

This is a one-week excerpt from the Starfall Kindergarten Mathematics Teacher's Guide.

If you have questions or comments, please contact us.

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Shapes & Coins

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Shapes & Coins

Week 7

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Week 7 Summary

The children will learn to identify shapes in the environment and how to combine smaller shapes to create larger ones. They will become familiar with positional words and further their knowledge of using and interpreting graphs as a way to organize information. The children will also:

- Discuss the concepts of greater than and less than
- Review equations
- Practice counting backward

Preparation

DAY 1

Review the “Rocket Cheer” and the “Stand Up, Hand Up, Partner Up” method of partnering with the children.

You will use Shape Cards: *circle*, *triangle*, *square*, and *rectangle*, and the Two-Dimensional Shape Photo Picture Cards (all).

DAY 2

If available, navigate a classroom computer with projection capability to *Starfall.com*. You will use:

- Math Songs: “10 Kids Went to Play”
- Measurement and Geometry: “Make Shapes”

Optional: Have a camera available to take photos of the children showing various positional words.

You will need the *Where Oh Where Is Backpack Bear?* book.

DAY 3

Prepare a graph on chart paper on which the children will graph shapes (*circle*, *ellipse*, *triangle*, *rectangle*, and *square*) from the bottom up. Have enough sticky notes or stickers available for each child to place one above one of the shapes.

You will need a rectangle shape to demonstrate the graphing activity.

DAY 4

You will preview “Shape Town,” which the children will play during Learning Centers on **Day 5**.

You will need several small magnets and two classroom five-frames.

Duplicate an individual five-frame for each child for today’s lesson.



Individual Five-Frames

DAY 5

Activity Center 1 — Navigate classroom computers to *Starfall.com*.

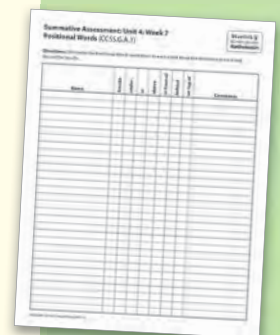
Activity Center 2 — Prepare a set of Number Representation Cards 6 through 10 for each child in a Learning Center. The sets should include number, dice, tally mark, ten frame, and domino cards.

Activity Center 3 — The children will use 1 or 2 “Shape Town” game boards, 1 or 2 sets of 2-D Shape Cards, and a playing piece for each child.

Activity Center 4 — Prepare materials for this week’s Teacher’s Choice Activity.

Summative Assessment — Prepare a copy of the “Positional Word Summative Assessment” Checklist for Unit 4 - Week 7.

The children will play “A Walk in the Park” as you individually assess them. They will use 1 or 2 “A Walk in the Park” game boards, Number Representation Cards 1-5 (one set for each child), and a playing piece for each child.



Summative Assessment
Unit 4 - Week 7

DAY 1

DAY 2

Daily Routines

- Calendar
- Weather
- Number Line
- Place Value
- Hundreds Chart

Magic Math Moment

Review equations (vertically and horizontally)

Count backward

Math Concepts

Review properties of shapes

Identify *circle, triangle, square, and rectangle*

Identify geometric shapes in the environment

Introduce

Positional Words: *behind, beside/next to, under/beneath, in front of, above/on top of, and between*

Use small shapes to create larger shapes

Formative / Summative Assessment

Incorporate circle, triangle, square, and rectangular shapes into drawings

“Backpack Bear Says” using positional words

Where Oh Where Is Backpack Bear?

