

Why *Boxes and Balls*?

Children have been using balls and possibly boxes or toys in the shape of boxes since they were very young. During this unit they will explore the attributes of these familiar objects. Boxes and balls provide an opportunity at this stage of language development to acquire concepts about new positional words. If on top of, under, and in front of are familiar, you may decide to introduce between, beside, above, and in the middle of.

The children will have the opportunity to compare the qualities of boxes to those of balls, consider the uses of bags vs. boxes, and experiment with the fact that balls bounce and roll and boxes may slide but do not roll. There will also be opportunities to estimate what things will fit inside a box and which box will nest inside another.

Using either manipulatives that are spheres (balls) and cubes or actual balls and boxes, the children will begin to notice the three-dimensional aspects of these shapes. It may be helpful to learn this before discussing two-dimensional shapes such as squares and circles. This may help the children to realize that balls are not circles, though both are round. You should also clarify that cubes, unless hollow, are not boxes, though we will emphasize boxes that are cubes. Boxes are containers whose corners we will note.

The Appendix contains patterns for matching boxes and balls by their designs and for putting them in order by size (seriation). These math skills bear repeating all year, with increasing complexity for those who are ready for it.

You can support the participation of families in this theme by asking them to send or bring many boxes of different sizes and shapes to the classroom as well as different sizes and types of balls. The children will also look for objects at home and in the classroom that are shaped like boxes and balls.

Have fun!

Learning Focus

Thematic Concepts

- A box is used to put things in; boxes are different from bags.
- Boxes come in different sizes and shapes; some fit inside others.
- Balls are round; they are very different from boxes.
- A ball bounces and rolls.
- We can identify balls and boxes by their feel.
- Some fruits and vegetables are round.
- Boxes have space inside to put things in.
- Boxes are usually flat on top.
- Balls are the same on all sides.
- Balls can roll down a ramp; boxes may slide down.

Personal Domain

- Demonstrate initiative in activities
- Handle materials with recognition of their fragility
- Choose from several activities
- Display a sense of humor
- Demonstrate an interest in learning more about a new topic
- Take risks

Physical Domain

- Throw a ball into a container
- Demonstrate increased eye-hand coordination
- Build a structure with blocks
- Pour liquid into a narrower container
- Balance on a low beam

Social Domain

- Show increasing skill in cooperative play
- Pay attention while another is speaking for an increasing time
- Display increasing concern for others
- Participate in group decision making

Boxes and Balls

Language/Literacy Domain

- Recite rhymes on their own
- Express themselves with increasingly complex oral language
- Understand that print conveys meaning
- Demonstrate an increasing interest in stories
- Use increasingly complex prepositions
- Contribute to group discussions

Cognitive Domain

- Follow three-step directions
- Demonstrate scientific method
- Observe and compare objects
- Observe the consequences of actions
- Solve simple problems
- Demonstrate visual discrimination

Creative Domain

- Experiment with and gain skill in using a variety of creative art materials
- Pretend and imitate in dramatic play activities
- Experiment with new media

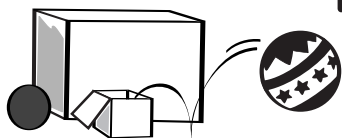
Mathematical Domain



- Classify by one category
- Seriate by size
- Use nonstandard units of measurement to explore various objects
- Estimate size
- Know two 3-dimensional shapes
- Count objects to 4

Vocabulary

balance scale
beside
between
bounce
cave
corner
cube
dotted
fit
flat
float
heavy
hollow
in front of
inside
light
on top of
outside
ramp
rhymes
round
shape
sink
slide
striped
zigzag

