respond form for next cycle.

Students prepare, share, and revise presentations about their reading selections.

Give students feedback on classwork.

## Read and Respond Questions

<b>1.</b>	Is your selection informational or literature? Summarize your reading. (summary rubric)
<b>2.</b>	Why did you choose this reading? What is your purpose for reading? (Team Talk rubric)
<b>3.</b>	Choose a word, phrase, or passage that you did not understand at first. How did you figure it out? (strategy-use rubric)
<b>4.</b>	Write down a question that you had or a prediction that you made as you read. Were you able to answer or confirm it? Explain. (strategy-use rubric)
<b>5.</b>	Would you recommend this selection to others to read? State your opinion, and support it with reasons. (Team Talk rubric)
<b>6.</b>	Choose a short section of the text that you think is important or especially interesting. Tell your teammates why you chose it. Read it aloud smoothly and with expression. (fluency rubric)



# Class Discussion tp

(15 minutes)

Team responses  
and feedback



Teams report on their  
review of the texts and Read  
and Respond discussions.

Celebrate team successes!

Final tally for this cycle

Record team celebration  
points on the teacher cycle  
record form.

Collect Read and Respond  
forms for this cycle.

## Lightning Round

Use **Random Reporter** to have students present their evaluations of their homework reading selections (responses to the Read and Respond questions). Use rubrics to evaluate responses, give specific feedback, and award points.

## Celebrate

1. Tally up this cycle's points on the poster.
2. Tell students that their scored tests will be returned at the beginning of the next lesson. Poster points and the teams' test scores will determine which teams earn the status of super team, great team, or good team for the cycle.
3. Be sure to record each team's total celebration points from the poster into the teacher cycle record form. Remind students that team celebration points and team test averages are used to determine team scores.
4. Collect students' Read and Respond forms, and pass out new forms.
5. Tally up the number of Read and Respond signatures on students' forms, and record the number on the teacher cycle record form after class.

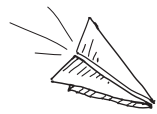
## Lesson 8

**Objectives:** Celebrate successes, and set new goals. Hold a Class Council meeting.

### Teacher Background

In the first part of this lesson, students review their test results and their final scores for the cycle and compare them with their goals. They celebrate success and set new goals for further improvement.

In the second part of the lesson, students participate in Class Council.



## Active Instruction

(2 minutes)

### Two-Minute Edit

1. Display and have students complete the Two-Minute Edit as they arrive for class.
2. Use **Random Reporter** to check corrections. Award team celebration points.



## Celebrate/Set Goals

(20 minutes)

1. Distribute students' scored cycle tests. Allow a few moments for students to review them.
2. Distribute team score sheets to teams and celebration certificates to students. Remind students that the cycle's top-scoring teams are determined by their points on the poster and their test scores.
3. Recognize and celebrate the super, great, and good teams. Remind the teams of the impact of bonus points that are added to team members' cycle scores.
4. Have each team discuss and set a goal for the next cycle and record it on their team score sheet. Use the questions below to analyze and discuss the students' scores.

**What was your team's highest score?**

**What score do you want to improve?**

**What can the team do to improve that score?**

Two-Minute Edit



Distribute scored cycle tests.

Distribute team score sheets and celebration certificates.

Class celebration! Celebrate team successes with a class cheer.

Each team sets a team goal for the next cycle.



Use **Random Reporter** to ask:

**What is your team's goal for the next cycle? Why did you choose that goal?**

*Accept supported answers.*

5. Use the poster to award team celebration points for responses that include the team's reasons for choosing the goal, thus beginning the accumulation of points for the next cycle.
6. Have students record their cycle test scores and their areas of greatest strength and improvement on their progress charts.



## Class Council

(30 minutes)



1. Share class compliments.
2. Review the class goal that was set at the last Class Council. Using the agreed-upon measure of progress, was the goal met? Why or why not?
3. Discuss a class concern, or use the scenario and discussion hints provided.
4. Have teams discuss and then use **Random Reporter** to share responses.
5. After debriefing how they resolved the problem, help students set a goal and a measure of progress that they can use at the next Class Council.

**Scenario:** Every day Collin promises his teammates that he will do his reading homework. But when he gets home, he turns on the TV, and pretty soon he just doesn't feel like reading. Does this ever happen to you? What can Collin do to keep his promise? What can Collin's teammates do to help?

### Discussion Hints:

- Connect small, short-term goals with long-term goals.
- It is easy to feel overwhelmed by all the demands of the school day. Help students set team goals that are clearly defined and easily met. For example, we will use the strategy rubric to make sure that we have clarified every team member's sticky-note problems. We will be ready to earn points for strategy use every day this cycle.
- Collin's predicament is a common one. Help students brainstorm ways to help and support one another and put first things first so they can meet short-term goals. Help students choose materials that interest them so they will be more likely to read every day.
- Help students track their progress so they can see how meeting daily and weekly goals will ensure that the whole team will meet its quarter goal or semester goal of moving up a level or two.



## Brain Game

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(5 minutes)

1. Choose a brain game from the card set, and then play the game.
2. Use the following questions to debrief and remind students of self-regulatory strategies:

**What did this game require your brain to do?**

**How will use of this skill improve your success in other classes?**



## Cycle 2:

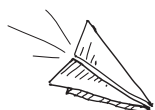
Make  
Connections

## Lesson 1

**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

**Teacher Background**

Today students will read about the feud between the Roman Catholic Church and Galileo Galilei in the early 1600s. This was not a feud between scientists, but between theology and science and respected leaders in both fields.

**Active Instruction** tp

(22 minutes)

**Big Question**

Post and present this cycle's Big Question. Have students write a response to the question as they arrive for class.

**The Big Question:** Is there a limit to how much pride you should take in yourself or your work?

**Set the Stage** tp

1. Refer students to today's Big Question. Use **Think-Pair-Share** to ask:

**Is there a limit to how much pride you should take in yourself or your work?**

*Everyone should be proud of the good things he or she does, but you can become too proud. If you are too proud to accept that other people's ideas about your work might have merit or that your work might be flawed or need improvement, then you are being arrogant. You should be proud, but you need to accept that other people may also be right or that they may see something you don't see. You need to be willing to listen to other people.*

**You read about several feuds in the last cycle. How did pride play into those feuds?**

*In many of those feuds, scientists did not want to admit that their work might be wrong or that others might be able to improve on their results. For example, Félix Pouchet and his supporters continued to argue for spontaneous generation even though Louis Pasteur provided a lot of evidence showing that the idea was wrong. Pride in their work also probably led many scientists to publish their ideas for others to read and research.*

Students write responses to the Big Question.

Discuss the Big Question.



Teams review their cycle goal.

Post and present the reading objective.

Refer students to pages 14–16 in the text.

Begin the TIGRRS process; review the steps as needed.

Students predict the topic and author’s intent and choose a graphic organizer.

Build background about Galileo.

2. Ask students to review their cycle goal. Remind students how to earn team celebration points. Remind them that team celebration points help them to become super teams. Tell them that they can earn team celebration points during the Lightning Round.
3. Introduce the texts, authors, and reading objective.

**Teacher’s Note:**

Although this text is a dialogue, or conversation, it is being treated as an informational text. Direct students as needed to identify clues within the text that show this is informational text.

4. Have students preview today’s text. Use **Think-Pair-Share** to ask:

**Is this literature or informational text? How do you know?**

*This text is informational. The historical notes and text box are evidence that the text is informational.*

5. Refer students to the next steps in the TIGRRS process. Use **Think-Pair-Share** to have students predict the topic and identify clues and predict the author’s intent. Randomly select a few students to share.
6. Use **Think-Pair-Share** to ask:

**Which graphic organizer(s) will work best with this text? Why?**

**T:** A feud between a man named Galileo and Pope Urban

**I:** To inform the reader about the argument between these two men and who won the argument

**G:** A web to record the important ideas and supporting details

7. (Optional) If you have access to the Internet, watch the following video for background information on Galileo (stopping at 4:25):  
[www.pbslearningmedia.org/content/ess05.sci.ess.eiu.galileosys](http://www.pbslearningmedia.org/content/ess05.sci.ess.eiu.galileosys).

Explain to students that in ancient and medieval times, most people believed that the universe was geocentric, or that Earth was the center of the universe, and everything—the moon, the sun, the other planets, and the stars—moved around it. This model of the universe was complicated because the planets did not always move in ways that made sense if they were traveling around Earth.

In the mid-1500s, Nicolas Copernicus proposed the idea for a heliocentric, or sun-centered, universe which explained the movement of celestial objects much better than the geocentric system. His ideas were not widely accepted at the time, and some astronomers even tried to create systems that were a compromise between geocentric and heliocentric systems.

8. Tell students that aside from Galileo’s feud with the Roman Catholic Church, he is most famous for his telescopes, which allowed him to look deeper into the night sky than people had ever looked. With his telescopes, he was able to make detailed drawings of the moon, showing for the first time that the moon was full of deep craters, mountains, and valleys. He also discovered four of Jupiter’s moons, proving that objects could rotate around other objects and not just around Earth.

### Interactive Read Aloud

1. Refer to the reading objective, and review the skill if necessary.
2. Tell students that you will take the next step in the TIGRRS process: read and restate. Read “In the Garden: A Famous Futile Feud,” page 14 (paragraph 5) aloud. Use **Think-Pair-Share** to prompt use of the skill or strategy.

**Based on what I read, is this the first time that Galileo has been in trouble? How can you tell?**

*No. Pope Urban asks Galileo how long it has been since a cardinal advised Galileo to stop teaching Copernican theories. It seems like Galileo was already told once before that his ideas were troublesome.*

**What do you think might make Galileo similar to other scientists that you have already read about?**

*He was proud and stubborn like other scientists. He had already been in trouble for teaching about a sun-centered universe, which was controversial at the time. He must have continued to teach about it even though he was warned that it could get him into trouble.*

3. Partner Practice: Student partner pairs use the read-aloud/think-aloud process to practice the skill or strategy with the next passage in the text.

Have students read pages 14 (paragraph 6) and 15 (ending at paragraph 1).

Use **Think-Pair-Share** to ask:

**How does Galileo feel about the cardinal’s words to him? What does this say about Galileo?**

*I think Galileo is still upset about what the cardinal said to him about teaching Copernican ideas. According to the text, Galileo could be burned at the stake or hanged for teaching about a sun-centered universe. It tells me that Galileo is confident about his research and that he is correct. He is continuing to teach about a sun-centered universe even though he could die for his ideas. Galileo is proud, and he does not want others to contradict his work.*

Use **Random Reporter** to debrief.



**Teacher:** Read aloud.

**Students:** Practice the skill or strategy.

**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill/strategy.

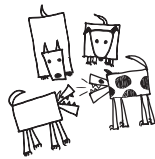
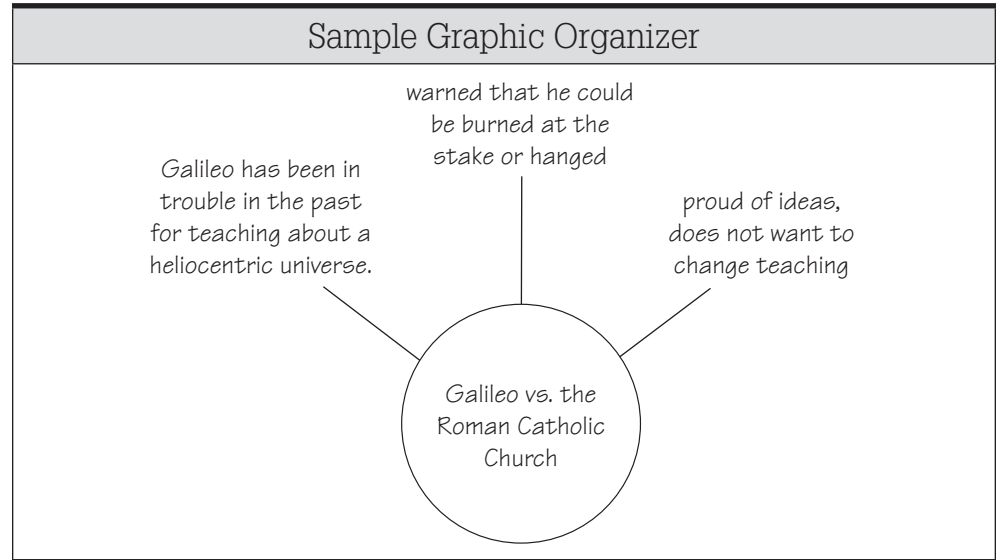


**Partner pairs:** Review, reread to clarify, and add to the graphic organizer.

4. Refer students to the next step in the TIGRRS process: reread and review. Ask partners to review this section of text, check their understanding with each other, reread what they need to clarify, and add notes to their graphic organizers.

Use **Random Reporter** to debrief. Add student responses to the graphic organizer.

A sample graphic organizer follows.



## Teamwork tp

(20 minutes)

### Partner Prep

1. Explain, or review if necessary, the student routines for partner reading, fluency, and the TIGRRS process before having students read and restate: sr  
**pages 14–16 aloud with partners.**
2. Circulate and check for comprehension, evidence of strategy use, and use of the TIGRRS process, for example, restating ideas on the graphic organizer. Give students feedback. Prompt and reinforce their discussions.
3. If some partners finish ahead of their teammates, have them begin looking over the Team Talk questions.

Cue students to use their student routines for partner reading, fluency, and the TIGRRS process.

Cue students to use their student routines for strategy use and Team Talk discussion.

### Team Discussion

1. Explain, or review if necessary, how to use role cards and the student routines for strategy use and Team Talk discussion. **Sf**
2. Remind students to use the rubrics on their team folders to prepare each team member to discuss the team's strategy use, oral and written Team Talk responses, and fluency. Each team member must be able to summarize the text and discuss the team's graphic organizer/notes during Class Discussion as indicated.
3. Preview the Team Talk questions. If necessary, ask questions to guide students' reflection as they determine the meaning of the "(Write)" question.

#### Team Talk Questions

1. On pages 14 and 15, how does the author make the characters Pope Urban VIII and Galileo Galilei sound through their dialogue and the italicized narration? Toward which character do you think you should feel more sympathetic? Support your thinking. **[AC]** (Team Talk rubric)

**100** = *The author describes Galileo as **imposing**, with a large **stocky** figure, a round jovial face, a beard, and piercing eyes. **In the narration**, his voice is described as booming, rich, overblown, and **theatrical**. He seems hotheaded and angry when he mumbles under his breath in the dialogue. Meanwhile, the pope is described as **feeble** but **stately**. He is polite in the **dialogue** and seems **apologetic** to Galileo. I think the author wants me to feel more sympathy for the pope. The pope is asking Galileo to be patient and understanding of the **verdict** against him, and he tells Galileo how he can stay out of further trouble with the church. **This makes it seem like I should feel sorry for the pope, while Galileo gets angry and utters insults.***

**90** = *Galileo is an impressive character with a large figure, a round, happy face, a beard, and piercing eyes. His voice is booming, rich, overblown, and theatrical. He seems angry when he mumbles under his breath. The pope looks weak, but dignified. He is polite and seems apologetic to Galileo. I think the author wants me to feel more sympathy for the pope, who wants Galileo to be understanding and stay out of trouble.*

**80** = *Galileo seems impressive, large, and loud compared with the pope, who seems weak, but dignified. The pope seems to want Galileo to stay out of trouble and follow the rules.*

*continued*

Team Talk Questions *continued*

2. What happened to Galileo in 1643? How do you think things might have turned out for Galileo if Pope Urban VIII had not been misinformed or if Galileo had been allowed to explain his book to the pope? Support your thinking. **(Write) [RE, DC, SA]** (Team Talk rubric)

100 = Galileo was put under house arrest for writing his book *Dialogue and for writing about Earth's movement around the sun as fact rather than as a hypothesis*. I think Galileo could have **avoided** house arrest if Pope Urban VIII hadn't been **misinformed** about what was in the book. He was told that the **simpleton** character, named Simplicio, was a **reference** to him. This made Pope Urban VIII angry and less willing to help Galileo. I know that Pope Urban VIII had tried to help Galileo before and that he admired Galileo's studies. This shows that the pope's injured pride got in the way of listening to a friend and helping him avoid trouble.

90 = Galileo was put under house arrest for writing his book *Dialogue and for writing about Earth's movement around the sun as fact rather than as an idea*. I think Galileo could have stayed free if Pope Urban VIII knew what was really in the book. He was told that the foolish character, named Simplicio, represented him. Pope Urban VIII was angry, so he probably did not try to help Galileo as much as he could have.

