

Shapes & Coins

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Shapes & Coins

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Frequently Asked Questions

Why does the Starfall Math curriculum include money even though many state standards do not?

Using money is a real-life skill that requires math knowledge. Kindergarten children do not become experts at using money, nor do they need to for tests or state standards, but they like coins, in part because they are “real” objects.

Coins make excellent counters even if children don’t recognize their values, and they provide a perfect opportunity to practice “counting on.” When children see a nickel and two pennies, they learn it isn’t necessary to count 1-2-3-4-5 and then add 2 more. Instead they learn to recognize the value of the nickel as five, thus starting at five and counting on two more, 5,6,7.

Including money in the curriculum also provides children with the opportunity to practice addition and subtraction skills by using coins as they play store and pretend to “purchase” items.

Kindergarten children invariably express interest in handling and distinguishing coins. Even learning their values proves interesting. While the children aren’t expected to be able to correctly count change, they do take pride in knowing the coins’ names and their values.

Kindergarten children who have rich and varied math experiences have been found to perform at higher levels in later years. Previewing coins and their values will help children become more successful later on, when money is more formally introduced.

Unit 4 Research

Money concepts should be taught at home and in kindergarten because the learned knowledge and skills are not only relevant, but practiced in daily life. According to Mary Brenner at the University of CA, Santa Barbara, “One of the many prescriptions for making mathematics more meaningful to children is to include mathematical tasks that relate to children’s everyday lives.”⁽¹⁾

The introduction of coins in kindergarten should begin with activities designed to acquaint children with the identification and value of coins, using real money. The learning objectives are recognizing coins, knowing the value of the penny, nickel and dime, simple addition of coins, and problem solving using money. Counting, addition, and subtraction in terms of money make it easier for many children to gain math confidence.

Children learn to identify coins and their values by experiencing numerous hands-on activities. Coins are introduced one at a time as children participate in various activities to create understanding of that coin before another coin is introduced.⁽²⁾ They then work on the questions, “How many pennies (or cents) are in a nickel? A dime?” Children become aware of the differences in color, shape, and feel as well as value. In Starfall kindergarten classrooms, children learn about coins through classroom games, rhymes, and Learning Center activities. They pretend to buy items using actual coins, play “Toss the Coin” to learn about head and tails, identify presidents on coins, and play “Coin Town,” “Coin Concentration,” and various coin games on Starfall.com. Children learn the value of a set of coins, create a set of coins with a given value, and compare the values of sets of coins.⁽³⁾ Children demonstrate their understanding in a variety of ways. These types of activities enable students to become proficient problem solvers.⁽⁴⁾

Some kindergarten children struggle to advance from the concrete to the abstract. It is important to reinforce these developmental concepts throughout the year with coin games and activities that reinforce their learning, such as practice in solving problems involving addition and subtraction using coins, showing different combinations of coins that equal the same value, and solving problems using combinations of coins.

(1) Brenner, Mary. Meaning and Money. *Educational Studies in Mathematics*, July, 1998, Vol. 36, Issue 2, pp 123-155.

(2) Martin-Kniep, Gisselle O. *Becoming a Better Teacher: Eight Innovations That Work*, Alexandria, VA: Association for Supervision and Curriculum Development, 2000.

(3) Randell L. Drum and Wesley G Petty, Jr. Teaching Children Mathematics, Vol. 5, No. 5, (January 1999), pp 265-268.

(4) National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA.

Unit 4 Summary

Time Frame: 15 days

The children will explore shapes in their environment and learn that large shapes can be created from smaller shapes. They will learn graphing as a way to organize and interpret information, and use positional words to express the location of objects. The children will be introduced to greater than, less than, and equal through coin recognition (penny, nickel, and dime) and by creating and comparing sets. Unit 4 also focuses on the use of ten-frames as a strategy for solving story problems and equations, and for practicing one-to-one correspondence.

Essential Questions

(K.CC.C.6) How can we tell that one group has more than, less than, or the same amount as another group?

(K.CC.C.6) How can we use a ten-frame to compare numbers?

(K.OA.A.1) What happens when we combine groups and what happens when we take groups apart?

(K.G.A.1) How are shapes important, how are they used in our environment, and how can we tell where they are?

(K.G.B.6) How can building shapes help us better to understand the characteristics of a shape?

(Starfall.M.1) How can knowing the name and value of coins help us in the real world?

(Starfall.MD.2) How can we use graphs to understand information and answer questions?

Enduring Understandings

Shapes help us make sense of our environment.

We collect and use data to help us answer questions and make decisions.

Sets of objects can be grouped and counted so that we can compare them in terms of greater than, less than, and equal to.

The quantity of things can be represented in a variety of ways (e.g. Money).

Adding is putting groups together and making more; subtracting is taking groups apart and making less.

Vocabulary

The children will be introduced to these vocabulary words. Mastery is not expected at this time.