Peek at the Week



		Day 1	Day 2
LEARNING LABS	GREETINGS & READINGS 	Cube- and sphere-shaped manipulatives; nesting boxes; Story Tree and other theme-related books 	
	CLUES & QUESTIONS 	Curiosity gives clues about boxes.	Boxes fit inside other boxes.
	RHYME TIME 	"I Love Boxes" 	
	 Art	Paint boxes 	Decorate (painted) boxes 
	 Blocks	Build with boxes and cardboard blocks	※ (Small Group) Will it slide?
	 Dramatic Play	Place Dramatic Play items in boxes provided: what fits? 	
	 Library/ Listening	<i>A Child's Book of Art</i> ; <i>Story Tree</i> and other theme-related books about boxes 	
	 Manipulatives	Match boxes by design	Model dough into a solid box shape Play with nesting boxes 
	 Science	Balance empty vs. full boxes on scale 	
	 Water	Play with both square and round containers 	
 Writing	Write labels for results in Science Lab	Write labels for buildings in Blocks Lab 	
STORY TREE 	<i>The Big Brown Box</i>	<i>A Box Can Be Many Things</i>	
OUTSIDE/GROSS MOTOR PLAY 	Move a box without lifting it	Build with boxes or hollow blocks and boards	
SNACK TIME 	Box-shaped gelatin	Broth, crackers, fruit	
QUESTION/ REFLECTION 	Boxes have corners	Review what we know about boxes	
HOME LINK 	Find what kinds of boxes are at home	Count number of boxes found at home	

Peek at the Week

Day 3	Day 4	Day 5
Curiosity helps the children to use prepositions.	Curiosity gives clues about balls.	Use a Feely Box to find boxes and balls and match by feel
"Guess What It Is"	"Here's a Ball"	"I Love Boxes" "Here's a Ball"
	Paint with rolling ball	
	※ (Small Group) Will it roll? Is it easier on an incline?	
	<i>A Child's Book of Art</i> ; <i>Story Tree</i> and all theme-related books	
Match balls to boxes by design		Seriate balls
	Weigh balls with balance scale	
	Which kinds of balls sink?	
	List of balls that float or sink	
<i>Cubes, Cones, Cylinders, & Spheres</i>	<i>3 Magic Balls</i>	Favorite
Drag a box with a child in it; move a child in wagon	Throw balls into a box	Roll and bounce balls
Cheese cubes, crackers, juice	Round fruits	Cheese balls, juice
Boxes can be flat on top	Contrast boxes to foods shaped like a ball	Find things in the classroom with the same shape
Play a game putting a ball in/on/beside a box	Find round fruits or vegetables at home	

Materials for *Boxes and Balls 4s*

OVERVIEW

Basic Equipment

MATERIALS:

Balance scale	Cardboard blocks	Playground ball
Ball (small, capable of bouncing)	Hollow blocks (square, double square, ramp)	Ramp, indoor slide, or 9 rectangular blocks and two ramp blocks
Blocks, unit	Jewelry, scarves, and other items in Dramatic Play Lab that fit into the boxes	Tempera
Box- and ball-shaped manipulatives (beads and other perfect spheres and cubes; cube-shaped tabletop construction toys)	Pencils, including colored pencils of dark hues	Templates or stencils, including odd shapes and sizes
	Playdough	

Supplied with This Unit

MATERIALS:

Nesting boxes

BOOKS:

A Box Can Be Many Things
The Big Brown Box
Cubes, Cones, Cylinders, & Spheres
3 Magic Balls

RHYME CARDS/POSTERS:

“Guess What It Is”
“Here’s a Ball”
“I Love Boxes”

Supplied with Previous Units

BOOKS:

A Child’s Book of Art
(WELCOME TO SCHOOL)
The Arnold Lobel Book of Mother Goose
(SENSATIONAL SENSES)

Materials for *Boxes and Balls 4s*

OVERVIEW continued

Teacher Acquired

MATERIALS:

Balls that can be used in Water Lab: of different densities—golf, table tennis, tactile, foam, tennis	Chart with drawings and title “Does it float?” and “yes” and “no” at the top of each of two columns	Object to place on a table, such as a decorative statue, lamp, or clock	FOOD: Apple
Ball with no designs (uniform on all sides)	Cotton balls	Plastic bag	Broth made with bouillon cubes
Boards, 1 or 2 about 44 inches long (hollow block set)	Cube-shaped plastic containers	Prewritten Daily Messages	Cheese balls
Box, large and somewhat heavy	Feely Box (<i>Sensational Senses</i>) or sock	Sand or rocks	Cheese cubes
Boxes in different shapes and sizes	Jewelry boxes/scarf boxes	Saucepan or basket to catch balls (optional)	Cherry tomatoes, peas, melon balls, round grapes, or other ball-shaped food
Boxes (large) that children can build with	Leaf with title for each new story	Small, same-size boxes for balance scale (2)	Crackers
Buttons, ribbon, rick-rack, stickers, other decorations	Milk crate (optional)	Toy, small, and paper bag (optional) to put it in	Fruit
	Newsprint or drawing paper	Tray with sides or box for tempera	Gelatin formed into cubes
		Wagon (optional)	Juice
			Orange

Appendix

MATERIALS TO BE

PREPARED:

Matching Boxes	Home Link Page (English)
Designer Balls	
Seriation Balls	Home Link Page (Spanish)

Ready, set...