80 = Galileo was put under house arrest for stating that Earth moves around the sun. Pope Urban VIII did not help him because he thought Galileo was making fun of him in the book.

3. Which of the following best describes how Pope Urban VIII and Galileo changed by the end of the text? **[RE, DC]** (Team Talk rubric)
- A. Galileo could overpower the pope.
  - B. Pope Urban VIII was more understanding of Galileo's theories.
  - C. Pope Urban VIII was stronger than Galileo.
  - D. Galileo agreed with the pope that Earth was the center of the universe.

Pope Urban VIII had the earlier dialogue with Galileo in 1624, one year after he became pope. His dialogue with his advisor happened eight years after becoming pope. How do you think this affected his behavior toward Galileo?

100 = I think the pope was stronger in his **position** after being in power for eight years. When he first became pope, he was understanding toward Galileo and told him that he would never have asked Galileo to be punished or threatened. He told Galileo what to do to **avoid** trouble with the church. I think he wanted to seem **just** and to **please** an important man like Galileo. Eight years later, he is angry at Galileo and refuses to let him explain his book. He is angry and insulted by Galileo, **though according to the text**, Galileo did not mean to insult him. This shows that after eight years, Pope Urban VIII had become more powerful and important than when he first was elected pope.

*continued*

Team Talk Questions *continued*

*90 = I think that the pope was stronger after being in power for eight years. He was understanding toward Galileo and told him that he would never have asked Galileo to be punished or threatened. He told Galileo what to do to stay out of trouble. He wanted to seem fair and to please Galileo. Eight years later, he is angry at Galileo and does not let him explain his book.*

*80 = After eight years of being in power, Pope Urban VIII was much more powerful and unwilling to be insulted by Galileo. When he was new to his position as pope, he was willing to be understanding and fair, but not after gaining more power.*

4. Stephan James O’Meara used real quotes from Pope Urban VIII and Galileo to create their dialogue in the text, though the text itself is not a record of their conversations. What do you think could be the problem with authors using quotations out of context in their writing? Support your thinking. **[AC, DC]** (Team Talk rubric)

*100 = By using **quotations** out of context in their writing, authors could create **bias** in their readers or insert their own bias into the text. It is sometimes hard to understand what someone means when their words are taken out of context by others. Stephan James O’Meara could have used the quotes to make Galileo seem more **imposing** or angrier than he really was or to make Pope Urban VIII seem friendlier and more understanding than he really was. **By selecting words and taking them out of context, an author can indirectly insert his or her opinion into his or her work.***

*90 = By using words out of context in their writing, authors could influence their readers’ feelings or insert their own feelings into the text. Stephan James O’Meara could have used the quotes to make Galileo seem angrier than he really was or to make Pope Urban VIII seem friendlier than he really was.*

*80 = When authors use quotes out of context, they can insert their own opinions and feelings into their writing and influence readers to agree with their opinions.*

4. Have students thoroughly discuss Team Talk questions before they write individual answers to the skill question marked “(Write).” Allow students to revise their written answers after further discussion if necessary.
5. Prompt teams to discuss comprehension problems and strategy use (their sticky notes), and important ideas that they added to their graphic organizers.
6. Circulate and give feedback to teams and students. Use rubrics to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
7. If some teams finish ahead of others, have them practice their fluency.
8. Award team celebration points for good team discussions that demonstrate 100-point responses.

Cue students to discuss strategy use and graphic organizers.



**Randomly select team representatives who will share:**

- strategy use
- oral and written Team Talk responses
- fluency selection



Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.



# Class Discussion tp

(18 minutes)

## Lightning Round

1. Use **Random Reporter** to have teams share strategy use, oral and written Team Talk responses, and fluency. Ask other teams to agree, disagree, or add on to responses.
2. Use rubrics to evaluate responses and give specific feedback. Award team celebration points for 100-point responses. Record individual scores on the teacher cycle record form.

## Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

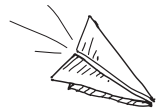


# Lesson 2

**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

## Teacher Background

Today students will read about Rosalind Franklin and Maurice Wilkins and how their feud prevented them from being effective coworkers. These two scientists got along as well as oil and water, which possibly prevented Franklin from receiving more credit for her work that led to the discovery of the structure of DNA.



## Active Instruction tp

(25 minutes)

### Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rate their knowledge of each as they arrive for class.
2. Spot check the Read and Respond homework.

### Vocabulary

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a “+” and a word the entire team rated with a “?”.
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Award team celebration points.
3. Introduce the vocabulary for this cycle. Read each word aloud, and model chunking as needed. Then read the meaning of each word.

Word	Pronunciation	Definition	Sample Sentence
<b>contaminated</b> (verb) page 11	con-tam-i-na-ted (kuhn-TAM-uh- ney-ted)	made impure by contact with something unclean	For a picky eater, having a hamburger <i>contaminated</i> by mustard or pickles may ruin a perfectly good meal.

*continued*

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams discuss their vocabulary ratings.



Introduce vocabulary.

Word	Pronunciation	Definition	Sample Sentence
<b>hypothesis</b> (noun) page 16	hy-poth-e-sis (hi-POTH-uh-sis)	a statement introduced as an explanation for an event or observation	Jheri's <i>hypothesis</i> that plants need at least an hour of light a day explained why the flowers in the front yard, which received no sunlight, were not as hardy as the plants in the sunny backyard.
<b>methodical</b> (adjective) page 34	me-thod-i-cal (muh-THOD-i-kuhl)	painstaking; especially slow and careful	The bird was <i>methodical</i> in its process of preening its feathers, making sure it reached each one and smoothed it out.
<b>hereditary</b> (adjective) page 34	he-red-i-tar-y (huh-RED-i-ter-ee)	capable of passing from parents to their offspring through genes	Dark hair and blue eyes are <i>hereditary</i> in our family; everyone from my grandfather to my youngest cousin has these features.
<b>collaboration</b> (noun) page 35	col-lab-o-ra-tion (kuh-lab-uh-REY-shuhn)	the process of working with another person	My <i>collaboration</i> with Hymie to start a band ended when I learned that he could not actually play the real guitar, only a video game instrument.
<b>particles</b> (noun) page 38	par-ti-cle (PAHR-ti-kuhl)	minute pieces, amounts, or bits	You might think your house is clean, but a ray of sunshine through a window reveals thousands of <i>particles</i> of dust floating in the air.
<b>ambiguous</b> (adjective) page 41	am-big-u-ous (am-BIG-yoo-uhs)	lacking clarity, obscure, indistinct	Some say that a video of an <i>ambiguous</i> apelike creature is evidence of sasquatch, while others believe it is a man in a monkey suit.
<b>pulsating</b> (verb) page 43	pul-sat-ing (PUHL-seyt-ing)	expanding and contracting, as with rhythm	We could see the frog's throat <i>pulsating</i> as he sat on the edge of the pond, only breaking its rhythm when he opened his mouth to catch an insect.

Review Vocabulary Vault.

Teams review their cycle goal.

Post and present the reading objective.

Refer students to pages 34–36 in the text.



Build background about the topic.

4. Use **Random Reporter** to have teams share a new sentence that uses one of their vocabulary words. Award team celebration points.
5. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.

### Set the Stage

1. Ask students to review their team’s goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading objective.
4. Prompt students to identify the first steps in the TIGRRS process. Have partners survey today’s reading. Use **Think-Pair-Share** to have students predict the topic and identify clues and predict the author’s intent. Randomly select a few students to share.
5. Use **Think-Pair-Share** to ask:

#### Which graphic organizer(s) will work best with this text? Why?

- T:** Rosalind Franklin and how a feud must have prevented her from winning a Nobel Prize
- I:** To inform readers about Rosalind Franklin and how she lost a feud and did not win a prize
- G:** A web will help me organize the important ideas and their supporting details.

6. Remind students of the Big Question: Is there a limit to how much pride you should take in yourself or your work? Use **Think-Pair-Share** to ask:

#### How could pride affect the way some people work together?

*Pride could make some people too stubborn to ask someone else for help when they don’t understand what they are working on. It could also make some people not want to share their work with others because they want the credit for their work. Pride could also make some people believe that they are doing their work better than anyone else could do it or that they are doing it better than if they had help.*

7. (Optional) If you have access to the Internet, visit the following website, and use the interactive activity to study photograph 51, the famous photograph that unlocked the secrets of DNA for scientists: [www.pbs.org/wgbh/nova/tech/DNA-photograph.html](http://www.pbs.org/wgbh/nova/tech/DNA-photograph.html).

**Teacher:** Read aloud.

**Students:** Practice the skill or strategy.



**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill/strategy.



**Partner pairs:** Review, reread to clarify, and add to the graphic organizer.

### Interactive Read Aloud

1. Tell students that you will take the next step in the TIGRRS process: read and restate. Read “Rosalind Franklin: The Woman Who *Should Have* Won the Nobel Prize,” page 34 (paragraph 1) aloud. Use **Think-Pair-Share** to prompt use of the skill or strategy.

**Compared with what you read about Thomas Edison and Nikola Tesla, how competitive was Rosalind Franklin in her research?**

*Rosalind is not very competitive about the speed at which she researches DNA or even about who discovers the secrets of DNA first. She is more interested in working methodically to make sure that the research is done correctly and that the answers that she finds are correct. By contrast, Edison and Tesla both raced to invent the next big thing so they would receive more praise.*

2. Partner Practice: Student partner pairs use the read-aloud/think-aloud process to practice the skill or strategy with the next passage in the text.

Have students read page 34 (paragraph 2).

Use **Think-Pair-Share** to ask:

**What were people hoping to learn by unlocking the structure of DNA? How do you think this affected the way Franklin worked?**

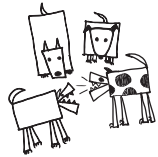
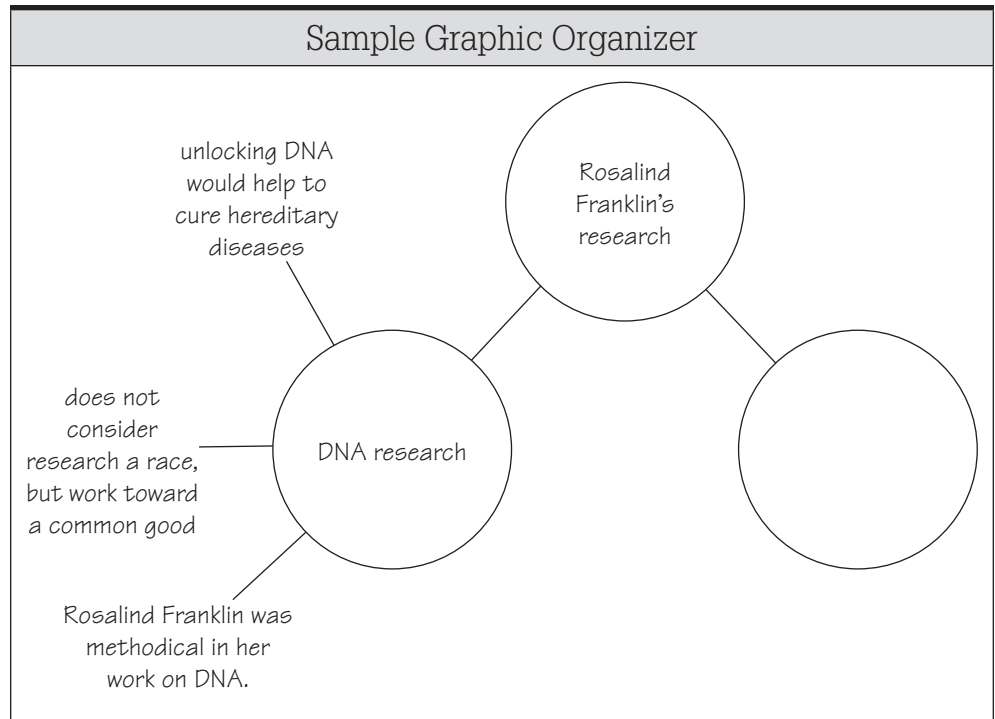
*People were hoping that by unlocking the structure of DNA, the causes of hereditary diseases, such as hemophilia or Down syndrome, would be discovered. If you discover the causes of these diseases, then you can work on finding the cures. I think this was important to Franklin, and she wanted to make sure that it was done correctly the first time. I don't think she wanted to contribute to raising false hopes about DNA by producing bad research.*

Use **Random Reporter** to debrief.

3. Refer students to the next step in the TIGRRS process: reread and review. Ask partners to review this section of text, check their understanding with each other, reread what they need to clarify, and add notes to their graphic organizers.

Use **Random Reporter** to debrief. Add student responses to the graphic organizer.

A sample graphic organizer follows.



## Teamwork tp

(20 minutes)

Cue students to use their student routines for partner reading, fluency, and the TIGRRS process.

### Partner Prep

1. Explain, or review if necessary, the student routines for partner reading, fluency, and the TIGRRS process before having students read and restate: sr  
**pages 34–36 aloud with partners.**
2. Circulate and check for comprehension, evidence of strategy use, and use of the TIGRRS process, for example, restating ideas on the graphic organizer. Give students feedback. Prompt and reinforce their discussions.
3. If some partners finish ahead of their teammates, have them begin looking over the Team Talk questions.

### Team Discussion

1. Explain, or review if necessary, how to use role cards and the student routines for strategy use and Team Talk discussion. sr
2. Remind students to use the rubrics on their team folders to prepare each team member to discuss the team's strategy use, oral and written Team Talk responses, and fluency. Each team member must be able to summarize the text and discuss the team's graphic organizer/notes during Class Discussion as indicated.

Cue students to use their student routines for strategy use and Team Talk discussion.

3. Preview the Team Talk questions. If necessary, ask questions to guide students' reflection as they determine the meaning of the "(Write)" question.

### Team Talk Questions

1. Franklin and Maurice Wilkins's work relationship was described as oil and water. What do you think this comparison means? Use evidence from the text and your own knowledge to support your thinking. **[CV, RE, SA]** (Team Talk rubric)

*100 = This **comparison** means that like oil and water, Franklin and Wilkins did not mix well when they collaborated on projects. The text describes how each had different **expectations** for their **working relationship**: Wilkins **assumed** they were supposed to work together and that he was her **supervisor** while Franklin thought she was working **independently** of Wilkins. This description shows that because they could not form a good working relationship, their work and ideas stayed separate from each other.*

*90 = This description means that like oil and water, Franklin and Wilkins did not mix well when they worked together. They had different ideas about working together: Wilkins thought they were supposed to work together and that he was her boss while Franklin thought she was working alone.*

*80 = Franklin and Wilkins did not work together well and kept their research and ideas separate from each other, similar to how oily liquids separate from watery ones.*

2. Why do you think the author includes the anecdote about James Watson not taking notes at a seminar where Franklin presented her findings? What do you think Franklin's reaction to Watson says about her? **[AP, DC]** (Team Talk rubric)

*100 = The **anecdote** about James Watson shows that sometimes scientists have **inflated** opinions about their own memories and intelligence. The author uses the phrase "didn't bother" when she describes Watson's **attitude** toward taking notes during Franklin's presentation. That means that he believed that he would remember the details of the research she presented or that he understood her so clearly that he didn't need notes to **assist** him. Franklin had to correct his work and **according to the text**, the **incident confirmed** that good research was necessary to avoid sloppy guesswork. I think it shows that Franklin did not trust other researchers to use her data as carefully and thoroughly as she did.*

*90 = The story about James Watson shows that sometimes scientists have high opinions about their own memories and intelligence. The author says Watson "didn't bother" to take notes during Franklin's presentation. He may have believed that he would remember the research she presented or that he understood her so well that he didn't need notes. Franklin had to correct his work, which showed her that good research was needed to avoid bad guesses.*

*80 = James Watson's story shows that scientists sometimes don't think it's important to take notes to help them remember the details of other people's research. Franklin saw that as a sign that hard work was important.*

*continued*

Team Talk Questions *continued*

3. What does the author believe caused Franklin to miss her opportunity to be recognized for her work on DNA? Support your thinking. **(Write) [RE, MI, SA]** (Team Talk rubric)

100 = *Franklin kept her research to herself while she worked in the laboratories at Kings College and did not collaborate well with her partner, Wilkins. As explained in the text, Wilkins found the x-ray photograph that Franklin had taken of DNA and showed it to Watson, who, with his partner Francis Crick, created a DNA model based on the x-ray. However, Franklin never knew that Wilkins showed Watson her photograph. She died of cancer before she could be nominated to win the Nobel Prize for the discovery of the structure of DNA. According to the text, Watson believed she would have been nominated for the prize over Wilkins if she had lived. If she and Wilkins had been able to work together, the discovery could have been made sooner, and she might have lived long enough to be recognized for the work she did to unravel DNA's structure.*

90 = *Franklin kept her research to herself while she worked in the laboratories at Kings College and did not collaborate well with her partner, Wilkins. Wilkins found a photograph that Franklin had taken of DNA and showed it to Watson, who, with his partner Francis Crick, created a model based on it. She never knew that Wilkins showed them her photographs, and she died of cancer before she could win the Nobel Prize for her research on how DNA is structured. Watson believed she would have won the prize over Wilkins if she had lived.*

80 = *Because Franklin kept her research to herself, she never knew that her partner, Wilkins, shared her work with other researchers. She died before she could be rewarded for the work she did on DNA.*

*continued*



Team Talk Questions *continued*

4. Which of the following best describes what Wilkins’s actions with Franklin’s research shows about scientists? **[RE, DC]** (Team Talk rubric)
- A. *They do not always play fair in the laboratory.*
  - B. *They always get along due to mutual interests.*
  - C. *They try hard to build good working relationships.*
  - D. *They purposefully destroy one another’s work.*

Describe how today’s reading supports this conclusion.