Above	Five-frame	Most	Tails
Bank	Graph	Next to	Toss
Beside	Greater than	Nickel	Venn diagram
Between	Heads	Penny	
Cent	In front of	Positional	
Coins	Least	President	
Dime	Less than	Probability	

Recommended Literature

Museum Shapes by The (NY) Metropolitan Museum of Art

Shape by David Goodman

The Greedy Triangle by Marilyn Burns and Gordon Silveria

Round Is a Tortilla: A Book of Shapes by Roseanne Greenfield Thong and John Parra

Pennies (Welcome Books: Money Matters) by Mary Hill

Nickels (Welcome Books: Money Matters) by Mary Hill

Dimes (Welcome Books: Money Matters) by Mary Hill

A Chair for My Mother by Vera B. Williams

Standards & Benchmarks

Progress on the following standards and benchmarks will be made through the course of this unit. For your convenience, applicable learning outcomes are listed alongside each lesson in summary form.

Starfall Standards

Counting & Cardinality

- CC.3** Count backward from a given number.
- CC.4** Count to 100 by twos and by fives.

Money

- M.1** Identify the value of coins.

Operations & Algebraic Thinking

- OA.1** Identify, describe, or extend simple patterns.

Measurement & Data

- MD.2** Use and interpret graphs.

Common Core Standards

Counting & Cardinality

Inline Summary Form

- A.1** Count to 100 by ones and by tens. *Count to 100 by ones and by tens.*
- A.2** Count forward beginning from a given number within the known sequence (instead of having to begin at 1). *Count forward from a given number.*
- B.4** Understand the relationship between numbers and quantities; connect counting to cardinality. *Understand the relationship between numbers and quantities.*
- B.4a** When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. *Say number names in order, pairing each object with one number.*
- B.4c** Understand that each successive number name refers to a quantity that is one larger. *Each successive number refers to one more.*
- C.6** Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. *Identify greater than, less than, and equal to.*
- C.7** Compare two numbers between 1 and 10 presented as written numerals. *Compare two numbers as written numerals.*

Operations & Algebraic Thinking

Inline Summary Form

- A.1** Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. *Represent addition and subtraction in a variety of ways.*