Workbooks & Media

Starfall.com: Math Songs: “10 Kids Went to Play”

DAY 3

DAY 4

DAY 5

- Calendar
- Weather
- Number Line
- Place Value
- Hundreds Chart

Learning Centers

"One Little Elephant" (counting)

Review rhombus, pentagon, hexagon, octagon

Introduce "Shape Town"

Starfall.com:

- Monthly Calendar
- Geometry and Measurement: "Make Shapes"
- Geometry and Measurement: "Button Sort"

Introduce

Graphs
Identify shapes
Create a shape graph

Greater than and less than
Use five-frames to demonstrate greater than and less than

Review 6 through 10 number representations

"Shape Town" Game

Evaluate and interpret the Shape Graph

Demonstrate understanding of greater than and less than using five-frames

Teacher's Choice

Math Melodies CD Track 17, "One Little Elephant Went Out to Play"

Summative Assessment: Positional Words

1

2

3

4

5

Review Equations

Materials

 None

Say: **Raise your hand if you remember what an equation is.** (Volunteers respond.) **Look at this equation.** Write $6 + 0 = \underline{\quad}$ horizontally on a whiteboard. Read: **Six plus zero equals what?**

Continue: **If you know the answer put your finger on your nose.**
A volunteer tells the answer.

Ask: **What do we call $6 + 0 = 6$? Right, it is an equation. An equation is correct if both sides equal the same number. Let's check to see if this equation is correct.** Do this.

Write the equation vertically and read it again. Say: **Remember, an equation can be written vertically, up and down, or horizontally, left to right.**

Write $5 + 1 = \underline{\quad}$ horizontally on a whiteboard. Choose a volunteer to write the answer. Write the equation again vertically and choose a different volunteer to write the answer. Compare the answers. Lead the children to notice that the answers are the same because the equations are the same. They are just written in different ways.

Repeat for other equations as time allows.

Operations & Algebraic Thinking

A.1 - Represent addition and subtraction in a variety of ways.

Geometry

A.1 - Describe objects using shapes and relative positions.

A.2 - Correctly name shapes.

Identify Shapes in the Environment

1 Review Properties of Shapes

Indicate *Backpack Bear's Math Big Book*, page 4. Say:

This is a circle. How can you tell it is a circle?

Volunteers respond. Repeat for page 5 (triangle), page 6 (rectangle), and page 7 (square).

2 Identify the Circle, Triangle, Square, and Rectangle

Display the Shape Cards face down in a pocket chart. Choose a volunteer to reveal a shape and identify it. Continue with other volunteers until all shapes have been identified.

Replace the Shape Cards in the top row of the pocket chart to create column headings.

Materials

- Backpack Bear's Math Big Book*, pages 4 – 7
- Shape Cards: circle, triangle, square, rectangle
- 2-D Shape Photo Picture Cards (all)
- Drawing paper, pencils
- Pocket chart



3 Shape Detectives

Say: **Today let's be shape detectives. Here are some pictures of real objects. You will each have a partner. You and your partner will discuss which shape your object looks most like.**

The children use the "Stand Up, Hand Up, Partner Up" method to partner. Distribute the 2-D Shape Picture Cards. Some partners may receive two cards.

Partners discuss their Picture Cards and identify the different shapes. Circulate and assist if needed. After an appropriate amount of time say: **Clap once if you can hear me.** (The children do this.) **Clap twice if you can hear me.** (The children do this.)



4 Partner Share

The partners take turns to share their findings, and place the Picture Cards under the correct shapes in the pocket chart.

Formative Assessment

Draw Shapes

Distribute drawing paper and pencils. Explain to the children that they should draw pictures incorporating circle, triangle, square, and rectangle shapes. Ask the children to identify the shapes they used in their pictures as you circulate throughout the classroom.

Count Backward

Project *Starfall.com*, Math Songs: "10 Kids Went to Play," or gather the children around a classroom computer. The children watch and listen to the song.

Ask: **What did you notice about how they counted in the song?** (Volunteers respond.) **Right, the numbers went down instead of up! They counted backward.**

Say: **Watch again, but this time notice where each child is on the playground.** Play the song again and discuss.

Materials

- Computer navigated to *Starfall.com*, Math Songs: "10 Kids Went to Play"

Counting & Cardinality

CC.3 - Count backward from a given number.

Geometry

A.1 - Describe objects using shapes and relative positions.

Positional Words

1 Introduce Positional Words

Say: **Today let's talk about positional words. A positional word tells the position of someone, or where something is.**

Indicate *Backpack Bear's Math Big Book*, page 39.