Focus

Balls are round; they are very different from boxes.

How will children grow today?

- Show increasing skill in cooperative play
- Contribute to group discussions
- Use simple prepositions such as “in front of,” “beside,” “between”
- Express themselves with increasingly complex oral language

Thinking about you...

“Remember, the challenge of teaching is not in holding good cards but in playing well those you are dealt.”

~ Algozzine, #35

Additional Materials for Day 3

Learning Activities Materials

Greetings & Readings	<ul style="list-style-type: none"> • Prewritten Daily Message: “Today is _____. We will put balls inside boxes today.”
Clues & Questions	<ul style="list-style-type: none"> • Soft indoor ball • Box large enough for a ball to fit in, and closed so that a ball can rest on top of it
Rhyme Time	<ul style="list-style-type: none"> • “Guess What It Is” poster
Library/ Listening	<ul style="list-style-type: none"> • <i>A Child’s Book of Art</i> marked at pages 33 and 54
Manipulatives	<ul style="list-style-type: none"> • Cutout Matching Boxes with varied designs from Day 1 (one set) (Appendix) • Photocopies of Designer Balls, cut separately (one set) (Appendix)
Story Tree	<ul style="list-style-type: none"> • <i>Cubes, Cones, Cylinders, & Spheres</i> • Circle cutout of construction paper or cardboard
Outside/ Gross Motor Play	<ul style="list-style-type: none"> • Large, somewhat heavy box • Wagon, if available
Snack Time	<ul style="list-style-type: none"> • Cheese cubes • Crackers • Juice
Question/ Reflection	<ul style="list-style-type: none"> • Cardboard or wooden box large enough to be used as a lamp table • Object to place on top of box such as a decorative statue, lamp, or clock • Ball

Day 3

Greetings & Readings

ABOUT 15 MINUTES

- ▷ Greet the children and ask them if they remember how many boxes they found at home.



Sing “The More We Get Together” as you help the children prepare for the Gathering Circle.

Gathering Circle

- ▷ Greet the children and ask again who had a chance to count the boxes at home. You may decide not to ask for their numbers, or you may find they are anxious to say them again. Ask them to tell you some of the places they looked to find boxes. Write the numbers as they remember them on a piece of paper.

Daily Message

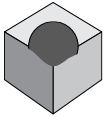
- ▷ Review “Sunday, Monday, Tuesday, Clap” or “This Is the Way We Tidy Our Labs” to help the children realize the day of the week.
- ▷ Read the prewritten message, pointing to the words. Write the name of the day of the week, saying each letter as you write it. **Today is** (day of the week). **We will put balls inside boxes today.** Ask the children to repeat the message with you.

Remember that numbers are very abstract, and for children to say a highly improbable number, such as 100, may simply mean they found very many. They may have no concept that 4 boxes is a small number, 10 a number that might fit in a bag, etc.

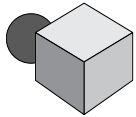
This may be a good opportunity to write the numbers they remember on a piece of paper so that they see your use of writing as well as what the numbers they voice look like in numerals.

Clues & Questions

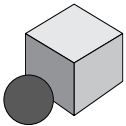
10–15 MINUTES



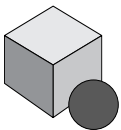
inside



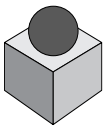
behind



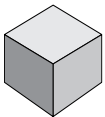
beside



in front of



on top of



under

- ▷ Curiosity comes out with a soft ball. He says, **Let's play a game.**

See if you can tell me where I put the ball each time I move it.

Are you ready?