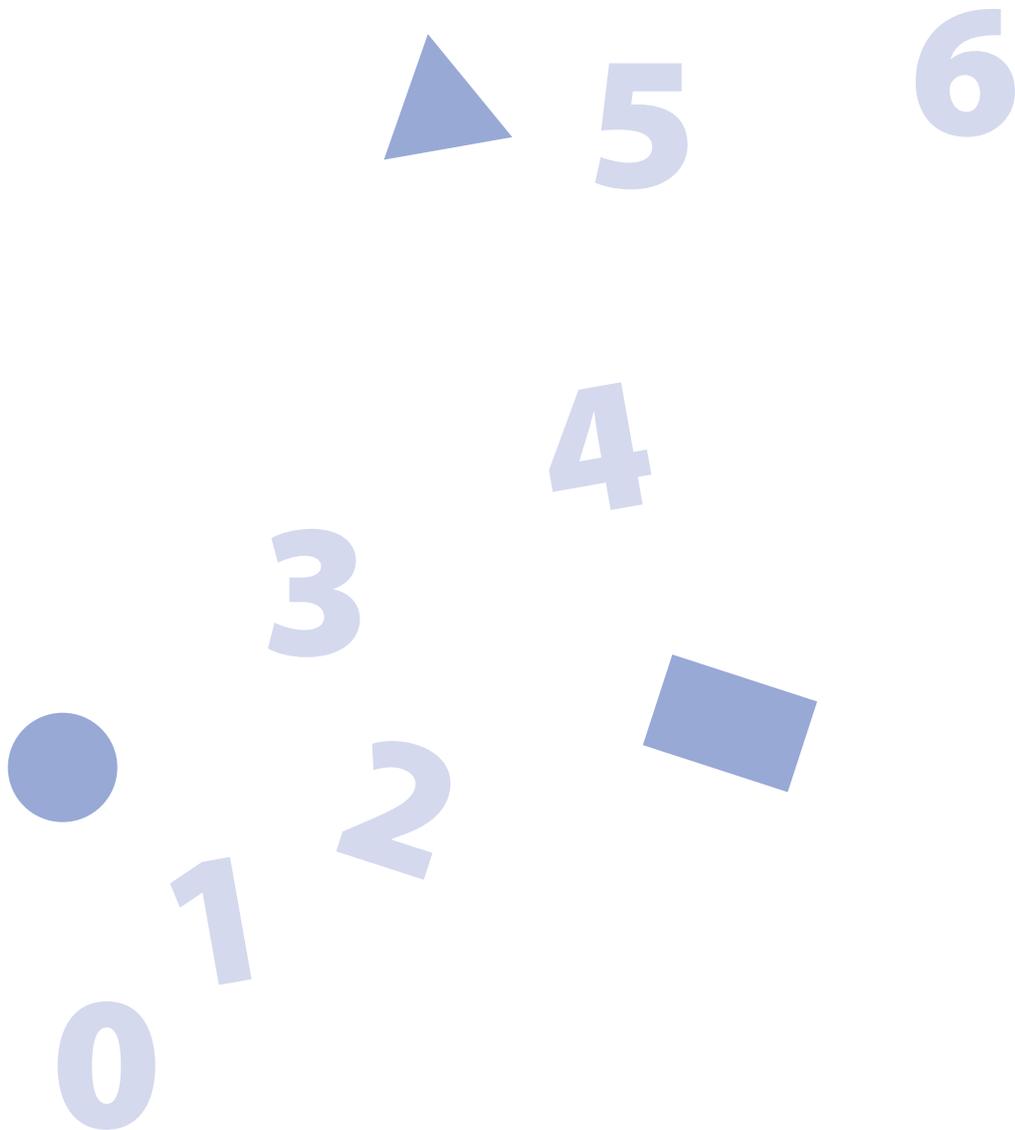
Measurement & Data

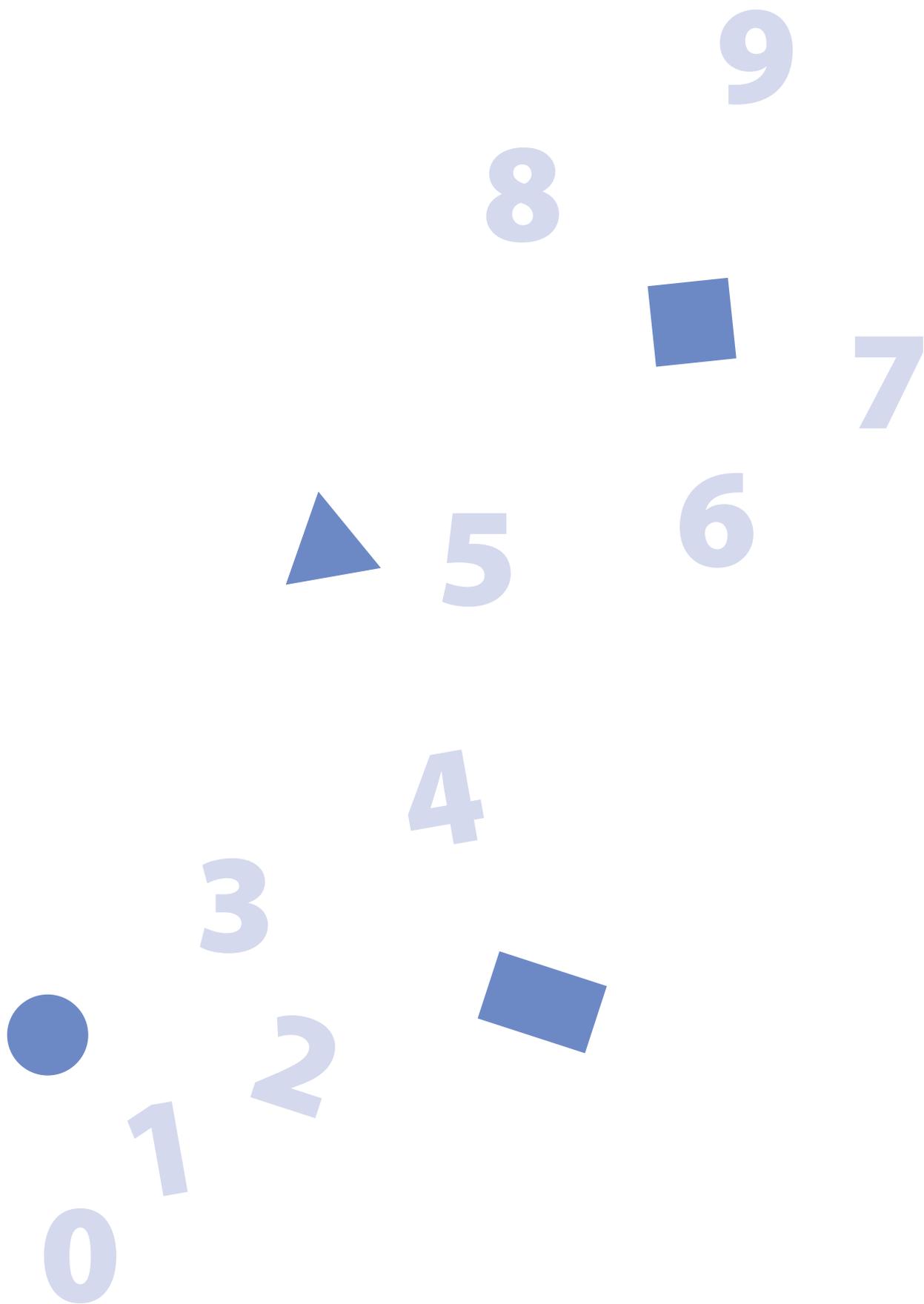
Inline Summary Form

- B.3** Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. *Classify, count, and sort objects.*

Common Core Standards (Continued)

Geometry	Inline Summary Form
A.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.	<i>Describe objects using shapes and relative positions.</i>
A.2 Correctly name shapes regardless of their orientations or overall size.	<i>Correctly name shapes.</i>
B.6 Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"	<i>Compose simple shapes to form larger shapes.</i>





Daily Routines



Calendar

- A volunteer tells the name of the month.
- The children name the days of the week.
- The calendar helper turns the next number.

Refer to this page for reminders of the Daily Routines for each day in this Unit.



Weather

- Review yesterday's weather.
- The meteorologist goes to the window to look outside, predicts the weather, and places a tally mark under his or her prediction.
- Add a tally mark next to today's weather on the Weather Graph.



Number Line

- Point to and count the days on the number line by ones, fives, or tens.
- Sing "How Many Days Have We Been In School?"
- Remove the sticky note to reveal the next number.

How Many Days Have We Been In School?