Say: **Backpack Bear made a scrapbook for you! Let's see if we can tell where he is in these pictures. Raise your hand if you can tell Backpack Bear's position, or where he is in the first picture. (A volunteer responds.) Yes, Backpack Bear is behind the bookshelf. Behind is a positional word. I will write behind on the whiteboard.**

Continue with the children describing Backpack Bear's position in each of the pictures on the page. Reinforce positional words such as *behind*, *beside/next to*, *under/beneath*, *in front of*, *above/on top of*, and *between* by writing them on the whiteboard.

2 Where Is Backpack Bear?

Say: **Let's play a game. I will place Backpack Bear somewhere in the room, then we will use positional words to describe Backpack Bear's position, or where Backpack Bear is.**

Place Backpack Bear under a table. Continue: **Backpack Bear is under the table. Under is a positional word that describes Backpack Bear's position, or where Backpack Bear is.**

Materials

- Where Oh Where Is Backpack Bear?*
- Backpack Bear's Math Big Book*, page 39
- Camera (optional)
- Backpack Bear



Whisper to a volunteer to hold Backpack Bear above his or her head. The class identifies Backpack Bear’s position using positional words. Assist if necessary. Repeat for the following:

- In front of the board
- Between two children
- Next to a chair
- Beside the teacher

Say: **Backpack Bear has a book about words that tell position. It’s called *Where Oh Where Is Backpack Bear*. The author of this book is Joan Elliott. Who remembers what an author does?** (Volunteers respond.) **Right, an author writes the book.**

Continue: **The illustrator is Dale Beisel. What does the illustrator do?** (Volunteers respond.) **Yes, the illustrator draws the pictures. Let’s read the book!**

Read and discuss *Where Oh Where Is Backpack Bear*?



Formative Assessment

“Backpack Bear Says”

Play “Backpack Bear Says” (a variation of “Simon Says”) using the following directions. Observe the children after each direction to assess their understanding of positional words.

- **Backpack Bear says put your hands *on top of your head*.**
- **Backpack Bear says stand *beside* a friend.**
- **Put your hand *in front of your face*.**
(The children don’t do this because Backpack Bear didn’t say it.)
- **Backpack Bear says put your hand *in front of your face*.**
- **Backpack Bear says put your hand *between your feet*.**
- **Backpack Bear says put your hands *above your head*.**
- **Stand *next to a chair*.**
(The children don’t do this because Backpack Bear didn’t say it.)
- **Backpack Bear says stand *next to a chair*.**

Optional: Extend this lesson by taking photos of the children demonstrating positional words. Create an anchor chart by writing the positional word below each photo.

"One Little Elephant"

Play *Math Melodies* CD Track 17, "One Little Elephant Went Out to Play."

Gather the children in a circle. Say:

This is our pretend spider web. Listen to the song again. I will tap children on the head to represent the elephants. If I tap you, move to the middle of the circle.

Play the song again. Repeat as time allows, so each child has a turn.

Materials

- Starfall Math Melodies* CD, Track 17

"One Little Elephant Went Out to Play"

*One little elephant went out to play
Upon a spider's web one day;
She had such enormous fun,
She asked another little elephant to come!*

*Two little elephants...
Three little elephants...
Four little elephants...*

*Five little elephants went out to play
Upon a spider's web one day;
They had such enormous fun,
They didn't ask another little
elephant to come!*

Counting & Cardinality

A.1 - Count to 100 by ones and by tens.

Measurement & Data

MD.2 - Use and interpret graphs.

Geometry

A.2 - Correctly name shapes.

Introduce Graphs

Essential Question: *How can we use graphs to understand information and answer questions?*

Materials

- Prepared shape graph
- Math bags (containing circle, ellipse, triangle, rectangle, square shapes)
- Teacher rectangle shape
- Backpack Bear
- Sticky notes or stickers

1 Introduce Graphs

Say: **Backpack Bear would like to teach us a way to organize information using graphs. Where do you see graphs in our classroom?** Assist children to identify the calendar and the weather chart as graphs.