*100 = Wilkins showed Watson an x-ray photograph that Franklin had taken of DNA. According to the text, Franklin had this photograph hidden in a drawer, not sitting out on her desk where everyone could see it. I think that if Franklin had been ready to share her research, the photograph would have been more readily available for other researchers to view. Instead, Wilkins found it and shared it without her permission since the text says Franklin never knew how her photograph helped Watson and Crick create their model. This shows that Wilkins’s behavior was not completely honest or fair to Franklin.*

*90 = Wilkins showed Watson an x-ray photograph that Franklin had taken of DNA. Franklin had this photograph hidden in a drawer, not sitting out on her desk where everyone could see it. If Franklin had been ready to share her research, the photograph would have been available for other researchers to see. Wilkins found it and shared it without asking because Franklin never knew how her photograph helped Watson and Crick create their model.*

*80 = Wilkins showed Franklin’s work to other researchers without asking if he could and without telling her about it later. She never knew how Watson and Crick used her research to complete their model.*

5. What is a synonym for the word *contaminated*? What is an antonym for the word *contaminated*? (Reminder: an antonym is a word meaning the opposite.) **[CV]**

*A synonym for the word contaminated is corrupted. An antonym for contaminated is purified.*

4. Have students thoroughly discuss Team Talk questions before they write individual answers to the skill question marked “(Write).” Allow students to revise their written answers after further discussion if necessary.
5. Prompt teams to discuss comprehension problems and strategy use (their sticky notes), and important ideas that they added to their graphic organizers.
6. Circulate and give feedback to teams and students. Use rubrics to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
7. If some teams finish ahead of others, have them practice their fluency.
8. Award team celebration points for good team discussions that demonstrate 100-point responses.

Cue students to discuss strategy use and graphic organizers.



Randomly select team representatives who will share:

- strategy use
- oral and written Team Talk responses
- fluency selection



## Class Discussion tp

(15 minutes)

### Lightning Round

1. Use **Random Reporter** to have teams share strategy use, oral and written Team Talk responses, and fluency. Ask other teams to agree, disagree, or add on to responses.
2. Use rubrics to evaluate responses and give specific feedback. Award team celebration points for 100-point responses. Record individual scores on the teacher cycle record form.

### Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.

Word	Pronunciation	Definition	Sample Sentence
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<b>ambiguous</b> (adjective) page 41	am-big-u-ous (am-BIG-yoo-uhs)	lacking clarity, obscure, indistinct	Some say that a video of an <i>ambiguous</i> apelike creature is evidence of sasquatch, while others believe it is a man in a monkey suit.
<b>pulsating</b> (verb) page 43	pul-sat-ing (PUHL-seyt-ing)	expanding and contracting, as with rhythm	We could see the frog's throat <i>pulsating</i> as he sat on the edge of the pond, only breaking its rhythm when he opened his mouth to catch an insect.

## Lesson 3

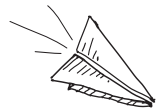
**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

### Teacher Background

Today students will read about the feud between Harlow Shapley, Herber Curtis, and other scientists over the size and scope of the Milky Way and the entire universe. They will learn how scientists can be right, as Shapley was about the location of the solar system in the Milky Way, but also wrong, as he was about the size of the Milky Way.

In this lesson, you will introduce the word power journal and word power rubric. As part of the partner reading routine, students identify a word or words from their reading that they think are important or interesting words. They explore the words and create word maps in their word power journals to show what they learn about the word. Each cycle, in lesson 3, you will model identifying a word and exploring it in a word map. Sample words, Think Alouds, and word maps are provided in the lessons.

The word power rubric will help partners give feedback on word maps and also guide the team's word power discussions. Encourage students to go beyond a word and its definition to look for related words, synonyms and antonyms, multiple meanings, or connotations of words. Use the word power rubric as a tool for evaluating and giving feedback to Random Reporters in the Lightning Round.



## Active Instruction

(15–25 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams discuss their vocabulary ratings.



### Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rerate their knowledge of each vocabulary word as they arrive for class.
2. Spot check the Read and Respond homework.

### Vocabulary

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a “+” and a word the entire team rated with a “?”.
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Use **Random Reporter** to have teams report on a new sentence using a vocabulary word. Award team celebration points.

Review Vocabulary Vault.

Introduce the word power journal.

Model exploring a word in the word power journal and making a word map.

3. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.

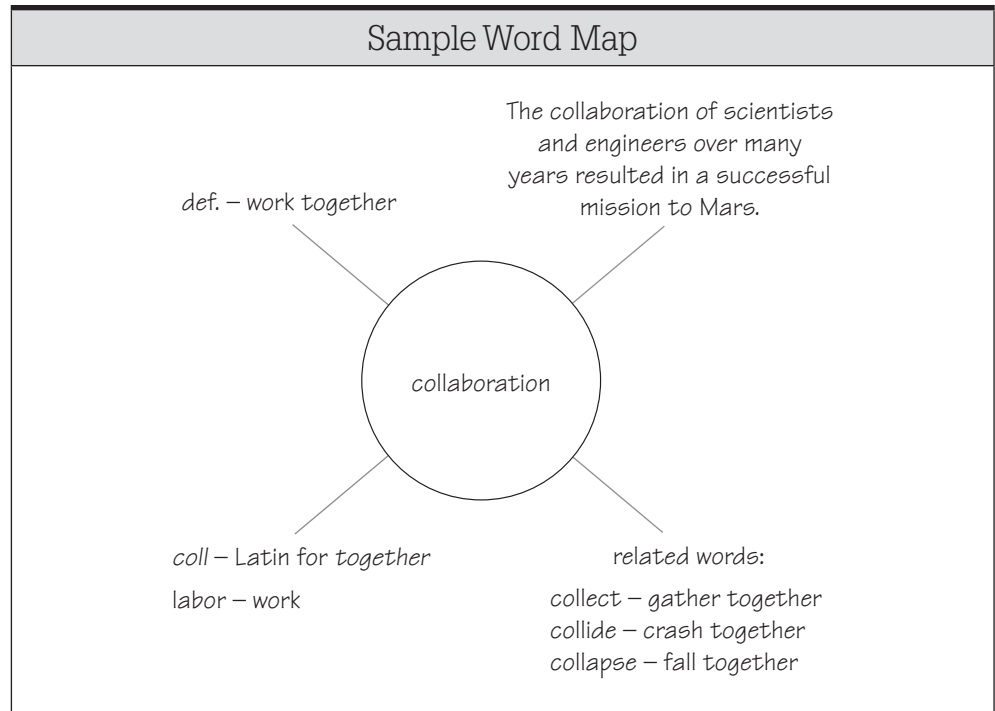
4. Explain that students will be keeping a word power journal.

**To build our knowledge of words, we will be keeping word power journals. When we find important or interesting words during partner reading, we record them in our word power journals, and then find out more about them. To explore a word in the word power journal, we make a word map.**

5. Choose an important word from the text or class discussion, and model how to explore it in a word power journal entry. A sample Think Aloud and word map follow.

Sample Think Aloud

I want to explore the word *collaboration* from a previous reading. I know that when scientists collaborate, they work together, but I want to learn more about this word. (Model using the dictionary or dictionary.com to look up *collaboration*.) The dictionary defines *collaboration* as a joint effort or the results of working with others. A meaningful sentence for *collaboration* is: The collaboration of scientists and engineers over many years resulted in a successful mission to Mars. The word *collaboration* comes from the Latin word *coll*, which means together, plus *labor*, which means work. What are some words related to *collaboration*? Are there other words that begin with the word part *coll*? For example, *collect* means gather together; *collide* means crash together; *collapse* means fall together.



6. Explain that a word map shows what you learned about a word. For example, its meaning, a sample sentence using the word, related words, maybe a second meaning of the word, or an antonym (opposite meaning) for the word.
7. Display the following word power journal rubric (also on the team folder). Remind students that the rubrics are tools to help teams get ready for the Lightning Round. Explain that teams can earn points on the poster when they share words that they explored in their word power journals. Review the levels on the rubric.

<b>Word Power</b> The Random Reporter:	
<b>100</b>	gives a 90-pt. response <b>and expands on the meaning, for example, identifies</b> <ul style="list-style-type: none"> <li>• related words</li> <li>• a second meaning</li> <li>• a word connotation</li> <li>• an antonym</li> </ul>
<b>90</b>	gives an 80-pt. response <b>and explains the meaning in a definition and a meaningful sentence.</b>
<b>80</b>	tells a word or phrase added to the word power journal and why it was added (what makes it important or interesting).

Show the video  
“Word Power Journal.”



8. Introduce the video.

**Let’s watch a team’s word power discussion as they get ready for the Lightning Round.**

Use **Think-Pair-Share** to debrief.

**How did the team prepare for the Lightning Round?**

**Using the word power rubric, do you think the team earned a point for their response in the Lightning Round? Why or why not?**

9. Refer students to the teamwork routines and the routine for word power. Review the routine, and remind teams that they can earn points on the poster for 100-point word power responses.

With Partners	First	Second	Third	Fourth	Finally
<b>Word Power</b>	Add a word to your word power journals, and discuss why you added it. What makes this word important or interesting?	Find out the word’s definition. Use the word in a meaningful sentence.	Explore the word’s meaning, for example, add to your journal: - related words, - a second meaning, - a connotation of the word, or - an antonym.	As a team, share word power. Check to see that all team members are ready for word power in the Lightning Round.	

Teams review their cycle goal.

Post and present the reading objective.



Refer students to pages 40–43 in the text.

Students begin the TIGRRS process by predicting the topic and author’s intent and choosing a graphic organizer.

**Set the Stage**

1. Ask students to review their team’s goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading objective.
4. Have students preview today’s text. Have teams discuss the strategies that they use when they first pick up a text. Use **Random Reporter** to share team responses.

*For example, I scan the text to see whether it is informational or literature, look for clues to predict the topic and the author’s intent, and figure out how the text is set up so I can choose a graphic organizer for notes.*

5. Have teams discuss and report on their preview of the text and explain their thinking. Use **Random Reporter** to share team responses.

**T:** A feud between astronomers, or scientists who study space

**I:** To inform readers about this feud and who won the feud

**G:** A web. There are headings for sections with different important ideas and supporting details in those sections.

Build background about the topic.

**Teacher:** Read aloud.



**Students:** Practice the skill or strategy.

**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill/strategy.

- (Optional) If you have Internet access, have students view the following video (stop at 3:00): [www.pbslearningmedia.org/content/phy03.sci.phys.fund.hubble2](http://www.pbslearningmedia.org/content/phy03.sci.phys.fund.hubble2).
- Review with students what they learned in lesson 1 of this cycle about the geocentric and heliocentric systems of the universe. Explain that by the twentieth century, it was universally accepted by scientists that we lived in a heliocentric system. However, our view of the universe is much bigger than in Galileo's time. With improved telescopes, we discovered more planets, moons, and other objects in space but were unsure of their relationships to Earth in terms of distance.

### Interactive Read Aloud

- Read "Cosmic Warriors," page 40 (paragraphs 1–3) aloud. Use **Think-Pair-Share** to prompt use of the skill or strategy.

**How were the beliefs of astronomers in the twentieth century different from, but still similar to, those of scientists in Galileo's time?**

*Astronomers in the twentieth century universally agreed that the sun, not Earth, was the center of the solar system, as opposed to scientists in Galileo's time who believed that Earth was the center of the solar system. However, like scientists in Galileo's time, astronomers still believed that Earth's solar system was the center of the galaxy.*

- Partner Practice: Student partner pairs use the read-aloud/think-aloud process to practice the skill or strategy with the next passage in the text.

Have students read page 40 (paragraph 4).

Use **Think-Pair-Share** to ask:

**Harlow Shapley made two controversial claims that started a cosmic feud. How do you predict his feud will turn out? Why?**

*His claims about the solar system's position in the Milky Way turned out to be correct. I know because the text says he placed the sun about 50,000 light years off to one side in the galaxy, but that number was later corrected to 30,000 light years. That means scientists studied his research and improved upon it. I think his claims about the Milky Way being the whole universe will be refuted. I know that the universe is huge and that the Milky Way is just one galaxy in it. I think other scientists will find information that proves him wrong.*

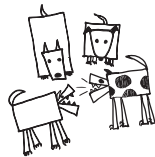
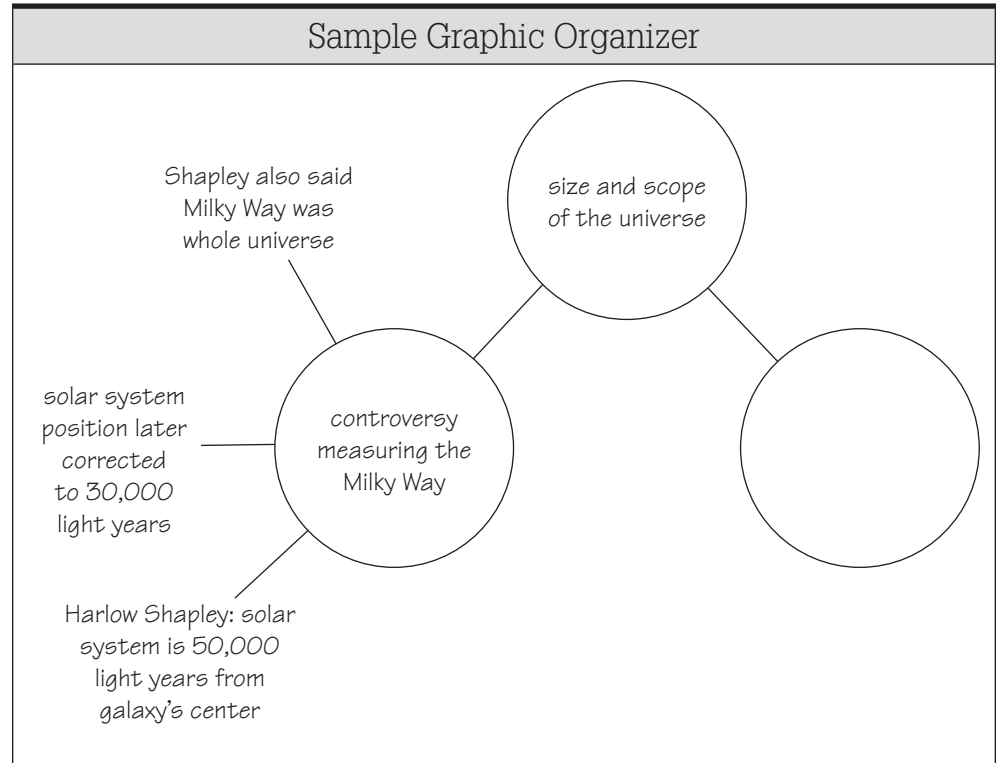
Use **Random Reporter** to debrief.

- Refer students to the next step in the TIGRRS process: reread and review. Ask partners to review this section of text, check their understanding with each other, reread what they need to clarify, and add notes to their graphic organizers.



**Partner pairs:** Review, reread to clarify, and add to the graphic organizer.

Use **Random Reporter** to debrief. Add student responses to the graphic organizer.



## Teamwork tp

(20–30 minutes)

### Partner Prep

1. Explain, or review if necessary, the student routines for partner reading, word power, fluency, and the TIGRRS process before having students read and restate: sr  
**pages 40–43 aloud with partners.**
2. Circulate and check for comprehension, evidence of strategy use, and use of the TIGRRS process, for example, restating ideas on the graphic organizer. Give students feedback. Prompt and reinforce their discussions.
3. If some partners finish ahead of their teammates, have them begin looking over the Team Talk questions.