(Tune: "Here We Go Round the Mulberry Bush")

How many days have we been in school, been in school, been in school?

How many days have we been in school, who can tell me please?

Counting & Cardinality

A.2 – Count forward from a given number.

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

B.4a – Say number names in order, pairing each object with one number.

B.4b – The last number counted tells the total number of objects.

B.4c – Each successive number refers to one more.



Place Value

- Review the number of bundles and sticks in the *Tens* and *Ones* containers.
- Add one stick to represent today, and place it in the *Ones* container.
- Write the numeral that represents the number of days the children have been in school on the board.
- Every tenth day the children bundle the ten sticks that are in the *Ones* container and place the bundle in the *Tens* container.



Hundreds Chart

- The number helper turns the next number on the chart.
- Ask: **The hundreds chart shows we have been in school how many days?**

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 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"

1

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

2

"Shape Town" Game

3

Evaluate and interpret the Shape Graph

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

Teacher's Choice

4

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

Summative Assessment: Positional Words

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).

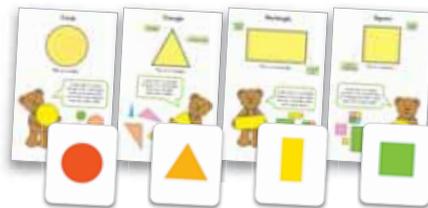
2 Identify the Circle, Triangle, Square, and Rectangle

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



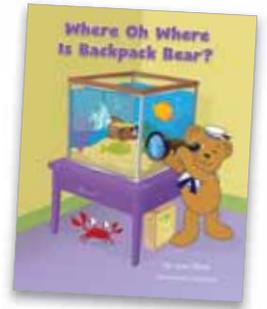
Whisper to a volunteer to hold Backpack Bear above his or her head. The class identifies Backpack Bear’s position using positional words. Assist if necessary. Repeat for the following:

- 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

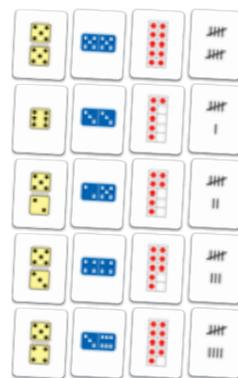
The children partner and mix their sets of cards together. They place the cards face up on the floor or a table. One partner says a number from six to ten. The partners look through the cards and each partner selects the five ways to represent the number.

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.

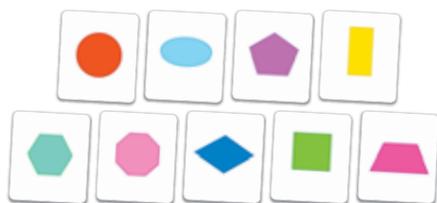
B.6 Compose simple shapes to form larger shapes.

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:

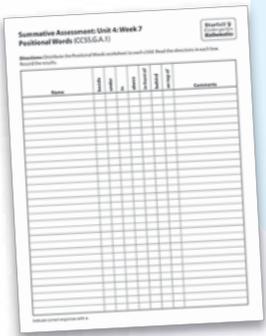
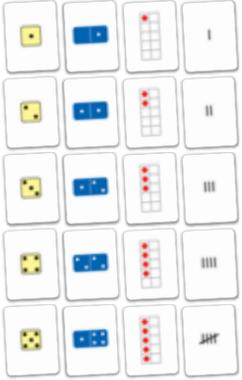
Place the block...