Discuss how a calendar is organized to easily identify the month, day, and date, and the classroom weather chart uses tally marks to show how many days are sunny or cool, etc. Emphasize the fact that these and other graphs make the information easy to see.

2 Create a Graph

Distribute a math bag to each child. Say: **Backpack Bear would like you to create a graph. He asked for you to look at the shapes in your math bags and secretly remove one shape. Hold it tightly and don't let anyone see it!** The children do this.

Indicate the shape graph. Say: **This is a different kind of graph. We will use it to show which shapes you removed from your math bags.**

Continue: **My secret shape is a rectangle, so I will place a sticky note (or sticker) in the square above the rectangle. When I say your name, come to the graph, find the picture of your shape at the bottom, and place your sticky note above your shape. Be sure to watch closely as the graph grows. It will be fun to see which shape was chosen most and which shape was chosen least. I wonder if any of the shapes were chosen an equal number of times.**

Distribute a sticky note or sticker to each child as he or she approaches the graph. Assist the children to place them on the graph from the bottom up correctly.



Formative Assessment

Evaluate Most, Least, and Same

Backpack Bear whispers to you. Say: **Now that the graph is complete, Backpack Bear says we should look at the information we gathered and organized.**

Evaluate the graph to determine which shapes were chosen most, least, or the same number of times.

Review Rhombus, Pentagon, Hexagon, and Octagon

Indicate *Backpack Bear's Math Big Book*, page 8 and read Backpack Bear's speech bubble. As you identify each shape, a volunteer counts its sides.

Say: **Backpack Bear has a shape game you will play in Learning Centers tomorrow. We can learn how to play it today so you will be ready!**

Indicate the "Shape Town" game board.
Ask: **What do you see on this game board?** (Discuss the children's answers.) **You will draw a card with a shape on it and move your playing piece to the next shape that matches the shape card on the game board.** Remind the children they will play "Shape Town" during Learning Centers.



Materials

- Backpack Bear's Math Big Book*, page 8
- "Shape Town" game board
- Two-Dimensional Shape Cards (or 2D shape spinner)

Counting & Cardinality

B.4 - Understand the relationship between numbers and quantities.

C.6 - Identify greater than, less than, and equal to.

C.7 - Compare two numbers as written numerals.

Geometry

A.2 - Correctly name shapes.

Greater Than and Less Than

Essential Question: How can we tell that one group has more than, less than, or the same amount as another group?

Materials

- Two classroom five-frames
- Five-frame for each child
- Magnetic whiteboard
- Backpack Bear
- Math bags
- Magnets

1 Introduce Greater Than and Less Than

Say: **Today let's learn new words for more and less.**

Select six children to stand together in the left front of the classroom. Say: **This is a set of children. How many children are in this set?**

Select three more children to stand in the right front of the classroom. Ask:

- **How many children are in this set?**
- **Which set has more children?**
- **Which set has less?**

Explain: **Because the number six is more than the number three, we can say the set of six children is greater than the set of three children. Say, greater than.** (The children repeat, greater than.) **Greater than means more than.**

Continue: **We can also say the set of three children is less than the set of six children. Say, less than. Children repeat, less than.** (The children repeat, less than.)

2 Demonstrate Greater Than/Less Than

Display a classroom five-frame on a whiteboard. Say: **Here is a five-frame. How do we know it is a five-frame?** Lead the children to understand it is a five-frame because it has five sections.

Place 4 magnets in the five-frame. Ask:

- **How many magnets are in the five-frame?**
- **What strategy did you use to find the answer?**

Explain: **Right, you counted them. I will write the numeral 4 under the five-frame because there are four magnets in this set.**

Display a second classroom five-frame on the whiteboard, leaving space between the two. Say: **Here is another five-frame. Who can put 2 magnets in this five-frame?** A volunteer does this.

Continue: **Let's check the answer. What strategy could we use? Right, we can count the magnets.** Count the magnets to confirm.