Cue students to use their student routines for partner reading, word power, fluency, and the TIGRRS process.



Cue students to use their student routines for strategy use and Team Talk discussion.

### Team Discussion

1. Explain, or review if necessary, how to use role cards and the student routines for strategy use and Team Talk discussion. **SF**
2. Remind students to use the rubrics on their team folders to prepare each team member to discuss the team's strategy use, oral and written Team Talk responses, word power, and fluency. Each team member must be able to summarize the text and discuss the team's graphic organizer/notes during Class Discussion as indicated.
3. Preview the Team Talk questions. If necessary, ask questions to guide students' reflection as they determine the meaning of the "(Write)" question.

#### Team Talk Questions

1. The text states that Shapley suffered from "selection effect" in his research. Based on what you learned about the scientific method in "Germ Warfare: Showdown in a Paris Theater" on pages 21 and 22, do you think Shapley was being a thorough scientist? Support your thinking. **(Write) [RE, DC, SA]**  
(Team Talk rubric)

**100** = *Shapley was not following the scientific method or being a very thorough scientist when he refused to believe that the Great Nebula was not actually a part of the Milky Way galaxy. According to the text, Shapley's assistant, Milton Humason, discovered variable stars in the nebula, which meant that the nebula was more likely a galaxy of stars than a cloud of gas like Shapley believed. Shapley called Humason's findings rubbish and explained how that wasn't possible. The scientific method requires scientists to experiment repeatedly to make sure that nothing can create the result except the principle being tested. Had Shapley followed the scientific method, he would have accepted that Humason's findings showed that his ideas were incorrect.*

**90** = *Shapley was not following the scientific method or being accurate when he refused to believe that the Great Nebula was not actually a part of the Milky Way galaxy. Shapley's helper, Milton Humason, discovered changing stars in the nebula, which meant that the nebula was probably a galaxy instead of a cloud of gas. Shapley called Humason's findings trash and explained how that wasn't possible. When scientists use the scientific method, they test their ideas and change them if the tests do not prove their ideas correct.*

**80** = *Shapley was not using the scientific method on his own ideas, so he did not want to accept the findings of others that showed he was wrong.*

*continued*

Team Talk Questions *continued*

2. Which of the following describes an important idea from this text? **[MI, SA]**  
(Team Talk rubric)

- A. Scientists are bound to work with their partners forever.
- B. Most scientists will never work well with anyone else in the field.
- C. All scientists are thorough about their research and reasoning.
- D. *Scientists can make better progress with different work partners.*

How does today's text support this main idea?

100 = *Milton Humason was Shapley's **observation assistant**, but Shapley did not seem to respect the research that Humason did. According to the reading, when Humason presented the **photographic slides with variable stars marked on them**, Shapley erased his marks and told him his findings were rubbish. Shapley later left the Mount Wilson Observatory, and Edwin Hubble took his place to work with Humason. Three years later, Hubble **determined** that **variable stars in the Great Nebula were actually a part of a galaxy at least one million light years away**. It is likely that Humason shared his earlier findings with Hubble, who was willing to research them further. This shows that scientists may advance science more when working with different partners.*

90 = *Milton Humason was Shapley's partner, but Shapley did not seem to respect the research that Humason did. When Humason showed some slides with variable stars marked on them, Shapley erased his marks and told him his findings were rubbish. Shapley later left the Mount Wilson Observatory, and Edwin Hubble took his place to work with Humason. Hubble figured out that changing stars in the Great Nebula were actually a part of a galaxy at least one million light years away.*

80 = *When Humason worked with Shapley, his findings were not accepted by Shapley. When Humason worked with Hubble, his findings were used to determine that the stars were actually in a galaxy outside of the Milky Way.*

*continued*

Team Talk Questions *continued*

3. How was Hubble's career affected by his discoveries, and how did Shapley feel about this? Use evidence from the text to support your response. **[RE, SA]** (Team Talk rubric)

100 = *According to the text, Hubble's scientific reputation was made almost overnight by his discoveries. That means people were very impressed by his research proving that the Milky Way was just one of billions of galaxies in an expanding universe. I think Shapley felt conflicted about Hubble's success. He wrote to Hubble, saying, "I do not know whether I am sorry or glad to see this break in the nebular problem. Perhaps both." I think this shows that Shapley knew he could have been the one to make this big discovery rather than continue the argument against a bigger universe.*

90 = *Hubble was made famous by his discoveries almost overnight. People were excited by his research that showed the Milky Way was just one of billions of galaxies in a growing universe. I think Shapley felt good and bad about Hubble's success. He wrote to Hubble, saying, "I do not know whether I am sorry or glad to see this break in the nebular problem. Perhaps both."*

80 = *Hubble's discoveries made him famous in the world of science, and I think this made Shapley both happy and sad because the debate was over, but he was wrong.*

4. Based on your understanding of the text, how did Shapley and Curtis both win and lose their feuds? Support your response. **[RE, MI]** (Team Talk rubric)

100 = *Shapley and Curtis were each correct about some parts of their feuds and wrong about other aspects. For example, Shapley was correct in his findings that the sun and our solar system were not in the center of the Milky Way galaxy, but off to the side by several thousand light years. Curtis did not agree with this finding, believing the sun to be the center of the galaxy. However, Curtis believed that Shapley was wrong about the size of the universe, arguing that it was much bigger than Shapley claimed and that the Milky Way was just one galaxy among many. Hubble's research proved Curtis right about the size of the universe. This shows that scientists don't always have the correct ideas about everything they research.*

90 = *Shapley and Curtis were each correct about some parts of their feuds and wrong about other aspects. Shapley was right that the sun and our solar system were not in the center of the Milky Way galaxy, but off to the side by several thousand light years. Curtis did not agree and thought the sun was the center of the galaxy. Curtis believed that Shapley was wrong about the size of the universe, arguing that the Milky Way was just one of many galaxies. Hubble proved him right about that.*

80 = *Shapley was correct about the location of the solar system in the Milky Way, but wrong about the size of the universe. Curtis was wrong about the location of the solar system, but right about the size of the universe.*

*continued*

Team Talk Questions *continued*

5. contaminated      methodical

Can science experiments be *contaminated* if scientists are *methodical* in their work habits? **[CV]**

*It is less likely for experiments to be contaminated if scientists are methodical. If something is contaminated, it means it was made impure by contacting something unclean. A scientist who is methodical is slow and careful about his or her work, so he or she is unlikely to make a mistake and let the experiment be contaminated.*

Cue students to discuss strategy use, graphic organizers, and word power journals.

4. Have students thoroughly discuss Team Talk questions before they write individual answers to the skill question marked “(Write).” Allow students to revise their written answers after further discussion if necessary.
5. Prompt teams to discuss comprehension problems and strategy use (their sticky notes), important ideas that they added to their graphic organizers, and words that a team member added to the word power journal.
6. Circulate and give feedback to teams and students. Use rubrics to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.
7. If some teams finish ahead of others, have them practice their fluency.
8. Award team celebration points for good team discussions that demonstrate 100-point responses.

**Randomly select team representatives who will share:**

- strategy use
- oral and written Team Talk responses
- word power discussions
- fluency selection



## Class Discussion tp

(20 minutes)

### Lightning Round

1. Use **Random Reporter** to have teams share strategy use, oral and written Team Talk responses, word power discussions, and fluency. Ask other teams to agree, disagree, or add on to responses.
2. Use rubrics to evaluate responses and give specific feedback. Award team celebration points for 100-point responses. Record individual scores on the teacher cycle record form.

Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.

### **Celebrate**

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

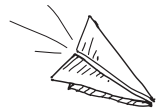
- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

## Lesson 4

**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

### Teacher Background

Today students will read about a relatively recent feud that erupted in 2011 over the possible existence of microbes that could thrive on arsenic, an element usually considered poisonous to life. This feud rounds out the idea that from the 1600s to the present, scientists remain the same. They may still believe strongly in their research and resent corrections from others. They may still make mistakes in the lab that give misleading results that are noticed by others. Scientific feuds will never go away.



## Active Instruction

(15–25 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams discuss their vocabulary ratings.



Review Vocabulary Vault.

Teams review their cycle goal.

Post and present the reading objective.

### Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rerate their knowledge of each vocabulary word as they arrive for class.
2. Spot check the Read and Respond homework.

### Vocabulary

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a “+” and a word the entire team rated with a “?”.
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Use **Random Reporter** to have teams report on a new sentence using a vocabulary word. Award team celebration points.
3. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.

### Set the Stage

1. Ask students to review their team's goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading objective.

Refer students to pages 10–13 in the text.



Students begin the TIGRRS process by predicting the topic and author's intent and choosing a graphic organizer.

Build background about the topic.



**Teacher:** Read aloud.  
**Students:** Practice the skill or strategy.



**Partner pairs:** Read aloud/think aloud with the next passage to practice the skill/strategy.

- Have teams discuss and report on their preview of the text and explain their thinking. Use **Random Reporter** to share team responses.

- T:** A discovery that seemed like it provided evidence for aliens, but it may have been a mistake
- I:** To inform readers about a discovery of a new life form and what went wrong with it
- G:** An idea tree. I see headings that provide important ideas with paragraphs of information supporting the ideas.

- Remind students of the Big Question: Is there a limit to how much pride you should take in yourself or your work? Use **Think-Pair-Share** to ask:

**Scientists have a lot of pride in their work. How could sticking with their arguments be both a benefit and a disadvantage?**

*By sticking with their arguments, scientists could push other scientists into exploring their research and learning from it. If the first scientist is correct, then other scientists will accept his or her ideas, and everyone will benefit. However, if a scientist sticks to his or her arguments based on bad science or flawed experiments, then he or she will just look foolish. People will either forget his or her work or remember the person as someone with the wrong ideas.*

### Interactive Read Aloud

- Read “The Alien Discovery That Wasn’t,” page 10 (paragraph 1) aloud. Use **Think-Pair-Share** to prompt use of the skill or strategy.

**What claim did Felisa Wolfe-Simon make, and how did other scientists feel about it? Based on what you’ve learned about other scientific claims, what do scientists need before they accept new ideas?**

*Felisa Wolfe-Simon claimed that she found microbes living on Earth that could use poisonous arsenic to live rather than phosphorus like all other life forms on Earth. Scientists were skeptical of her discovery. I’ve learned that scientists need a lot of evidence to believe new claims and ideas. They want to see experiments or perform experiments themselves. When scientists can’t see the evidence behind a claim, they tend to not believe it.*

- Partner Practice: Student partner pairs use the read-aloud/think-aloud process to practice the skill or strategy with the next passage in the text.

Have students read page 10 (paragraphs 2 and 3).

Use **Think-Pair-Share** to ask:

**What do you think made Wolfe-Simon’s claims hard for other scientists to believe?**

*According to the text, all living things on Earth need carbon, nitrogen, oxygen, hydrogen, phosphorus, and sulfur to exist. Without even one of those elements, life would be impossible. Wolfe-Simon claimed that she found a*



**Partner pairs:** Review, reread to clarify, and add to the graphic organizer.

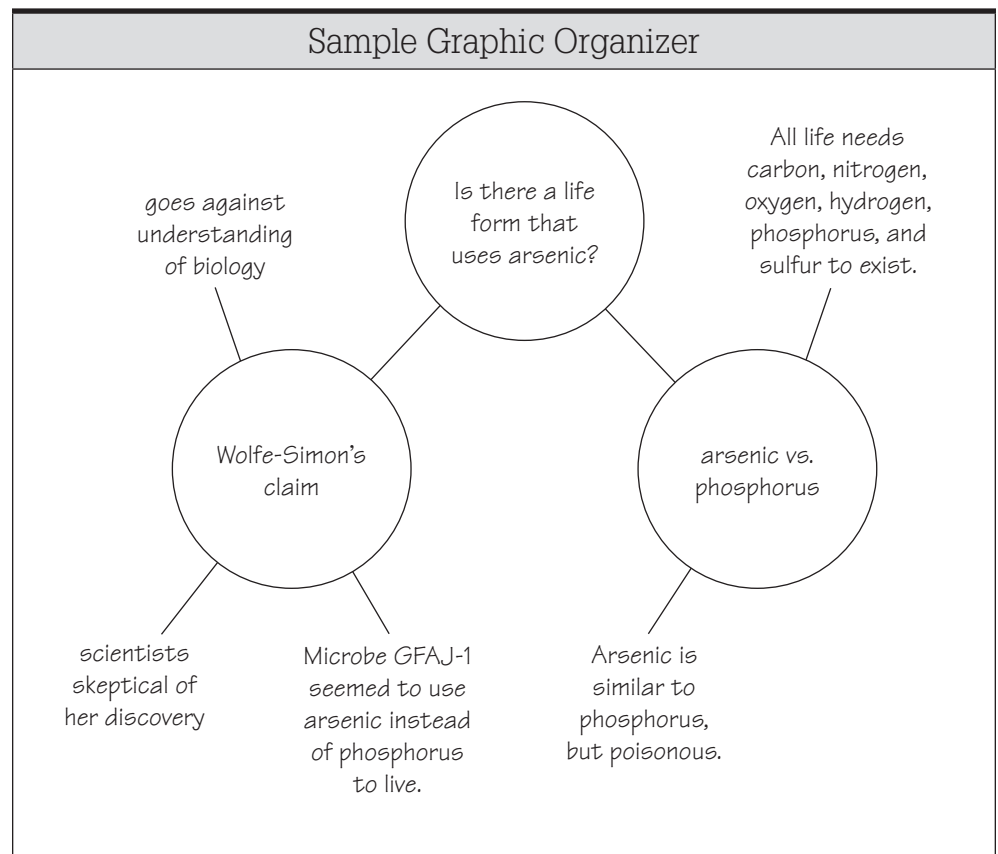
*microbe that used poisonous arsenic instead of phosphorus. Her claim goes against what scientists have understood about biology for a long time, so it is hard to believe.*

Use **Random Reporter** to debrief.

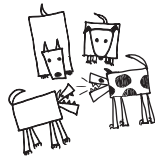
3. Refer students to the next step in the TIGRRS process: reread and review. Ask partners to review this section of text, check their understanding with each other, reread what they need to clarify, and add notes to their graphic organizers.

Use **Random Reporter** to debrief. Add student responses to the graphic organizer.

A sample graphic organizer follows.







# Teamwork tp

(20–30 minutes)

Cue students to use their student routines for partner reading, word power, fluency, and the TIGRRS process.

## Partner Prep

1. Explain, or review if necessary, the student routines for partner reading, word power, fluency, and the TIGRRS process before having students read and restate: sr  
**pages 10–13 (excluding the green box) aloud with partners.**
2. Circulate and check for comprehension, evidence of strategy use, and use of the TIGRRS process, for example, restating ideas on the graphic organizer. Give students feedback. Prompt and reinforce their discussions.
3. If some partners finish ahead of their teammates, have them begin looking over the Team Talk questions.

## Team Discussion

1. Explain, or review if necessary, how to use role cards and the student routines for strategy use and Team Talk discussion. sr
2. Remind students to use the rubrics on their team folders to prepare each team member to discuss the team’s strategy use, oral and written Team Talk responses, word power, and fluency. Each team member must be able to summarize the text and discuss the team’s graphic organizer/notes during Class Discussion as indicated.
3. Preview the Team Talk questions. If necessary, ask questions to guide students’ reflection as they determine the meaning of the “(Write)” question. Remind students that they can use the Summarizing Strategy Card for informational text to help them write summaries for Team Talk question #1.

Cue students to use their student routines for strategy use and Team Talk discussion.