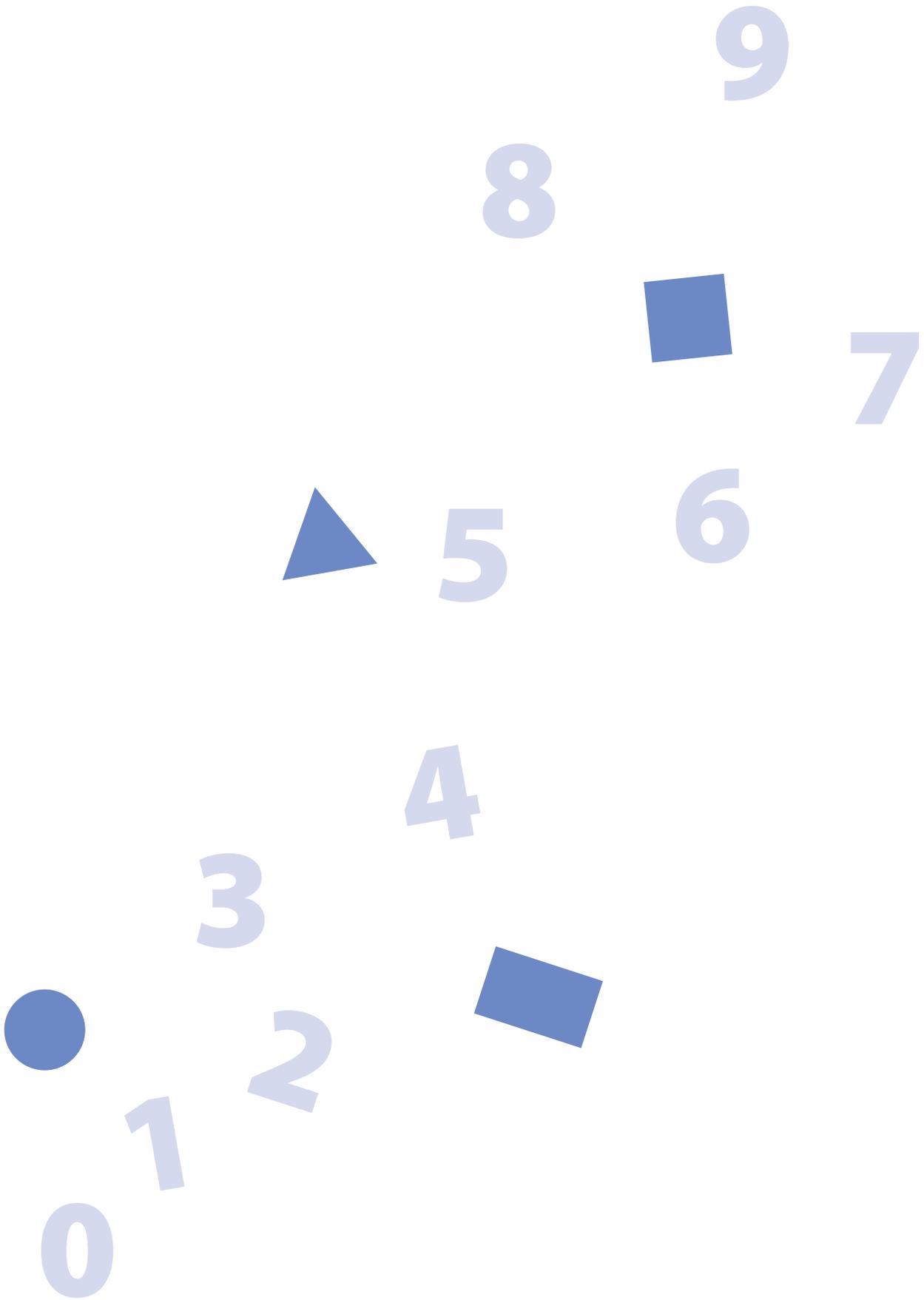
- beside, or next to, the container
- under the container
- in the container
- above the container
- in front of the container
- behind the container
- on top of the container

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





Week 8 Summary

The children will be introduced to money and learn interesting facts about the penny, nickel, and dime. They will become familiar with the value of each of the coins, and learn rhymes that will help distinguish each of them. The children will also:

- Use a Venn diagram to compare and contrast coins
- Sort coins by attributes
- Graph results of penny tosses (heads/tails)



Preparation

This week the children will examine the values and attributes of coins. They will sort coins by attributes, and compare and contrast them using a Venn diagram. Plan to use real coins this week since real coins vary and plastic ones do not.

Prepare a resealable bag for each child. The children will add coins to their bags throughout the lessons and store them in their math bags.

Backpack Bear will help the children learn about money through the use of his own bank. Since he is a bear, his bank is a honey jar. Plan to have some sort of plastic or other unbreakable jar to use as Backpack Bear's "honey jar" bank for **Day 2**.

Invite the children to bring teddy bears or other stuffed animals for "Ten Bears in a Bed" on **Day 3**.

DAY 1

Prior to today's lesson, place a penny in Backpack Bear's backpack.

You will need one real penny per child.

Prepare a chart paper "toss chart" similar to the one pictured to keep track of penny tosses.

Toss	Heads	Tails

Optional: Have several magnifying glasses available for the children to use to closely examine pennies.

DAY 2

You will introduce Backpack Bear's "honey jar" bank today. Place five pennies in the bank and place the bank in your desk prior to today's lesson.

Also, prior to today's lesson place a nickel in Backpack Bear's backpack. You will also need a real nickel for each child.

DAY 1

DAY 2

Daily Routines

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

Magic Math Moment

Human tally marks (how to use tally marks)

Count by fives

Math Concepts

Introduce

The penny

Introduce

The nickel

Examine pennies
Heads and tails

Backpack Bear's Honey Jar Bank

Graph coin (penny) tosses and probability

Examine nickels and their value (equal to five pennies)

Formative / Summative Assessment

Compare coin tosses to determine if there are more heads or more tails

Venn diagram comparing pennies and nickels

Workbooks & Media

"Penny, Penny" Rhyme

"Nickel, Nickel" Rhyme

DAY 3

DAY 4

DAY 5

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

Learning Centers

Dramatize "Ten Bears in a Bed" (counting backward)

Count by ones, fives, and tens

Starfall.com:

- Monthly Calendar
- Numbers: "0-10"
- Numbers: "Cookies"
- Geometry and Measurement: "Patterns"

1

Backpack Bear's Honey Jar Bank

Review Penny, Nickel, Dime

"Coin Town"

2

Introduce

The dime

Examine dimes

Introduce

"Coin Town" Game

Coin Concentration

3

Distinguish pennies, nickels, dimes, and their attributes

Identify pennies, nickels, and dimes

Teacher's Choice

4

Math Melodies CD Track 23, "Ten Bears in the Bed"

"Dime, Dime" Rhyme

Workbook page 21



Summative Assessment: "Banker, Customer" Game (counting money)

5

Human Tally Marks

Materials

- Yardstick

Say: **Let's review the Weather Chart.** The children count the number of tally marks under each weather picture, and determine which Weather Cards have the most and least numbers.