Ask: **What numeral should be written under this five-frame? Right, 2 because there are 2 magnets in this set.** A volunteer writes the numeral 2 under the five-frame.

Say: **Let's compare the two five-frames.** Ask:

- **Which five-frame has the greater number of magnets?**
- **How do you know?**
- **Which five-frame has less?**

Remove the magnets from the five-frames. Repeat the procedure as follows:

- Place five magnets in the first five-frame.
- A volunteer counts and writes the numeral 5 under it.
- Confirm the answer.
- Place three magnets in the second five-frame.
- A volunteer counts and writes the numeral 3 under it.
- Confirm the answer.

Ask:

- **Which five-frame has the greater number of magnets?**
- **Which has less than the other?**
- **How do you know?**



Formative Assessment

Use Five-Frames

Distribute one five-frame to each child. Say: **Remove the connect cubes from your math bag. You will use your connect cubes and five-frame to answer math problems. Let's try one together.**

Write the numeral 6 on the board. Say: **This is the number six. Use your cubes and five-frame to make a set that is less than six.** Observe and assist as children do this.

Say: **Raise your hand if you can tell us how many cubes you put in your five-frame.** Volunteers respond. The class affirms correct answers.

Continue: **Clear your five-frame and let's try some more. Ready? Make a set that is...**

- **Greater than 3**
- **Less than 2**
- **Greater than 4**
- **Greater than 1**
- **Less than 1**

After each direction, volunteers share how many numbers they placed in their sets and the class confirms correct answers.

Learning Centers

DAY

5

1 Computer

The children explore:

- Monthly calendar
- Geometry and Measurement: "Make Shapes"
- Geometry and Measurement: "Button Sort"
- Numbers: "Feed the Animals"

Materials

- Computers navigated to *Starfall.com*

2 Review 6-10

The children partner and mix their sets of cards together. They place the cards face up on the floor or a table. One partner says a number from six to ten. The partners look through the cards and each partner selects the five ways to represent the number.

The partners place the five cards horizontally across the top of their math mats. They each then stack their own cards and clear their math mats. The second partner says a different number and the activity is repeated.

Play continues until the partners have made representations for each number 6 through 10.

Materials

- Math mat (1 per child)
- Number Representation Cards: 6-10 (1 set per child)

**Counting & Cardinality**

A.2 - Count forward from a given number.

B.4 - Understand the relationship between numbers and quantities.

Measurement & Data

B.3 - Classify, count, and sort objects.

Geometry

A.1 - Describe objects using shapes and relative positions.

B.6 Compose simple shapes to form larger shapes.

3 "Shape Town" Game

The children take turns drawing from a stack of Shape Cards. They move to the next matching shape on the game board. Play may end when a player reaches the star, or play may continue until both players reach the star.

Materials

- "Shape Town" game boards (1 or 2)
- One playing piece per child
- Two-Dimensional Shape Cards (or 2D shape spinner)



4 Teacher's Choice

Prepare an activity that will provide the children with an opportunity to practice a skill from this unit.

5 Summative Assessment: Positional Words

The children will play "A Walk in the Park" as you conduct this week's Summative Assessment.

"A Walk in the Park" Game — Place the Number Representation Cards 1-5 face down in a stack.

Players place their playing pieces on start. For each turn, the player reveals a card, identifies the number, and moves his or her playing piece the corresponding number of spaces.

Summative Assessment — Place the container on a table in front of the child with the opening facing him or her. Hand the block to the child, and ask him or her to perform the following tasks:

Place the block...

- beside, or next to, the container
- under the container
- in the container
- above the container
- in front of the container
- behind the container
- on top of the container

Indicate mastery on the Summative Assessment Checklist for Unit 4, Week 7.

Materials

- "A Walk in the Park" game board
- Representation Cards 1-5 (numeral, dice, domino, ten frame, tally marks)
- Playing pieces
- Summative Assessment Checklist, Unit 4, Week 7
- Open container large enough to hold the block
- Block