### Team Talk Questions

1. Write a summary of the section of text that you read today. **(Write) [MI]**  
(summary rubric)

*100 = In 2011, scientist Felisa Wolfe-Simon presented research that claimed she discovered a microbe that used arsenic in its biology instead of phosphorus. This claim sparked a feud because the science seemed unbelievable because arsenic is poisonous to most forms of life. Other scientists studied Wolfe-Simon’s research and determined that there were mistakes in her research. She was forced to take back some of her claims while she continues to research the microbes.*

*90 = In 2011, scientist Felisa Wolfe-Simon said she discovered a creature that used arsenic in its body instead of phosphorus. This started an argument because it seemed unbelievable. Arsenic is poisonous to living things. Other scientists studied Wolfe-Simon’s research and found mistakes. She had to take back some of her claims while she keeps studying the creatures.*

*80 = In 2011, Felisa Wolfe-Simon said she found a creature that could use arsenic in its body instead of phosphorus, but many scientists disagreed. They said her research had problems in it that she needed to fix.*

*continued*

Team Talk Questions *continued*

2. Steven Banner disagreed with how Wolfe-Simon conducted her experiment. According to him, where might Wolfe-Simon find better support for her theory? Support your thinking. **[DC, SA]** (Team Talk rubric)

100 = *Although Steven Banner does not think Earth is **exotic** enough to support the **microbes** that Wolfe-Simon is looking for, he does think Saturn's moon Titan is. According to Banner, arsenic is too **unstable** on Earth but is probably more stable in the -290 degrees **Fahrenheit** temperatures of Titan. While phosphorus works on Earth, arsenic might work better for life on Titan if it is there. This shows that Banner believes that arsenic-eating microbes could exist, just not on Earth.*

90 = *Steven Banner does not think Earth is unusual enough to support the life form that Wolfe-Simon is looking for, but he does think Saturn's moon Titan is. Arsenic is too weak on Earth but is probably more stable in the -290 degree temperatures of Titan. Arsenic might work better than phosphorus for life on Titan if it is there.*

80 = *Steven Banner thinks that the life form that Wolfe-Simon is looking for could be found on Titan because the conditions on that moon are different from Earth.*

3. Recall the text "Germ Warfare: Showdown in a Paris Theater" on pages 20–23. How were Wolfe-Simon's experiments flawed in the same way as Félix Pouchet's experiments? What does it tell you about scientists? **[RE, SA]** (Team Talk rubric)

100 = *Wolfe-Simon had the same **flaw** in her **experiment** that Pouchet had in his experiment because both became **contaminated**. Wolfe-Simon and her partners tried to remove all the phosphorus from their sample so only arsenic remained, but this is difficult to do. According to David Sanders, their sample still contained phosphorus, which led to **misleading results** that made it look like the microbes were using arsenic to survive. This tells me that scientists still make the same kinds of mistakes even after a hundred years of **progress**.*

90 = *Wolfe-Simon had the same problem in her test that Pouchet had in his test because both became spoiled. Wolfe-Simon and her partners tried to take the phosphorus out of their sample so only arsenic was left, but this is hard to do. David Sanders found that their sample still had phosphorus in it, which made it look like the microbes were using arsenic to live.*

80 = *Both Pouchet and Wolfe-Simon had experiments that became spoiled and gave them wrong answers. Other scientists proved both of them wrong.*

*continued*

Team Talk Questions *continued*

4. Carl Sagan said, "Extraordinary claims require extraordinary evidence." Which of the following best explains his statement? **[CV, RE]** (Team Talk rubric)
- Scientists need to provide very convincing evidence if they want to be taken seriously.
  - If a scientist is going to make a wild claim, his or her research should also be wild.
  - Scientists should stick to making safe claims that no one can argue against.
  - The world should be willing to accept any theory from scientists without question.

Describe how one of the feuds in Rage or Reason? When Scientists Feud could have benefitted from Carl Sagan's statement.

100 = *Had Curtis been able to provide **extensive evidence** to support his **claim** that the universe was much bigger than just the Milky Way galaxy, he might have convinced Shapley to accept his idea. Shapley **rejected** the idea that there was anything in the universe outside of the Milky Way. He even rejected the findings of his assistant. **According to the text**, Curtis's observations of spiral nebulae led him to believe that they were distant galaxies, but it does not seem like he had a lot of evidence to support his argument. Shapley's **acceptance** of Hubble's findings shows that if Curtis had had the same evidence, then Shapley might have accepted his claim earlier.*

90 = *Had Curtis given proof that the universe was much bigger than just the Milky Way galaxy, he might have convinced Shapley to agree. Shapley threw out the idea that there was anything in the universe outside of the Milky Way. He even tossed out the findings of his assistant. Curtis's studies of spiral nebulae showed him that they were distant galaxies, but it does not seem like he had enough proof to support his argument.*

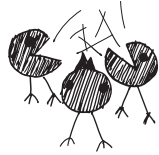
80 = *Curtis and Shapley disagreed about the size of the universe, but Curtis was unable to prove his ideas to Shapley, so their feud continued until Hubble found the proof.*

5. What vocabulary word belongs in the blank? How do you know? **[CV]**  
 Many scientists believe that the ability to roll your tongue into a tube is \_\_\_\_\_, but others have trouble finding the evidence in family history.  
 Hereditary. *The phrase family history is a clue because if something is hereditary, then it is passed from parents to offspring.*

- Have students thoroughly discuss Team Talk questions before they write individual answers to the skill question marked "(Write)." Allow students to revise their written answers after further discussion if necessary.
- Prompt teams to discuss comprehension problems and strategy use (their sticky notes), important ideas that they added to their graphic organizers, and words that a team member added to the word power journal.
- Circulate and give feedback to teams and students. Use rubrics to give specific feedback. Ask questions to encourage further discussion. Record individual scores on the teacher cycle record form.

Cue students to discuss strategy use, graphic organizers, and word power journals.

7. If some teams finish ahead of others, have them practice their fluency.
8. Award team celebration points for good team discussions that demonstrate 100-point responses.



## Class Discussion tp

(20 minutes)

**Randomly select team representatives who will share:**

- strategy use
- oral and written Team Talk responses
- word power discussions
- fluency selection



### Lightning Round

1. Use **Random Reporter** to have teams share strategy use, oral and written Team Talk responses, word power discussions, and fluency. Ask other teams to agree, disagree, or add on to responses.
2. Use rubrics to evaluate responses and give specific feedback. Award team celebration points for 100-point responses. Record individual scores on the teacher cycle record form.

### Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Celebrate team successes!

The top team chooses a cheer.

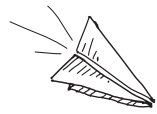
Remind students of the Read and Respond homework assignment.

## Lesson 5

**Writing Objective:** Establish and maintain a formal style.

### Teacher Background

Students should continue the writing practices that you discussed in cycle 1.



## Active Instruction

(10 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams discuss their vocabulary ratings.



Review Vocabulary Vault.

Teams review their cycle goal.

Post and present the writing objective.

Introduce the writing project.

### Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rerate their knowledge of each vocabulary word as they arrive for class.
2. Spot check the Read and Respond homework.

### Vocabulary

1. Have teams discuss their ratings of the words. Ask teams to make a tent with their hands when they are ready to tell a word the entire team rated with a “+” and a word the entire team rated with a “?”.
2. Use **Random Reporter** to have the teams share one word that they know and one word that they need to study further. Use **Random Reporter** to have teams report on a new sentence using a vocabulary word. Award team celebration points.
3. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.

### Set the Stage

1. Ask students to review their team's goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and writing objective.
4. Remind students that they are writing to establish and maintain a formal style. Point out that they will write informative pieces that should be free from opinions and should contain any technical language used in the text that they reference for writing.
5. Refer students to the following writing prompt in their student editions. Read the writing prompt aloud.

Read the prompt aloud.



Students identify the purpose for writing.

Refer students to the appropriate writer's guide in their student editions.

Highlight the writing objective.

Writing Prompt
Using the information on pages 10 and 11, explain why scientists have found arsenic less suitable than phosphorus for supporting life.

Use **Think-Pair-Share** to ask:

**Read the prompt. What is it asking you to do: support a claim with reasons, explain ideas or information on a topic, or write a literary response? How do you know?**

*The prompt is asking me to explain ideas or information on a topic. I know because it asks me to explain something that I read about in the text. It is asking me to describe information that scientists have discovered.*

- Refer students to the following writer's guide in their student editions. Point out that this guide for writing to inform or explain is the criteria for writing. Point out that using the writer's guide will help them write a quality response.

Writing to Inform or Explain	
<b>Ideas</b>	<ul style="list-style-type: none"> <li>Clearly introduce the topic.</li> <li>Develop the topic with relevant details.</li> </ul>
<b>Organization</b>	<ul style="list-style-type: none"> <li>Begin by introducing the topic.</li> <li>In the middle, provide facts, examples, or events that help a reader understand the information.</li> <li>End with a closing statement that supports the information.</li> </ul>
<b>Style</b>	<ul style="list-style-type: none"> <li>Use words and phrases that help a reader understand how the facts or events are related.</li> <li>Include details or examples that help a reader make a mind movie.</li> </ul>
<b>Mechanics</b>	<ul style="list-style-type: none"> <li>Use correct punctuation, capitalization, spelling, and grammar.</li> </ul>

Briefly review the guide, noting the four aspects of writing: ideas, organization, style, and mechanics.

Use **Think-Pair-Share** to ask:

**Which guideline relates to our writing objective: to establish and maintain a formal style?**

*The first style guideline. We should be using words from the text and other phrases to create a formal writing style.*

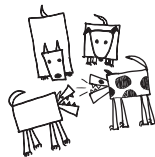
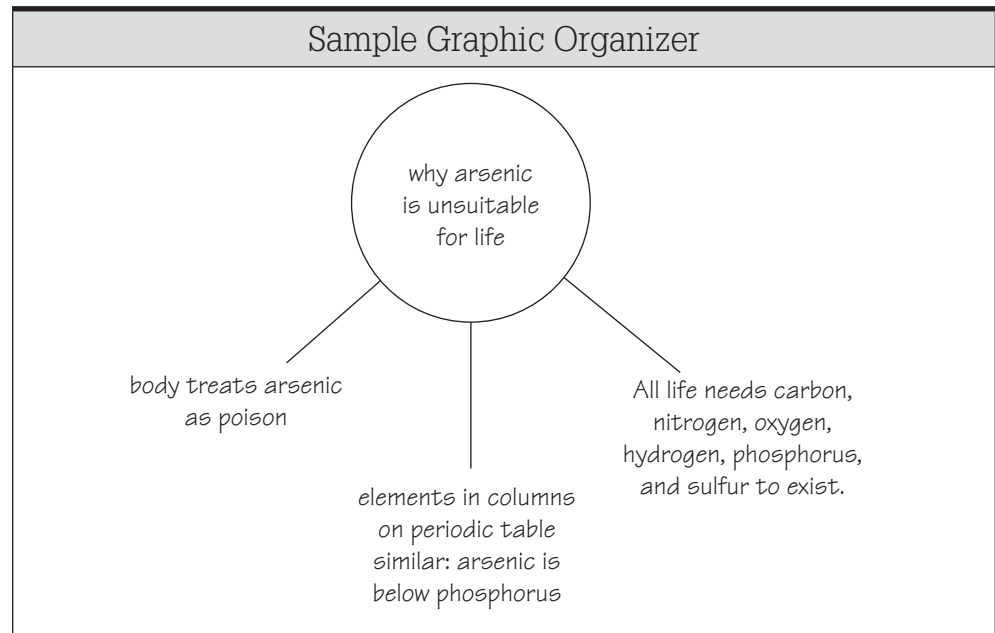
- Tell students that this 10-minute writing project is practice to prepare them to write a quality answer for the writing section (part II) of the cycle test. Remind them that this section of the test is worth one third of their test score.

Model planning using a graphic organizer.

### Model a Skill

Remind students that the first step in the writing process is planning, or prewriting. Model using the writing prompt and the writer's guide to create a prewriting graphic organizer. Point out that planning helps them organize their ideas and makes drafting easier, especially when a topic is difficult or unfamiliar to the writer.

Point out that you are using a web to organize your writing, but students may find different organizers helpful to them for organization.



## Teamwork tp

(20 minutes)

### Independent Work

Tell students that they have 10 minutes to plan and write drafts of their responses to the writing prompt. Remind them to write on every other line to leave room for revisions. Suggest that they refer to the writing prompt to be sure that they include all the required elements and to the writer's guide to check the quality of their response.

### Team Discussion

1. Refer students to the peer feedback checklist in their student editions, and review how to get/give feedback.
2. Have students share their drafts in teams. Allow 5 minutes for students to revise their writing projects based on feedback and to edit them using the editing checklist in their student editions.

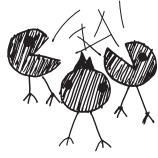
Students write for 10 minutes.

Monitor discussions as partners and teams give feedback.

Students revise and edit their writing projects.



3. Have teams put their writing projects in a pile in the middle of their tables so a writing project can be randomly selected.



## Class Discussion

(30 minutes)

Display and evaluate randomly selected writing projects using the writer's guide.

### Lightning Round

Randomly select a writing project from one or two teams' piles without revealing their authors. Display a writing project, and read it aloud.

Refer students to the writer's guide for writing to inform or explain and the writing objective—to establish and maintain a formal style.

Using the writer's guide, discuss and evaluate the selected writing project(s) with the class.

For example, ask:

- **Does the writer introduce the topic clearly?**
- **Does the writer include facts and examples to help a reader understand the information?**
- **Does the writer end with a closing statement that supports the information?**
- **Does the writer use appropriate academic language and full sentences?**
- **Does the writer maintain a formal style and keep his or her language objective?**

Award points to teams whose writing projects meet the criteria. Record these points on the team poster.

### Reflection on Writing

Have students reflect on their use of the writing process. Ask:

**How did creating and using a graphic organizer work for you? How did it help you write your draft?**

*Answers will vary.*

**What was the most useful feedback that you received? How did it affect your revisions?**

*Answers will vary.*

**Were you able to explain the topic clearly while still using technical language from the text?**

*Answers will vary.*



Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.

### **Celebrate**

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

## Writing Prompt

Using the information on pages 10 and 11, explain why scientists have found arsenic less suitable than phosphorus for supporting life.

<b>Writing to Inform or Explain</b>	
<b>Ideas</b>	<ul style="list-style-type: none"> <li>• Clearly introduce the topic.</li> <li>• Develop the topic with relevant details.</li> </ul>
<b>Organization</b>	<ul style="list-style-type: none"> <li>• Begin by introducing the topic.</li> <li>• In the middle, provide facts, examples, or events that help a reader understand the information.</li> <li>• End with a closing statement that supports the information.</li> </ul>
<b>Style</b>	<ul style="list-style-type: none"> <li>• Use words and phrases that help a reader understand how the facts or events are related.</li> <li>• Include details or examples that help a reader make a mind movie.</li> </ul>
<b>Mechanics</b>	<ul style="list-style-type: none"> <li>• Use correct punctuation, capitalization, spelling, and grammar.</li> </ul>

## Lesson 6

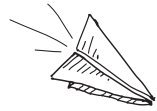
**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

**Writing Objective:** Establish and maintain a formal style.

### Teacher Background

Today students will continue to make connections between people, ideas, and events across the texts that they read in cycles 1 and 2 in *Rage or Reason? When Scientists Feud*.

Today students will read about a feud between Albert Einstein and Robert Millikan that ended very differently from other feuds in the text. The information in today's reading shows that when scientists are humble and keep their cool, they can reach conclusions that mutually benefit their work.



## Active Instruction tp

(5 minutes)

Students use the vocabulary study routine to rate their knowledge of each vocabulary word:

- + I know this word and can use it.
- ✓ This word looks familiar; it has something to do with...
- ? I don't know this word; it's totally new to me.

Teams review their cycle goal.

Post and present the reading and writing objectives.

Review Vocabulary Vault.

### Partner Vocabulary Study

1. Display the vocabulary words. Have students use the vocabulary study routine as they rerate their knowledge of each vocabulary word as they arrive for class.
2. Spot check the Read and Respond homework.

### Set the Stage

1. Ask students to review their team's goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Remind students of the texts, authors, and reading and writing objectives.
4. Remind teams that if they find a word from the vocabulary list used in another place, such as in a magazine, textbook, TV ad, etc., they can bring in or copy the sentence in which the word was used and put it in the Vocabulary Vault to earn team points.



## Prepare Students for the Test tp

(5 minutes)

### Partner Review

1. Remind students that they have been practicing using strategies to help identify important information and the relationship of ideas, and establishing and maintaining a formal style. Tell students that they will use this skill as they take the cycle test.
2. Have partners review their notes and word power journals for this cycle. Allow 2 or 3 minutes for this activity.

### Test Directions

1. Remind students that the test is independent work. Students should not ask their partners for help as they read, but they may use sticky notes if they would like.
2. Distribute the test so students can preview the questions. Point out that some of the test questions are multiple choice for which they will choose the best answer. Other questions require them to write a short answer or create a graphic organizer. Part II of the cycle test requires them to write a long answer. Remind them that their writing project was practice for writing the long answer for part II of the test.
3. Point out that questions #2 and #4 ask about the relationship of ideas.
4. Ask students to identify key words or phrases in question #2.

2. Compared with the other arguments you read about in *Rage or Reason? When Scientists Feud*, how did the conflict between Einstein and Millikan work out? Support your thinking with evidence. **[RE, MI, SA]**

5. Introduce the text that students will read. Tell what it is about, but do not give additional information or details.

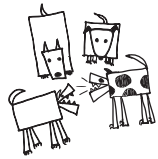
**Today you will read about one last feud that had a happy ending for everyone involved.**



## Test tp

(30 minutes)

Tell students that they have 30 minutes for the test and that they may begin. Give students a 5-minute warning before the end of the test.