Gather the children in a circle and choose four volunteers to stand in front of them. Say: **Let's make human tally marks!**

Instruct the four volunteers to lie down side-by-side. Say: **Let's count how many children there are.** Do this.

Say: **Let's add one more.** Place a yardstick diagonally across the four children. Count the children again.

Explain: **When you see the diagonal line on a set of tally marks you automatically know there are five. You don't even have to count them! Tally marks are a fast way of counting.**

Repeat with other volunteers as time allows.

Counting & Cardinality

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

Measurement & Data

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

MD.2 - Use and interpret graphs.

Money

M.1 - Identify the value of coins.

Introduce Money

Essential Question: How can knowing the name and value of coins help us in the real world?

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

Materials

- A penny in Backpack Bear's backpack
- A real penny for each child
- Prepared coin toss graph
- Magnifying glass (optional)
- Backpack Bear's Math Big Book, page 13
- Optional:** Magnifying glasses

1 Introduce the Penny

Say: **Backpack Bear has something in his backpack to share with you!**

Remove the penny from Backpack Bear's backpack. Ask: **Who knows what Backpack Bear brought in his backpack?** (Volunteers respond.) **Yes, Backpack Bear would like us to learn about money so he brought a penny. A penny is a coin that is worth one cent.**

2 Introduce the Penny Rhyme

Indicate *Backpack Bear's Math Big Book*, page 13.

Say: **Backpack Bear has a rhyme to help us learn about a penny. Look at the "Penny, Penny" page. It has a picture of a penny and Backpack's rhyme.**

Read "Penny, Penny." Repeat the rhyme and encourage the children to join you.

Distribute a penny to each child. Say: **Look closely at your penny. How would you describe a penny to someone who has never seen one?** Volunteers describe the penny naming its color, size, heads, tails, numbers, shape, words, etc.

Optional: Distribute a magnifying glass to each table to allow the children to examine the penny more closely.

After the children have had a chance to examine the penny, discuss the following:

- A penny is worth one cent
- Each item on the penny represents something important

Say: **Turn the penny to the side where you see a person's head. The head on a coin is usually a famous United States president. The penny shows Abraham Lincoln. Abraham Lincoln was our sixteenth president and the first president to have a beard!**



3 Heads and Tails

Say: **Stand and put your hand on your head.** (The children do this.) **Now, put your hand on your tail!** (The children do this.) **A coin has two sides. We call one side "heads" and the other side "tails." Which side do you think we call "heads?"**

Continue: **Have a seat and turn your penny over to the tails side. This side of a coin always pictures something special related to the president or to our country.** Explain that older pennies picture the Lincoln Memorial, while newer ones picture the Union Shield. Assist the children to identify which of these is pictured on each of their pennies.

Gather the children on a rug or the floor. Say: **Let's play "Heads and Tails." When I give the signal, gently toss your coin in the air and let it fall to the floor.** Demonstrate and signal the children to toss their pennies.

Say: **Some of the pennies landed "heads up" and some of the pennies landed "tails up." Look closely at your penny to see if it landed on heads or tails.** (The children do this.) **Stand if your penny landed "heads up." Let's count how many pennies landed on heads.** Do this, and repeat for tails.

4 Toss the Coin

Indicate the coin toss graph and say: **Let's play "Toss the Coin." Each time we toss the coin we will observe whether it lands on "heads" or "tails." We will keep track on this coin toss graph. Then we will compare the numbers.**

To play "Toss the Coin":

- Write the numeral 1 in the toss column.
- The children toss their pennies.
- They stand if their pennies landed heads up.
- Count the children standing and record the number in the heads column. The children sit.
- Children stand if their pennies landed tails up.
- Count these children and record the number in the tails column. The children sit.
- Review the heads and tails numbers.
- Ask: **Which has the greater number, heads or tails?**



Formative Assessment

Probability: Heads and Tails

Repeat "Toss the Coin" several times. Vary your questions by sometimes asking which has the number that is less than the other.

After each toss, review the graph. Say: **Look at the numbers. Were there more tosses that landed heads or tails?**

Continue: **I wonder what the probability, or chance, is that on the next toss more pennies will land on heads. Do you think next time there will be more heads or more tails? Why?**

Review "Penny, Penny."

Instruct the children to place the pennies in their math bags for future use.

Count by Fives

Direct the children to look at the Classroom Number Line. Lead them to count by fives, as you indicate each number beginning at negative five.

Materials

- None

Introduce the Nickel

1 Introduce Backpack Bear's Bank

Say: **Backpack Bear brought something with him to school today. He can't wait for you to see it! Backpack Bear would like you to guess what he brought. It has something to do with money.**

Volunteers guess.

Backpack Bear whispers that his surprise is in your desk. Go to your desk, locate Backpack Bear's "honey jar" bank, and show it to the children.

Say: **Look! Backpack Bear brought his bank to school today. Because he is a bear and he loves honey, his bank is a honey jar. Raise your hand if you have a bank at home.** (The children do this.)

Ask: **Why do we use banks?** Discuss.

Continue: **Backpack Bear has been doing chores at home to earn money. He doesn't have much yet, but he is trying very hard. Let's see what coins Backpack Bear has so far.**

Count out the 5 pennies. Ask: **How much money does Backpack Bear have in his bank so far?**

2 Introduce the Nickel

Backpack Bear whispers for you to look in his backpack. Do this and remove the nickel.