- ▷ Have Curiosity place the ball inside the box and ask, **Now, where did I put the ball?** [*inside or in the box*]

Have Curiosity put the ball behind the box and ask, **Who can say where the ball is now?** [*behind or outside*]

- ▷ With the ball in front of, behind, beside, under (if possible) and on top of the box, let the children describe the positions. Holding the ball in the air could demonstrate above the box. For any positions that they do not name correctly, supply the word.
- ▷ Extend the activity, if it seems appropriate, by making a game in which the children move the ball in relationship to the box according to how Curiosity or other children tell them to move it. You might add another box so that you can include "between the boxes."



Chant "Penny, Nickel, Dime."

Rhyme Time

5–10 MINUTES

Guess What It Is

(Tune: “Row, Row, Row Your Boat”)

I have a toy that I can bounce

(pantomime bouncing a ball)

And throw against a wall.

(pantomime throwing a ball)

It’s very round. It rolls and rolls.

*(circle one hand around the other—
as in “Pat a Cake”)*

Guess what it is—A BALL!

*(point finger to your head;
then open arms in a “ta-dah” gesture)*

- ▷ Sing or say the words to this song/rhyme. Ask the children what toy it describes.
- ▷ Repeat the rhyme, encouraging the children to Jump Right In. Ask, **Did we play with something in Clues & Questions that this song is talking about?** *[replies]*



Review “I Love Boxes.”

Learning Labs

45–50 MINUTES

Small Group Lab

Blocks: Down the Slope



Repeat Day 2 Small Group activities.



Library/Listening: Boxes and Books

When You Tour: Point to the oil paintings of blocks on the marked pages of *A Child's Book of Art*.

Activity: The children will look through the art book, noting especially the marked pages.

Facilitating Learning: Ask questions about the sizes and colors of the rectangles/cubes on page 33, their placement relative to each other, and the shapes at the bottom part of the page that are not geometrical. If the children seem to understand the definition of a cube, point out that some of the blocks on page 54 are cubes and some are not.



Manipulatives: Balls to Boxes

When You Tour: Point to the balls made with the same designs as the boxes used on Day 1.

Activity: The children will match balls to boxes according to the design: boxes with dots to balls with dots, etc.

Facilitating Learning: Ask the children to identify similar features in order to explain to you their reasons for matching the shapes as they do. They may also review the names for the patterns: dotted, striped, solid, zigzag.

Some children will feel most comfortable matching by the most obvious characteristic: the shape. Note which children are able to ignore the fact that the shapes are different and match according to the pattern.



“Read, Read, Read a Book”

Story Tree

10–15 MINUTES



Cubes, Cones, Cylinders, & Spheres

Author/Photographer: Tana Hoban

This book of Hoban’s wonderful photographs illustrates the four 3-dimensional shapes as they occur in a variety of indoor and outdoor settings. Many of the objects are familiar, making it easy for the children to relate these photos to their lives.

Before Reading

- ▷ You will probably want to decide on words to use to describe the objects that you think the children will ask about: the smokestacks, the traffic cones, decorative light bulbs, hot-air balloons, snare drums, die, globe, carpets, round bales of hay, silo, shrubbery cut into cone shapes, and castle turrets. You may want to bring objects similar to some of the items illustrated in the book to the Story Tree space.
- ▷ Show the cover of the book. Ask, **Who can tell me something about the picture on this book cover?** [replies]

What do you think this book will be about? [replies]

- ▷ Read the title of the book and tell the children that the photographer, Tana Hoban, took all the pictures that are in the book. If you have enjoyed other Tana Hoban books with the children, remind them of those books or bring them to Story Tree so that you can hold them up and show the covers.
- ▷ You will probably not use the pages with cylinders or cones, unless you use them to contrast their shapes with the shapes of boxes and balls. Say, **These are neither balls nor boxes. Let's look for the ones that are balls or boxes.**

While Reading

- ▷ Talk about the photos that are cubes—the boxes on the front cover, the blocks, the die, the sugar cubes, and the gift-wrapped packages. Encourage the children to name as many objects in each picture as they can.
- ▷ Ask what the children are doing in the photo on the cover.
[playing with and drawing on boxes in the driveway]
- ▷ As you show the pictures, ask, **What is someone making with the sugar cubes?** *[replies]* **What do you think the young boy is doing with these two wrapped boxes?** *[replies]*
- ▷ The children may want to point to and name some of the letters and numerals on the blocks in the first photograph. If relevant, ask which blocks or manipulatives in the classroom are similar to those pictured.
- ▷ When showing the picture of the bubble, ask, **Is this a ball?** *[no]* **It is shaped like a ball, isn't it? It is round.**

It can be called a sphere because it is not just round like this circle. (Hold up the paper circle.)