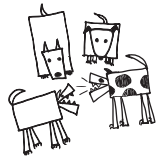
## Teamwork tp

(10 minutes)

Teams discuss the answers to the test questions.

### Team Discussion

1. Pass out a colored pen to each student.
2. Explain or review, if necessary, the student routine for team discussions after the test.
3. Have teams discuss their answers to the test questions. As you monitor team discussions, ask additional questions to prompt their thinking about the important ideas in the reading and about the skills and strategies that they have been using.



## Class Discussion tp

(10 minutes)

Random Reporters share team discussion of a test question.



### Lightning Round

1. Use **Random Reporter** to have teams share team discussions of the test questions and explain their thinking.
2. Award team celebration points.
3. Collect test answers. Score original answers, and add extra points for improved answers.

### Celebrate

1. Tally the team scores on the poster, and celebrate teams that are accumulating points. Have teams reflect on the following questions:

**How many points did your team earn today?**

**How can your team earn more points?**

Remind students that top-scoring teams will earn bonus points that will be added to their cycle scores.

- Something to cheer about: Choose a behavior or learning outcome that you would like to reinforce, and reward that behavior by asking students to lead a cheer of their choice.
2. As a reminder, refer students to the Read and Respond homework assignment described in their student editions.

Celebrate team successes!

The top team chooses a cheer.

Remind students of the Read and Respond homework assignment.

**Cycle 2 Test****Make Connections**

**Directions:** Read “Einstein vs. Millikan: Right and Wrong Win the Prize,” pages 38 and 39. Use the TIGRRS process, and answer the following questions on a separate piece of paper.

Some of the questions are based on today’s reading, and other questions are about the text that you read in previous lessons. You may refer to your notes from this cycle and the previous cycle.

**Part I. Comprehension** (100 points)

1. What is the topic?

*5 points = The topic is an argument between Albert Einstein and Robert Millikan.*

What is the author’s intent?

*5 points = To inform readers about an argument between Einstein and Millikan and who won it.*

Write a short summary of the text. Include the graphic organizer or notes that you used to organize the information and your thoughts. **[MI, AP]**

*10 points = Albert Einstein introduced the idea that light was a particle in 1905. Most scientists at the time believed that light acted as a wave. Robert Millikan was determined to prove Einstein wrong, so he experimented with his theory for ten years. Millikan learned that light can act as a particle and as a wave. As a result of their work, Einstein won a Nobel Prize for his theory about light particles, and Millikan won a Nobel Prize for proving it.*

2. Compared with the other arguments you read about in Rage or Reason? When Scientists Feud, how did the conflict between Einstein and Millikan work out? Support your thinking with evidence. **[RE, MI, SA]**

*20 points = Einstein and Millikan **benefitted** from their feud because both scientists won Nobel Prizes from their work based on Einstein’s **controversial** theory. **Although** Millikan was trying to prove Einstein wrong, he **eventually** admitted that Einstein was correct and said it was one of the most **fundamental theories** in physics. Einstein **appreciated** Millikan’s work to prove his theory. Most other scientific battles didn’t end as well, and the scientists involved did not benefit equally. Einstein’s and Millikan’s **abilities** to admit when they were wrong and to appreciate each other’s work helped to advance science.*

*15 points = Einstein and Millikan were helped by their feud because both scientists won Nobel Prizes from their work based on Einstein’s idea. Millikan was trying to prove Einstein wrong at first, but he later admitted that Einstein was correct. Einstein was thankful for Millikan’s work to prove his idea. Most other scientific battles didn’t end well, and the scientists did not help one another as much.*

10 points = *Einstein and Millikan were helped by their feud because their work to create and prove an idea earned them both Nobel Prizes. Most other scientific feuds did not end well or help both scientists involved.*

3. In “Lab Wars” on pages 6–9, Robinson argued that feuds benefitted science. How do you think he would feel about the feud between Einstein and Millikan? Support your thinking. **[RE, SA]**

20 points = *Robinson would probably agree that the feud between Einstein and Millikan benefitted science. He argued that **opposing parties** would have to work hard to make their **case** for why the **theory** was wrong or why another theory was better. This is exactly what Millikan did when Einstein **theorized** that light was a particle. Millikan worked for ten years to prove Einstein wrong, but all the **data** that he collected proved Einstein right. In the end, Millikan’s experiments led to the **technology** in television cameras, fax machines, and digital cameras. This shows that their feud benefitted science and technology for everyone.*

15 points = *Robinson would agree that the disagreement between Einstein and Millikan helped science. He said that scientists who disagreed would have to work hard to show why an idea was wrong. This is what Millikan did when Einstein said that light was a particle. He worked for ten years to prove Einstein wrong, but all the information that he collected proved Einstein right. Millikan’s experiments led to the technology in television cameras, fax machines, and digital cameras.*

10 points = *Robinson would agree because the feud between Einstein and Millikan helped to prove an important scientific idea. Their work has led to the creation of technology that we use every day.*

4. In “Lab Wars,” Robinson described many scientists as egoists. Which of the following best describes Einstein and Millikan based on your reading? **[CV, DC]**
- A. negligent
  - B. conceited
  - C. selfish
  - D. humble

What is the difference between what Robinson said about most scientists and the descriptions of Einstein and Millikan?

20 points = *If most scientists are **egoists**, that means they are **self-centered** or selfish and think that their ideas and opinions are the correct ones. Robinson describes scientists as knowing that they are some of the most intelligent people in the world, so they have big **egos**. **However**, Einstein and Millikan did not seem to have big egos. They both **acknowledged** that they **appreciated** the other’s work and saw the **value** in it. Millikan **eventually** proved Einstein correct, and instead of gloating, Einstein thanked Millikan for his work. Instead of being angry that Einstein was correct, Millikan praised Einstein’s theories. These actions describe men who are **humble rather than self-centered**.*

*15 points = If most scientists are egoists, that means they are selfish and think that their ideas are the right ones. Robinson says scientists know that they are some of the smartest people in the world. Einstein and Millikan both said that they were thankful for the other's work. Millikan proved Einstein right, and instead of bragging, Einstein thanked Millikan. Instead of being angry that Einstein was right, Millikan said good things about Einstein's ideas.*

*10 points = Scientists who are egoists think very highly of themselves, which is why they get into feuds. Einstein and Millikan thanked each other for their work and admitted when they were wrong.*

5. According to the authors of "The Battle of the Currents: AC or DC?" pages 28–31 and "Rosalind Franklin: The Woman Who *Should* Have Won the Nobel Prize," pages 34–36, what was the conflict between the feuding scientists? How did this affect their work? **[RE, MI]**

*20 points = Personality and work-style differences caused many conflicts among these scientists. Edison and Tesla are **described as the technology Odd Couple** because they learned differently, worked differently, and dressed differently. Their feud constantly led to **competition** instead of **collaboration**. The **relationship** between Franklin and Wilkins is described as oil and water. Franklin was **argumentative** while Wilkins was quiet. Wilkins was able to **claim** some of the **credit** for Franklin's work even though they did not really work together. **This shows that their personality differences made it difficult for them to work together to benefit science even though their individual work did.***

*15 points = Personality differences caused the disagreements between Thomas Edison and Nikola Tesla and between Rosalind Franklin and Maurice Wilkins. Edison and Tesla were the technology Odd Couple because they learned, worked, and dressed differently. Their disagreement led to them trying to beat each other's inventions. Franklin and Wilkins are described as oil and water. She argued while he was quiet. Wilkins was able to take some of the praise for Franklin's work after she died.*

*10 points = Personality differences caused the feuds between Edison and Tesla and between Franklin and Wilkins. The scientists in each pair were the opposites of each other, making it difficult for them to work together.*



**Part II. Writing** (100 points)

Write at least one paragraph to answer the following question:

Using the information on page 39, explain what the photoelectric effect is and how it changed our understanding of light.

*The photoelectric effect describes what happens when light strikes certain metals, causing electrons to become excited and burst out of the metal. These electrons can create a stream of electric current. Scientists observed that the brightness of the light striking the metal only changed the number of electrons released from the metal, but not the speed at which they were released. Albert Einstein proposed that by changing the color of the light, you could change the speed at which electrons escaped. For this to work, he theorized that light was made of individual particles, called photons, instead of one constant wave, as was popularly believed at the time. For example, the photons in red light were very low energy and could not knock electrons out of most metals, but high-energy violet photons could knock electrons loose. A more intense or brighter violet light would knock more electrons loose, but at the same speed as the less intense violet light. Although this theory was controversial when it was proposed, Andrew Millikan eventually proved that light could behave as if it were made from individual particles and could also behave as a wave. This understanding has led to the invention of modern televisions, new methods of communicating, and cameras. Einstein's bold theory and support of it paved the way for many useful inventions.*

The following guide is used to score part II of the cycle test.

Writing to Inform or Explain		
<b>Ideas</b>	<ul style="list-style-type: none"> <li>Clearly introduces the topic</li> <li>Develops the topic with relevant details</li> </ul>	<b>0–25 pts.</b>
<b>Organization</b>	<ul style="list-style-type: none"> <li>Begins by introducing the topic</li> <li>In the middle, provides facts, examples, or events that help a reader understand the information</li> <li>Ends with a closing statement that supports the information</li> </ul>	<b>0–25 pts.</b>
<b>Style</b>	<ul style="list-style-type: none"> <li>Uses words and phrases that help a reader understand how the facts or events are related</li> <li>Includes details or examples that help a reader make a mind movie</li> </ul>	<b>0–25 pts.</b>
<b>Mechanics</b>	<ul style="list-style-type: none"> <li>Uses correct punctuation, capitalization, spelling, and grammar</li> </ul>	<b>0–10 pts.</b>
<b>Writing Objective</b>	<ul style="list-style-type: none"> <li>Establish and maintain a formal style.</li> </ul>	<b>0–15 pts.</b>

**Part III. Vocabulary** (100 points)

1. What is a synonym for the word *pulsating*? What is an antonym for the word *pulsating*? **[CV]**

*A synonym for the word pulsating is alternating. An antonym for the word pulsating is constant or steady.*

2. Which of the following are not examples of *particles*? Explain why. **[CV]**
- A. atoms
  - B. molecules
  - C. *pathogens*
  - D. electrons

*Pathogens are not particles because a pathogen is a whole living creature, even if it's a tiny one. Particles are small pieces of something, which the other choices represent.*

3. Write a meaningful sentence using the word *collaboration*. **[CV]**

*Accept responses that show that the student knows the meaning of the word and can use it correctly. For example: The cooking collaboration between my sisters and I created a delicious dinner of chicken salad sandwiches, fresh salsa and tortillas, and ice cream sundaes for dessert.*

4. "While many \_\_\_\_\_ traits are visible, such as the color of your hair, others are invisible, such as whether you are more likely to develop heart disease," Dr. Shuler explained.

Choose the word that belongs in the blank. **[CV]**

- A. pulsating
- B. *hereditary*
- C. ambiguous
- D. methodical

5. 

collaboration	ambiguous
---------------	-----------

How can *collaboration* lead to less *ambiguous* results in scientific experiments? **[CV]**

*Collaboration can lead to less ambiguous results in scientific experiments because scientists may be able to better figure out information together than alone. Together they might be able to make something clearer or make sense out of something difficult to interpret.*

6. Write a meaningful sentence using the word *hypothesis*. **[CV]**

*Accept responses that show that the student knows the meaning of the word and can use it correctly. For example: To start my science fair project, I wrote a hypothesis that stated that for bread to grow moldy, it needed moisture present as it aged.*

7. In which of the following sentences is the word *contaminated* used incorrectly? **[CV]**
- A. The researcher's sample of pure water was contaminated by trace amounts of bacteria.
  - B. *My iced tea was contaminated by sugar, which gave it a refreshing, sweet taste on a hot day.*
  - C. To Justine, the pizza was contaminated by the black olives, making it totally inedible.
  - D. Bottles of medicine have foil seals to ensure that the medicine is not contaminated by anything.

8. What is a synonym for the word *methodical*? What is an antonym for the word *methodical*? **[CV]**

*A synonym for the word methodical is organized. An antonym for the word methodical is disorderly.*

9. What is one word that you or your teammates explored in your word power journal this cycle? Give the meaning of this word, and then use it in a meaningful sentence. **[CV]**

*We explored the word dynamos. A dynamo is an electric generator or a person who is energetic and hard-working. Thomas Edison designed dynamos that provided the electricity to light up New York City for the first time.*

10. As used in the sentence "The Nobel Prize, which is never awarded posthumously, was given to Watson, Crick, and Wilkins," on page 36, *posthumously* most nearly means— **[CV]**

- A. *occurring after death.*
- B. *occurring through the mail.*
- C. *occurring before experimentation.*
- D. *occurring without humor.*

Explain how you figured out the meaning of *posthumously*.

*Students will explain their thinking. For example, I used the context of the rest of the text. The text says that Franklin died from cancer, and the Nobel Prize for her research on DNA wasn't awarded until after she had died. The text also says that Watson believed that she would have been given the award instead of Wilkins if she had lived, so posthumously must mean after death.*

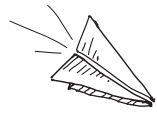
Question Codes			
<b>[DC]</b>	Make inferences; interpret data; draw conclusions.	<b>[AA]</b>	Analyze an argument.
<b>[SA]</b>	Support an answer; cite supporting evidence.	<b>[AP]</b>	Identify author's intent or purpose.
<b>[MI]</b>	Identify the main idea that is stated or implied.	<b>[RE]</b>	Analyze relationships (ideas, story elements, text structures).
<b>[CV]</b>	Clarify vocabulary.	<b>[AC]</b>	Author's craft; literary devices

# Lesson 7

**Reading Objective:** Use strategies to help identify important information and the relationship of ideas.

## Teacher Background

During Class Discussion, students orally present evaluations of their homework reading selections. During Teamwork, students use their Read and Respond notes and answers to the homework questions to make final preparations for these presentations. Team members share their responses and give one another feedback. During the oral presentations, students use their revised responses to the questions to describe the kind of texts they read, the strategies that helped them understand the text, and whether they will recommend their reading selections to others.



## Active Instruction

(20 minutes)

### Two-Minute Edit

1. Display and have students complete the Two-Minute Edit as they arrive for class.
2. Use **Random Reporter** to check corrections. Award team celebration points.

### Vocabulary

Ask teams if they have a Vocabulary Vault word that they would like to share. Award team celebration points.

### Set the Stage

1. Ask students to review their team's goal for this cycle and assess their progress.
2. Review the Team Celebration Points poster, and challenge teams to build on their successes.
3. Have students get out their reading selections and Read and Respond forms. Remind them that today, with the help of their teams, they will each prepare a presentation about their individual reading selections.

Challenge students to think about the strategies and skills that they used to read their self-selected texts, share their answers to the Read and Respond questions, discuss their thinking, and prepare evaluations of their selections.

4. Remind students to add to the notes on their Read and Respond forms as they discuss their selections and prepare oral presentations about their selections. Students will use their answers to the questions on the Read and Respond form as the basis for their presentations.

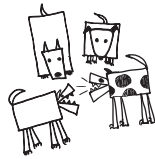
Two-Minute Edit



Vocabulary Vault

Teams review their cycle goal.

Connect the cycle objective to students' homework reading selections.



# Teamwork tp

(25 minutes)

## Team Discussion

1. Tell students that they will use the Read and Respond questions as a guide as they discuss their homework reading and prepare evaluations of their reading selections to share with their teams.
2. As students prepare their answers, check in with those students for whom you do not have individual scores for graphic organizer/notes, written Team Talk responses, word power journal, and/or a fluency score. Have them show you examples from the cycle. Point out areas of success, and give feedback to improve student performance.
3. As you visit teams, take this opportunity to check students' homework for completion (Read and Respond forms). Enter the information on your teacher cycle record form.

### Teacher's Note:

Have students who are ready for a new selection take turns choosing reading material from the classroom library. Make sure that every student has a Read and Respond form for next cycle.

Students prepare, share, and revise presentations about their reading selections.

Give students feedback on classwork.