Say: **Backpack Bear says he has a coin that is worth the same amount as 5 pennies. It's a nickel. Say, nickel.** (The children repeat, nickel.)

Indicate *Backpack Bear's Math Big Book*, page 14.

Say: **Look at this "Nickel, Nickel" page. It has a picture of a nickel. Backpack Bear has a rhyme to help us learn about a nickel.** Read "Nickel, Nickel."

Repeat the rhyme and encourage the children to chime in.

Materials

- "Honey jar" bank for Backpack Bear with 5 pennies inside, hidden in your desk
- Backpack Bear with 1 nickel in his backpack
- A penny and a nickel for each child
- Backpack Bear's Math Big Book*, page 14
- Penny/Nickel Venn diagram
- Math bags
- Optional:** Magnifying glasses

Counting & Cardinality

CC.3 - Count backward from a given number.

Money

M.1 - Identify the value of coins.

Note: If you do not have a honey jar to use in this lesson, use a different container of your choice, and modify the lesson accordingly.



3 Examine the Nickel

Distribute a nickel to each child. Say: **Look closely at the nickel. How would you describe a nickel to someone who has never seen one?** Volunteers describe the nickel, naming its color, size, heads, tails, words, numbers, etc.

Optional: Distribute a magnifying glass to each table to allow the children to examine the nickel more closely.

After the children have had a chance to examine the nickel, discuss the following:

- A nickel is worth five cents
- Each item on a nickel represents something important

Say: **Turn your nickel to the side that shows a person's head. Remember, the head on a coin is usually a famous United States president. The nickel pictures Thomas Jefferson. Thomas Jefferson was our third president. He loved to read and he loved vanilla ice cream!**

Ask: **Who remembers what we call this side of a coin?** Volunteers respond.
Right, it is called "heads" because it pictures a president's head.

Continue: **Turn your nickel over. This side of a coin always pictures something special related to the person on the front, or to our country.** Explain that older nickels picture Monticello (Thomas Jefferson's home) while the newer ones picture buffaloes. Assist the children to identify which of these is pictured on their nickels.

Say: **Stand if your nickel has a buffalo on it.** The children do this and then they sit.

Continue: **Stand if your nickel has a picture of Thomas Jefferson's home, Monticello, on it.** The children do this and then they sit.

Explain: **Both coins are nickels even though they may have different pictures on one side. What is the same about both of these coins?** (They both have Thomas Jefferson pictured on the front.)



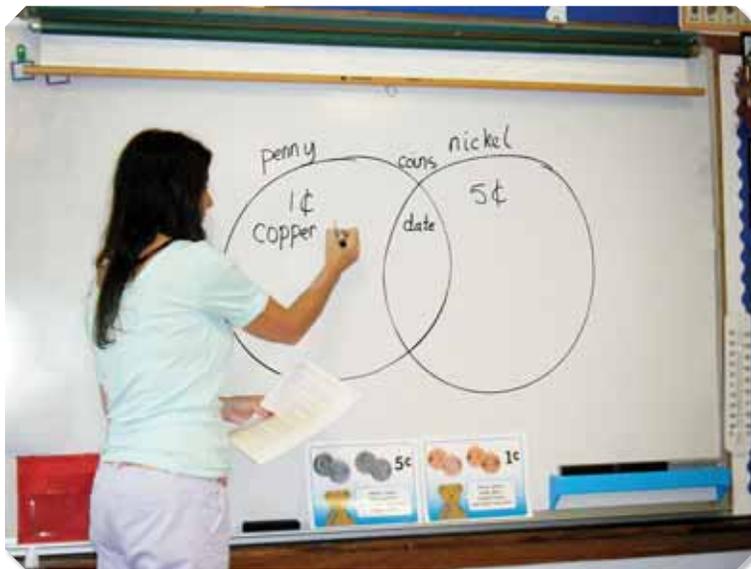
Compare Nickel and Penny

Indicate the Venn diagram. Say: **This is a Venn diagram. It is used to compare how things are the same and how they are different.** Explain the sections.

Ask: **How are a penny and a nickel the same?** (Volunteers respond. Example: They are both coins.) **Right, they are both coins. I will write coins in the center section of the Venn diagram because that section shows how both things are similar or alike. Are these coins alike in any other ways?** Continue to record correct responses in the center section of the Venn diagram.

Continue: **Now let's see if we can identify ways the penny and the nickel are different.** The children examine the penny. Write observations that are unique to the penny in the "penny" section of the Venn diagram. The children examine the nickel and you record ways a nickel is unique in the "nickel" section of the Venn diagram.

Review "Nickel, Nickel." The children place the nickels (and pennies) in their math bags for future use.



Dramatize “Ten Bears in the Bed”

Materials

- Math Melodies CD, Track 23

Say: **Listen to this song about what happened when ten bears tried to sleep in one bed.**

Play *Math Melodies* CD Track 23, “Ten Bears in the Bed.” Select 10 children to come forward with their teddy bears and lay them on a blanket or a table and dramatize the song. Repeat if time allows so other children have a turn.