It's round like an orange, on all sides, like a ball.

People use the word sphere for things that are round like a ball. Can you say that word? It has a difficult sound, "sphere." *[replies]*

- ▷ When looking at the light bulbs, you will draw the comparison with the bubbles and the fact that the bulbs are probably plastic and are ball-shaped, or spherical. Ask, **What else could they be made of?**
- ▷ You may want to tell the children that a hot air balloon is a way that people can float above the ground.

After Reading

- ▷ Ask, **What did we see in the book that were cube-shaped like the boxes we have been using in the labs?** If the children cannot name them, show the pictures and name the objects again that are cubes.



“Guess What It Is”

Outside/ Gross Motor Play 15–25 MINUTES

- ▷ Some children may want to climb into boxes. As a child sits in a large box, ask the children how they might move him or her. If they suggest pulling the box, let them try.

Someone may suggest a different surface, if there is more than one surface in the area you use. Let them try grass or dirt, as opposed to their first choice. (Of course, doing it on the floor inside will be easier.)

- ▷ Ask if the children expect it to be easier or harder to have the child moved with the use of a wagon instead of a box. Let them try it with the same child sitting in the wagon.

Ask which was easier; then let them try it with another child in the box and the wagon. Ask again which method was easier.



If it was successful, use the transition from Day 2 in which the children pretended they were walking across a bridge between boxes.

Snack Time

5–15 MINUTES

- ▷ Serve cubes of cheese and discuss the resemblance to the bouillon cubes and to boxes.



“I Love Boxes”

Question/ Reflection ?

5–15 MINUTES

- ▷ Try placing an object on top of the box and ask the children to describe where the object is. *[on top of the box]*

Ask, **What else could we place here?** *[replies]* **Could we use it as a table?** *[replies]*

Could we put a lamp or a clock on it? *[replies]* Emphasize “on.”

Help them think of other uses of the flat side of a box. *[sitting; eating]* Let their imaginations be the only limit!

- ▷ Say, **We can put things on the box, and the box has space inside, so we can also put things in it, can't we?**
- ▷ Let's try to put something on the ball or in the ball. Let a child try to place the object on the ball. **What happened?** *[replies]*

Balls are different from boxes, aren't they? Can you remember other ways that make them different? [*replies; balls bounce and roll; boxes have corners*]

Home Link

- ▷ **Play the game that we played with Curiosity with someone at home. What could you use if you don't have a ball?** [*replies*] Help the children think about how they could play the game with many different objects if they do not have a ball or box.

Departure

- ▷ "I'll Miss You"

What Else Can We Get Into?

















- Provide different sizes of some object (such as a ball) that can be placed in the Nesting Boxes. Use as many boxes as you have sizes of the object (ball). Observe to see whether the children put the smallest in the smallest box and continue to seriate and match by size.
- Gather balls of various types or with various patterns and encourage the children to sort them.
- Reread *Cubes, Cones, Cylinders, & Spheres*.
- Cut a milk jug into the shape of a scoop; use balls made from pantyhose. Let the children catch and toss the balls with the scoop.

Looking Back

BOXES AND BALLS 4s

What went well?

What would I do differently?

<p>GREETINGS & READINGS </p> <p>Gathering Circle</p> <p>Daily Message</p>		
<p>CLUES & QUESTIONS </p>		
<p>RHYME TIME </p>		
<p>LEARNING LABS</p> <p> Art</p> <p> Blocks</p> <p> Dramatic Play</p> <p> Library/Listening</p> <p> Manipulatives</p> <p> Sand/Water</p> <p> Science</p> <p> Writing</p> <p>(Other)</p>		
<p>STORY TREE </p>		
<p>OUTSIDE/GROSS MOTOR PLAY </p>		
<p>SNACK TIME </p>		
<p>QUESTION/ REFLECTION </p>		
<p>HOME LINK </p>		
<p>Additional Notes</p>		