## Read and Respond Questions

<b>1.</b>	Is your selection informational or literature? Summarize your reading. (summary rubric)
<b>2.</b>	Why did you choose this reading? What is your purpose for reading? (Team Talk rubric)
<b>3.</b>	Choose a word, phrase, or passage that you did not understand at first. How did you figure it out? (strategy-use rubric)
<b>4.</b>	Write down a question that you had or a prediction that you made as you read. Were you able to answer or confirm it? Explain. (strategy-use rubric)
<b>5.</b>	Would you recommend this selection to others to read? State your opinion, and support it with reasons. (Team Talk rubric)
<b>6.</b>	Choose a short section of the text that you think is important or especially interesting. Tell your teammates why you chose it. Read it aloud smoothly and with expression. (fluency rubric)



# Class Discussion tp

(15 minutes)

Team responses  
and feedback



Teams report on their  
review of the texts and Read  
and Respond discussions.

Celebrate team successes!

Final tally for this cycle

Record team celebration  
points on the teacher cycle  
record form.

Collect Read and Respond  
forms for this cycle.

## Lightning Round

Use **Random Reporter** to have students present their evaluations of their homework reading selections (responses to the Read and Respond questions). Use rubrics to evaluate responses, give specific feedback, and award points.

## Celebrate

1. Tally up this cycle's points on the poster.
2. Tell students that their scored tests will be returned at the beginning of the next lesson. Poster points and the teams' test scores will determine which teams earn the status of super team, great team, or good team for the cycle.
3. Be sure to record each team's total celebration points from the poster into the teacher cycle record form. Remind students that team celebration points and team test averages are used to determine team scores.
4. Collect students' Read and Respond forms, and pass out new forms.
5. Tally up the number of Read and Respond signatures on students' forms, and record the number on the teacher cycle record form after class.

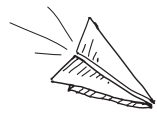
## Lesson 8

**Objectives:** Celebrate successes, and set new goals. Hold a Class Council meeting.

### Teacher Background

In the first part of this lesson, students review their test results and their final scores for the cycle and compare them with their goals. They celebrate success and set new objectives for further improvement.

In the second part of the lesson, students participate in Class Council.



## Active Instruction

(2 minutes)

### Two-Minute Edit

1. Display and have students complete the Two-Minute Edit as they arrive for class.
2. Use **Random Reporter** to check corrections. Award team celebration points.



## Celebrate/Set Goals

(20 minutes)

1. Distribute students' scored cycle tests. Allow a few moments for students to review them.
2. Distribute team score sheets to teams and celebration certificates to students. Remind students that the cycle's top-scoring teams are determined by their points on the poster and their test scores.
3. Recognize and celebrate the super, great, and good teams. Remind the teams of the impact of bonus points that are added to team members' cycle scores.
4. Have each team discuss and set a goal for the next cycle and record it on their team score sheet. Use the questions below to analyze and discuss the students' scores.

**What was your team's highest score?**

**What score do you want to improve?**

**What can the team do to improve that score?**

Two-Minute Edit



Distribute scored cycle tests.

Distribute team score sheets and celebration certificates.

Class celebration! Celebrate team successes with a class cheer.

Each team sets a team goal for the next cycle.



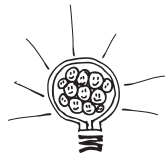


Use **Random Reporter** to ask:

**What is your team's goal for the next cycle? Why did you choose that goal?**

*Accept supported answers.*

5. Use the poster to award team celebration points for responses that include the team's reasons for choosing the goal, thus beginning the accumulation of points for the next cycle.
6. Have students record their cycle test scores and their areas of greatest strength and improvement on their progress charts.



## Class Council

(30 minutes)



1. Share class compliments.
2. Review the class goal that was set at the last Class Council. Using the agreed-upon measure of progress, was the goal met? Why or why not?
3. Discuss a class concern, or use the scenario and discussion hints provided.
4. Have teams discuss and then use **Random Reporter** to share responses.
5. After debriefing how they resolved the problem, help students set a goal and a measure of progress that they can use at the next Class Council.

**Scenario:** Joseph feels like his English teacher doesn't like him. She hardly ever calls on him, and when she does, she doesn't agree with his thoughts and opinions about what the class is reading. What would you do if you were Joseph?

**Discussion Hints:** Teach students that they can use "I" Messages, active listening, and Think-It-Through with adults too. Adults will likely be very impressed by students who solve problems using win-win solutions.



## Brain Game

(5 minutes)

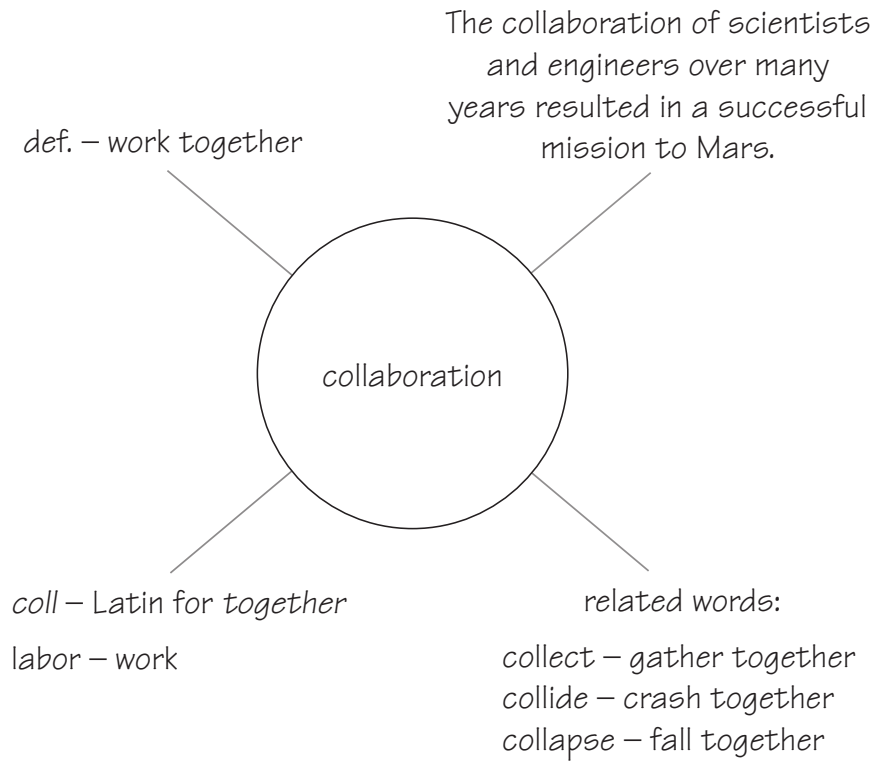
1. Choose a brain game from the card set, and then play the game.
2. Use the following questions to debrief and remind students of self-regulatory strategies:

**What did this game require your brain to do?**

**How will use of this skill improve your success in other classes?**

Word Power Journal Sample Entries

**Sample Word Map  
Cycle 2**



# Step Up to Research

1. Team score sheets for this unit should be distributed during lesson 1. Students will use this modified version of the team score sheet to review their goals, track their progress through the six-step research process, and tally team celebration points throughout each lesson.
2. All teams will have the same team goal for this unit—to earn as many team celebration points as possible.
3. The teacher cycle record form has also been modified for the research unit.
  - Track student completion of the research steps, using check marks to indicate done or not done.
  - Note the writing purpose that each student selects to evaluate the individual research presentations.
  - Record the writing/presentation score for each student based on the scoring guide for writing that each student chose. This is the only score from the research unit that will roll up into the averages on the classroom assessment summary for the grading period.
  - Record tallies for completion of Read and Respond homework.
4. This is a short, focused research opportunity. While a two- to three-page written product and a three- to five-minute presentation are recommended at this level, please consider your available time and research materials and your students' Internet access and needs when choosing a product that is appropriate for your class.

## Unit Overview

The purpose of the research unit is for students to ask questions, find and organize information, and present their findings to others. Students will present their answers in the form of a research product. Level 8 students will each write two to three pages to answer the research question and include at least one text feature to help inform the reader. The text features can be anything that supports the information in their research product, for example, a photograph, drawing, graph, or audio recording. Students will present their findings in a three- to five-minute presentation.

In this lesson, students will be introduced to the research process using a routine based on the Question Formulation Technique (Rothstein, 2012). After students ask questions, they will prioritize and refine their questions, narrowing their list to three researchable questions. Using the Research Question Checklist and team discussion, each student chooses one that they would like to explore through research.

As part of this lesson, you will introduce the difference between open-ended and closed-ended questions. As students learn to refine their questions, we want them to consider how the type of questions they ask can impact their research and, ultimately, their research product.

You will also instruct students on common research skills: taking notes, citing sources, and avoiding plagiarism. There are three common note-taking methods that are used for researching.

- Use a web. The research question is entered in the center and information is added to branches. Note the source information.
- Use notecards. Students record information on one side of the card and the source information on the other. Notecards can easily be arranged and rearranged to match the sequence of information in students' first drafts.
- Use a digital log. This can only be used if students have regular access to a digital device. Students keep a growing log or web with their information and sources as they would if they were using one of the other two methods. However, students may color code information to track connections and easily make edits as they work.

Use your school's format for citations and bibliographies or the format included in this lesson.

You may want to visit Ask Smithsonian: [www.smithsonianmag.com/video/Introducing-Ask-Smithsonian.html](http://www.smithsonianmag.com/video/Introducing-Ask-Smithsonian.html). This optional video is useful in motivating students to ask questions. Students can utilize the website to ask their own questions.

# Lesson 1

## Teacher Background

This unit's focus is "I love the idea that different branches of science are called 'fields of study.' Most people think of science as a closed black box, and in fact, it is an open field and we are all explorers." — Adam Savage

This unit's mini-lesson is on common research skills: taking notes, citing sources, and avoiding plagiarism.

In the introductory unit, students answer a Big Question as they enter the classroom. In subsequent research units, the research focus will be posted, and students will generate questions as they enter the classroom.

## Big Question (5 minutes)

1. Post and present today's Big Question. Have students write a response to the question as they arrive for class.

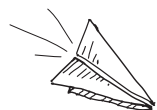
**The Big Question:** How do you get people to consider your opinions?

2. Refer students to today's Big Question. Use **Think-Pair-Share** to ask:

### How do you get people to consider your opinions?

*I get people to consider my opinions by supporting them with a lot of convincing evidence.*

3. Post and present the research purpose. Tell students that this unit will be different from the reading units. They will use the books that they have just read in the last unit to ask questions, search for answers, and present their findings to others.



## Active Instruction tp

## Generate Questions (15 minutes)

1. Present the research focus. Have students write their focus-related questions as they enter the classroom.

**Research Purpose:** In this unit, you will ask questions, find and organize information, and present your findings to others.

**Research Focus:** "I love the idea that different branches of science are called 'fields of study.' Most people think of science as a closed black box, and in fact, it is an open field and we are all explorers." — Adam Savage

2. Explain to students that they will now be the ones asking most of the questions. They will start by asking as many questions as they can about this idea or focus:

Students write responses to the Big Question.

Discuss the Big Question.



Post and present the research focus.

“I love the idea that different branches of science are called ‘fields of study.’ Most people think of science as a closed black box, and in fact, it is an open field and we are all explorers.” — Adam Savage

3. Introduce the student routine based on the Questioning Formulation Technique (Rothstein, 2012) for generating lots of questions.

	First	Next	Next	Next
<b>QFT</b> Asking Questions	Ask as many questions as you can.	Do not stop to answer, discuss, or judge the questions.	Write down every question just as you hear it. If a teammate makes a statement, turn it into a question.	Make sure that every teammate is ready to share one or two questions with the class.



4. Use **Think-Pair-Share** to ask:

**Why will it be difficult to follow this routine?**

*Answers will vary. It will be hard to come up with lots of questions related to the focus. (Remind them to think about the articles in the magazine that they read in the last unit.) We may want to answer our questions as we think of them, or it may be hard not to talk about the questions.*

Encourage students to stick to the routines.

5. Have teams use the QFT routine to write as many questions about the research focus as they can in ten minutes.
6. Use **Random Reporter** to select a student from each team to share a question or two.
7. Explain the two basic types of questions. Point out that the types of questions students ask may impact their research and the amount of information that they find.



Discuss closed-ended and open-ended questions.

Sample Think Aloud
<p>How you ask a question can influence the kind of answer that you get. For example, some questions are closed-ended, and some are open-ended. Closed-ended questions have one-word answers, like yes or no, for example, “Did you do your homework?”</p> <p>Open-ended questions have answers that are longer and more descriptive, for example, “Why didn’t you do your homework?”</p> <p>While both types of questions are encouraged when reading, open-ended questions are more appropriate for research because you have more information to search through and write about.</p>

Post and present the research product.

**Prioritize and Improve Your Questions** (10 minutes)

1. Present the research product:

**Research Product:** You will write two to three pages that answer your research question and include at least one text feature that helps to inform the audience. You will prepare and deliver a three- to five-minute presentation of your findings.

2. Refer students to the routine for choosing a research question and the Research Question Checklist.

	First	Next	Next	Next
<b>Choose a research question.</b>	Each student writes down up to three researchable questions.	Student 1 reads his or her questions.  Teammates use the Research Question Checklist to discuss which question is most researchable.	Teammates continue until everyone has read his or her questions and received feedback.	Each student chooses one question to research.  Each team makes sure that all teammates are ready to share their research questions with the class.

Research Question Checklist	
<b>Is the question interesting and important?</b>	<ul style="list-style-type: none"> <li>• Does the question help me learn something new?</li> <li>• Is the question open-ended?</li> </ul>
<b>Do I need to narrow down the question?</b>	<ul style="list-style-type: none"> <li>• Can the question be answered with the materials available to me?</li> <li>• Can I answer the question in the time that I have to complete my research?</li> </ul>

Distribute the research materials.

3. Distribute copies of *Odyssey* magazine: *Rage or Reason? When Scientists Feud* from the previous unit. Tell students that they will use this magazine to look for answers. Explain that reviewing the articles will help students eliminate some questions that they may not have enough information to answer.  
  
(Optional:) Display any other materials that students may use, and discuss computer use if available.
4. Have students share their questions with their teams and discuss how realistic it is to research each question, given the time and materials available. Teammates help one another narrow down questions to make them more researchable. Each student chooses one question to research.

5. Refer students to the Writing to Support a Claim with Reasons and Writing to Inform or Explain scoring guides. Explain that they need to choose the guide based on the research product and question. Post the sample research questions and model identifying which guide to use.

Post the sample questions.

1. Is controversy helpful or harmful for scientific discovery?
2. What is arsenic?

Sample Think Aloud

(Read the first question.) This question asks about taking a position on the effects of scientific controversy. When I answer it, I will have to state a position—that I think it is helpful or I think it is harmful. I will also have to include good reasons that support my position, so I would use Writing to Support a Claim with Reasons to guide my research and writing of the product.

(Read the second question.) This question asks what arsenic is. When I answer it, I'm just explaining what arsenic is. I don't need to make a statement or claim. I need to provide facts, examples, or events that help others understand the information. For this question, I will use Writing to Inform or Explain to guide my research and writing of the product.



Distribute team score sheets.

6. Have students consider their research question and identify which scoring guide they will use. Use **Random Reporter** to share responses.
7. Refer students to the team score sheets. Explain that the team score sheet for research is used to track their progress through each step of the research process and is used to record team celebration points. Have students review their research purpose, team goal, and team cooperation goal for this cycle. Tell teams to discuss how they are going to earn more team celebration points during this unit, and have them write that goal in the allotted space.
8. Explain to students that they will earn super, great, or good team status based only on the team celebration points that they earn in this unit.
9. Tell students that the only score they will earn this cycle is a writing score that will be based on the scoring guide that they select for evaluation of their research presentation.
10. Tell students to initial each step of the writing process as it is completed during the unit.





### Interactive Skill Instruction (25 minutes)

1. Present the mini-lesson on note-taking, citing sources, and plagiarism.
2. Remind students of the graphic organizers they use to take notes while they read. Explain that taking notes for a research project is similar except that they must also be careful to write down exactly where the information was found.
3. Explain that there is an old expression that says, “Give credit where credit is due.” Use **Think-Pair-Share** to ask:

#### What do you think that means?

*(Answers will vary.) To give credit means to acknowledge what someone has done.*

Explain that intellectual property, or someone’s work, can be stolen too. Point out that when you use words that someone else wrote without giving them credit, that’s a kind of robbery called plagiarism.

4. Review the steps for avoiding plagiarism.

Display the steps for avoiding plagiarism.

Blackline master provided.

Step Up to Research

### Citing Sources and Avoiding Plagiarism

Follow a few simple steps to avoid plagiarism.

- 1. Take detailed notes.**
  - Keep track of your ideas and the ideas of others by labeling them in your notes.
  - In your notes, keep track of where you found information: write down the author, the title, the page number, and the publication date of the book, website, or periodical.
- 2. Give credit to other’s work.**
  - When you use someone else’s ideas or information, put them in your own words. Record the source (author and date) in parentheses at the end of the sentence or paragraph.
  - Use quotation marks when you use someone else’s exact words.
- 3. Make a bibliography.**
  - This is an alphabetized list of all the sources used to find information for a report or research paper. It always comes at the end of the report or research paper. The bibliography entries include all the information that someone would need to find the original source.
  - Use the correct format for each type of source.

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**For a book, follow this format:**  
Author (last name, first name). Date of publication. Title of book or article. Publisher. Location of publisher.

Here is an example of a quote that a student used in a presentation about life in India:  
 “Mahatma Gandhi taught that it is right to hate what is unjust but wrong to hate people.”  
 (Kalman, 2010)

This is how the student wrote the entry in his bibliography:  
 Kalman, Bobbie. 2010. *India, The People*. Crabtree Publishing Company. New York.

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**For an Internet site, follow this format:**  
Title of site or article on site. Name of organization that has the website. Date that you found the information. URL address.

Here is an example of how the same student used a website for information:  
 The official name of this country is the Republic of India. It covers 3.29 million square kilometers or about one-third the size of the United States. (U.S. Department of State Fact Sheet, 2012)

This is how he wrote the entry in his bibliography:  
 Background Note: India. U.S. Department of State. April 17, 2012. [www.state.gov](http://www.state.gov)

Discuss note-taking.

5. Refer students to Sample Notes in their student editions. Tell students that Sample Notes shows examples of how students could take notes on a paragraph about the geography of India. Point out that the source is listed at the bottom of the web.

Blackline master provided.

Step Up to Research

### Sample Notes

3,29 million sq. km      1/3 size of U.S.

Geography of India

Himalayas—mountains      flat river valleys, deserts in west

(Source: Background Note: India, U.S. Department of State, April 17, 2012. www.state.gov)

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### Sample Note Cards

Country – Republic of India
Capital – New Delhi
Geography – 3,29 million sq. km, about 1/3 U.S.
Mountains (Himalayas), West – flat river valleys and deserts

Source: Background Note: India, U.S. Department of State, April 17, 2012. www.state.gov

(Optional)  
Discuss notecards.



6. If students will be using notecards, provide the following instruction:
  - Notes and facts go on one side of the card—in the student’s own words or in quotations if using the source’s exact words.
  - Source information goes on the reverse side of the card.
  - After initial research is done, students review the information, choose the bits that they will use, and put those cards in order to help them organize the first draft.
7. Next have partners work together to identify a page in one of the provided sources that they think might be useful. Have them discuss what they might add to the web or notecard and how they would cite the source.
8. Use **Random Reporter** to share team practice answers, and then award team celebration points.
9. Present the target(s) for scoring from the scoring guides: ideas, organization, style, and mechanics.

### Sample Think Aloud

For each research product, we will target a specific part of the scoring guide. This is something that we will want to include in our research and work on improving as we make changes to our product. For students who are using the Writing to Support a Claim with Reasons guide, the target is to clearly state a position (claim) and include good reasons that support that position. For students using the Writing to Inform or Explain guide, the target is to clearly introduce the topic. Notice that both targets are related to ideas in the scoring guides.

Encourage partners to share relevant information.

Blackline master provided.

**Start Digging** (10 minutes)

1. Have students use the research materials to search for information, and have them use a **graphic organizer** or notecards to make notes and record source information. For example:

**Step Up to Research**

**Sample Notes**

```

    graph TD
      A[3,29 million sq. km] --- B[Geography of India]
      C[1/5 size of U.S.] --- B
      D[Himalayas-mountaine] --- B
      E[flat river valleys, deserts in west] --- B
          
```

(Source: Background Note: India, U.S. Department of State, April 17, 2012, www.state.gov)

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**Sample Note Cards**

Country – Republic of India	Source: Background Note: India, U.S. Department of State, April 17, 2012, www.state.gov
Capital – New Delhi	
Geography – 3,29 million sq. km, about 1/5 U.S.	
Mountaine (Himalayas), West – flat river valleys and deserts	

2. Ask students to write the research question in the center of the web or on the first notecard.
3. Circulate, check students' progress, and record each completed step on the teacher cycle record form. Spot check the Read and Respond homework.
4. Commend students for their progress through the research process during the lesson as recorded in the Research Process section of their team score sheets.
5. Add up the team celebration points earned by each team during the lesson, and record them on the Team Celebration Points poster.

Remind students of the Read and Respond homework assignment.

## Step Up to Research

# Citing Sources and Avoiding Plagiarism

Follow a few simple steps to avoid plagiarism.

### 1. Take detailed notes.

- Keep track of your ideas and the ideas of others by labeling them in your notes.
- In your notes, keep track of where you found information: write down the author, the title, the page number, and the publication date of the book, website, or periodical.

### 2. Give credit to other's work.

- When you use someone else's ideas or information, put them in your own words. Record the source (author and date) in parentheses at the end of the sentence or paragraph.
- Use quotation marks when you use someone else's exact words.

### 3. Make a bibliography.

- This is an alphabetized list of all the sources used to find information for a report or research paper. It always comes at the end of the report or research paper. The bibliography entries include all the information that someone would need to find the original source.
- Use the correct format for each type of source.

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Author (last name, first name). Date of publication. Title of book or article. Publisher: Location of publisher.

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This is how the student wrote the entry in his bibliography:

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#### For an Internet site, follow this format:

Title of site or article on site. Name of organization that has the website. Date that you found the information. URL address.

Here is an example of how the same student used a website for information:

The official name of this country is the Republic of India. It covers 3.29 million square kilometers or about one-third the size of the United States. (U.S. Department of State Fact Sheet, 2012)

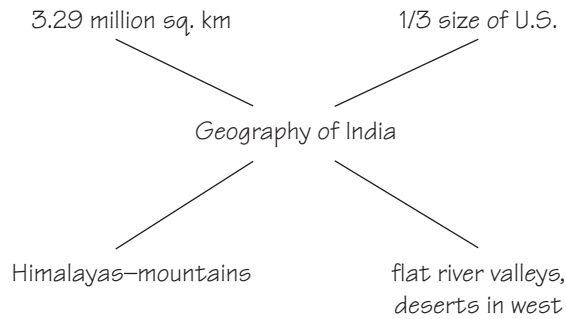
This is how he wrote the entry in his bibliography:

Background Note: India. U.S. Department of State. April 17, 2012. [www.state.gov](http://www.state.gov)

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## Step Up to Research

### Sample Notes



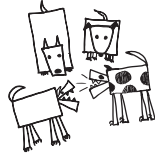
(Source: Background Note: India. U.S. Department of State. April 17, 2012. [www.state.gov](http://www.state.gov))

### Sample Note Cards

Country – Republic of India
Capital – New Delhi
Geography – 3.29 million sq. km., about 1/3 U.S.
Mountainous (Himalayas), West – flat river valleys and deserts

Source:  
 Background Note: India. U.S. Department of State.  
 April 17, 2012. [www.state.gov](http://www.state.gov)

## Lesson 2



# Teamwork

## Keep Digging: Search and Process (50 minutes)

1. Have students review their research purpose, team goal, and team cooperation goal as recorded on their team score sheets. Remind teams that they will earn super, great, or good team status based on how many team celebration points they earn.
2. Remind students that their product should include a text feature. Explain that it should support the content of their research. Tell them that they can create one or use one they find during their research.

### Sample Think Aloud

Remember that the product includes a text feature. The text feature can be anything that supports the information that you are writing about, such as a photograph, picture, graph, or audio recording. You might find one that you can use as you do your research, or you might decide to create your own. If I wanted a text feature about arsenic-based life, I might look for a picture of the life forms, or I might create one.

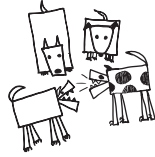
3. Have students continue to use the research materials to search for information, and have them use their graphic organizer or notecards to record relevant information.
4. Circulate, check students' progress, and record each completed step on the teacher cycle record form.
5. Spot check the Read and Respond homework.
6. Ask partners to share what they have found with each other and prepare to share an important piece of information and its source with the class prior to class discussion.

## Class Discussion (10 minutes)



1. Use **Random Reporter** to have students share an important piece of information, the source, and why they think the information is important with the class. Award team celebration points.
2. Award extra team celebration points to volunteers who answer the following question: "Did your research change your question or your thinking about what you thought you would find?"
3. Commend students for their progress through the research process during the lesson as recorded in the Research Process section of their team score sheets.
4. Add up the team celebration points earned by each team during the lesson, and record them on the Team Celebration Points poster.

## Lesson 3



# Teamwork

## Teacher Background

During this class period, students review their notes, make a plan, and begin their written product. They then share their product with a teammate for feedback and make changes as needed.

## Put It All Together: Draw Conclusions, Write, and Practice (30 minutes)

1. Explain that an important part in preparing to answer their research question is to make a plan for organizing their information.
2. Have students refer to the scoring guide that they selected. Explain that the criteria for ideas, organization, style, and mechanics explains what their written product should include.
3. Explain that their paragraphs need a beginning, middle, and end. Point out that the information they write needs to be organized in a way that makes sense to the audience.
4. Ask students to review their notes, and identify a plan for including the information in their paragraph. Suggest that they number the notes on their webs or rearrange their notecards to put their ideas in order. Have students review their plan with a teammate.
5. Ask each student to draft his or her paragraph (or other product).

## Team Feedback (20 minutes)

1. Refer students to the evaluation form in their student routines. Explain that students will receive feedback from a teammate and then make improvements to their research product. Review each part of the evaluation form.

Blackline master provided.

Research Evaluation	
Presenter	Evaluator
Date	
<b>Writing Purpose</b> (Circle one): To inform or explain      To support a claim with reasons	
<b>Writing Quality</b> (Write one area of strength, and give evidence to support your choice)	
Ideas	
Organization	
Style	
Mechanics	
Make a suggestion for improvement and a reason for your suggestion.	
<b>Research Skills</b> (Write one or two strengths)	
Formulates a focused question	
Uses multiple sources	
Quotes and paraphrases sources	
Cites trustworthy sources	
<b>Presentation Skills</b> (Write one or two strengths)	
Good eye contact	
Good volume	
Clear pronunciation	
Enthusiastic presentation	
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## Sample Think Aloud

You will use the evaluation form to guide you in giving feedback to your teammate. The first thing you should do is identify the purpose for writing—to inform or explain OR to support a claim with reasons. As your teammate shares his or her product, decide which part of the writing is the strongest—ideas, organization, style, or mechanics. Tell your partner which part is the strongest and explain why. Then, identify something for your teammate to improve. Maybe the position (claim) isn't clear. Or, maybe he or she needs to end with a closing sentence.

Next, identify one or two strengths for research skills and presentation skills. This information will be helpful as each of you make improvements and prepare to present your research.

2. Have each team member share his or her presentation with another member of the team.
3. Ask team members to use the evaluation form to give feedback.
4. Tell students to make improvements and prepare for their presentations.
5. Circulate, check students' progress, and record each completed step on the teacher cycle record form.
6. Spot check the Read and Respond homework.

**Class Discussion** (10 minutes)

1. Award team celebration points to Random Reporters who can report a strength that teammates shared with them about their presentations.
2. Award extra team celebration points to volunteers who share what they have learned about the research, writing, and presentation process.
3. Commend students for their progress through the research process during the lesson as recorded in the Research Process section of their team score sheets.
4. Add up the team celebration points earned by each team during the lesson, and record them on the Team Celebration Points poster.

Remind students of the Read and Respond homework assignment.



## Lesson 4



# Present and Evaluate

In this lesson, students will present their research to groups other than their own teams, and students will use the evaluation form to provide a written evaluation of each presentation that they hear. There will be four rounds of presentations, during which each student will have three minutes to present.

Choose group assignments in advance, or use the following process:

- Count the number of teams.
- Have students count off from 1 to the number of teams. There will be four or five students with each number.
- Have the students who counted off as 1s go to table 1, 2s go to table 2, and so on.

Allow a volunteer to give the first presentation, or designate an individual within each group. Presentations then proceed to the right until everyone has presented. As each presentation concludes, the evaluators complete the evaluation sheets and give them to the presenter.

## Present (30 minutes)

1. Have students review their research goal, team goal, and team cooperation goal as recorded on their team score sheets. Remind teams that they will earn super, great, or good team status based on how many team celebration points they earn.
2. Review the criteria for evaluating a presentation, and demonstrate how to complete the evaluation form. Explain that students will provide feedback by writing on the form. Remind students that you will collect the evaluation forms.
3. Designate group assignments, and pass out evaluation forms.
4. Have students move to their designated groups. Begin the presentations.
5. Make sure that each student presents and receives evaluations after the presentation.

## Team Discussion (20 minutes)

1. When all presentations are finished, have students return to their teams to review the feedback that they received.
2. Ask team members to share their strengths and suggestions in each category.

Research Evaluation	
Name: _____	Date: _____
Writing Purpose (circle one): <input type="checkbox"/> To inform or explain <input type="checkbox"/> To support a claim with reasons	
<b>Writing Quality:</b> Note one area of strength, and give evidence to support your choice.	
Idea	
Organization	
Style	
Mechanics	
Make a suggestion for improvement and a reason for your suggestion.	
<b>Research Skills:</b> (Note one or two strengths.)	
Answers a focused question	
Cites multiple sources	
Quotes and paraphrases correctly	
Cites believably	
Cites	
<b>Presentation Skills:</b> (Note one or two strengths.)	
Good eye contact	
Good volume	
Clear pronunciation	
Enthusiastic presentation	

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Distribute an evaluation form to each student.



Remind students of the Read and Respond homework assignment.

**Class Discussion** (10 minutes)

1. Review each target, and ask for a show of hands indicating areas of strength and areas that need improvement.
2. Use **Random Reporter** to hold a discussion during which students reflect on the research process and the products that they produced and draw conclusions about successes and areas in need of improvement. Award team celebration points.
3. Collect the written materials, including the plans, drafts, and evaluations. Plan to score and return the research products by the end of the next unit. Award up to 100 points for evidence that the chosen targets were met.
4. Review the total number of team celebration points earned by each team. Use the poster overlay to determine team status (super, great, or good) for this unit.
5. Enter the writing, Read and Respond, and team celebration points scores into the Member Center.
6. Generate the teacher cycle record results report to review team and class averages for the unit.

# Research Evaluation

Presenter \_\_\_\_\_ Evaluator \_\_\_\_\_ Date \_\_\_\_\_

**Writing Purpose** (circle one): To inform or explain To support a claim with reasons

**Writing Quality:** Note one area of strength, and give evidence to support your choice.

Ideas	
Organization	
Style	
Mechanics	

Make a suggestion for improvement and a reason for your suggestion.

**Research Skills** (Note one or two strengths.)

Answers a focused question	
Uses multiple sources	
Quotes and paraphrases sources	
Cites trustworthy sources	

**Presentation Skills** (Note one or two strengths.)

Good eye contact	
Good volume	
Clear pronunciation	
Enthusiastic presentation	

# Research Evaluation

Presenter \_\_\_\_\_ Evaluator \_\_\_\_\_ Date \_\_\_\_\_

**Writing Purpose** (circle one): To inform or explain To support a claim with reasons

**Writing Quality:** Note one area of strength, and give evidence to support your choice.

Ideas	
Organization	
Style	
Mechanics	

Make a suggestion for improvement and a reason for your suggestion.

**Research Skills** (Note one or two strengths.)

Answers a focused question	
Uses multiple sources	
Quotes and paraphrases sources	
Cites trustworthy sources	

**Presentation Skills** (Note one or two strengths.)

Good eye contact	
Good volume	
Clear pronunciation	
Enthusiastic presentation	

## Common Core State Standards

The following Common Core State Standards are addressed in this unit.

Full program alignments can be found on the Reading Edge online resources.

Contact your SFA coach for more information.

### Level 8 Make Connections

#### English Language Arts Standards: Reading: Informational Text

##### Key Ideas and Details

RI.8.2. Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.

RI.8.3. Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).

##### Craft and Structure

RI.8.6. Determine an author's point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.

#### English Language Arts Standards: Science and Technical Subjects

##### Integration of Knowledge and Ideas

RST.6-8.8. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.

#### English Language Arts Standards: Writing

##### Text Types and Purposes

W.8.2. Establish and maintain a formal style.

##### Research to Build and Present Knowledge

W.8.7. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

W.8.8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

W.8.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

#### English Language Arts Standards: Speaking and Listening

##### Presentation of Knowledge and Ideas

SL.8.4. Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.

SL.8.5. Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.

SL.8.6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

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