“Ten Bears in the Bed”

<i>Ten bears in the bed</i>	<i>Nine bears in the bed...</i>	<i>Five bears in the bed...</i>	<i>One bear in the bed</i>
<i>And the little one said</i>	<i>Eight bears in the bed...</i>	<i>Four bears in the bed...</i>	<i>And the little one said</i>
<i>“I’m crowded, roll over”</i>	<i>Seven bears in the bed...</i>	<i>Three bears in the bed...</i>	<i>“Good night!”</i>
<i>So they all rolled over</i>	<i>Six bears in the bed...</i>	<i>Two bears in the bed...</i>	
<i>And one fell out</i>			

Counting & Cardinality

CC.3 - Count backward from a given number.

Money

M.1 - Identify the value of coins.



Introduce the Dime

1 Backpack Bear’s Honey Jar Bank

Say: **Backpack Bear brought his honey jar bank to school again today. Let’s ask him if he earned more money last night.** The children do this.

Pretend Backpack Bear whispers to you. Explain: **Backpack Bear says he worked very hard last night and earned more money to put into his bank. He thinks you will be very surprised to see what’s in his bank today. What do you think his surprise is?** (Volunteers respond.) **Let’s find out!**

Empty the contents of Backpack Bear’s bank onto a table. Lead the children to discover that a different coin, a dime, has been added.

Indicate *Backpack Bear’s Math Big Book*, pages 13 and 14.

- Page 13 – Read the rhyme to review the name and value of a penny.
- Page 14 – Read the rhyme to review the name and value of a nickel.

2 Introduce a Dime

Indicate *Backpack Bear’s Math Big Book*, page 15.

Say: **Let’s look at this page. It has a picture of a dime. Listen as I read the rhyme.** Read “Dime, Dime.”

Repeat the rhyme and encourage the children to chime in.

Materials

- “Honey jar” bank for Backpack Bear with 5 pennies, 1 nickel, and 1 dime
- Math bags containing a penny and a nickel
- A dime for each child
- Backpack Bear’s Math Big Book*, pages 13, 14, and 15
- Prepared sentence strip: *I know this is a _____ because _____.*
- Picture Cards: *penny, nickel, dime*
- Optional:** Magnifying glasses

3 Examine the Dime

Distribute a dime to each child. Say: **Look closely at the dime. How would you describe a dime to someone who has never seen one?** Volunteers describe the dime, naming color, size, heads, tails, numbers, etc.

Optional: Distribute a magnifying glass to each table to allow the children to examine the dime more closely.

After the children have had a chance to examine the dime, discuss the following:

- A dime is worth ten cents
- Each item on a dime represents something important

Say:

- **Remember, the head on a coin is usually a famous United States president. The dime pictures Franklin D. Roosevelt. Franklin D. Roosevelt was our 32nd president.**
- **He was the only president to be elected by the people four times in a row!**

Continue: **Turn your coin over. This side of a coin always pictures something special related to the person on the front, or to our country. This picture is very small. See if you can find the torch, the oak leaves, and an olive branch.**

Note: Recent dimes have only one representation on the tail side.

The children add their dimes to their math bags.



Formative Assessment

Partner Share

Indicate the prepared sentence strip. Say: **Let's read this sentence together. I know this is a (blank) because (blank). We'll work together to complete the sentence.**

The children take their math bags and partner, using the Stand Up, Hand Up, Partner Up procedure. Say: **Clap once if you can hear me.** (The children do this.) **Clap three times if you can hear me.** (The children do this.)

Place the dime Picture Card in the first blank and read: **I know this is a dime because (blank).**

Say: **Partners, hold up your dimes. Talk with your partners about how you know this is a dime. When you hear the signal, you will share your ideas with the class. Ready? Begin sharing.**

After an appropriate amount of time signal the children to stop. They take turns sharing their responses to complete the sentence.

Repeat this procedure with the nickel and the penny.

Gather the children together.

Review the Penny, Nickel, and Dime Rhymes.

The children place the coins in their math bags for future use.



Magic Math Moment

DAY

4

Count by Ones, Fives, and Tens

Direct the children to look at the Classroom Number

Line. Say: **Let's count by ones. We will start at 5 and count to 30. Ready?**

Indicate the numbers on the Number Line as the children do this.

Say: **Now, let's count by fives. We will start at negative 5 and count to 30.**

Indicate the numbers on the Number Line as the children do this.

Say: **This time let's count by tens. We will start at 10 and count to 30.**

Materials

 None

Review Penny, Nickel, Dime

1 Introduce "Coin Town"

Say: **Backpack Bear is taking his honey jar bank to the big bank. He needs your help to get there!**

Indicate the "Coin Town" game board. Ask: **What do you see on the game board?** Discuss.

Choose several children to demonstrate the game, which will be played during Learning Centers on Day 5. They do not need to complete the game.

Explain: **Players, place your playing pieces on the start.** (The children do this.) **You will take turns to spin then move your playing piece to the next coin equal to the amount shown on the spinner.**

For example, if a player spins "1 cent" he or she moves to the first penny. If the player spins "5 cents," he or she moves to the first nickel. If a player lands on a spin-again star, he or she takes another turn. The first player to get to the bank wins, or play may continue until both players reach the bank.

Materials

- "Coin Town" game board
- Playing pieces
- Coin spinner
- Backpack Bear's Math Workbook #1*, page 21
- Scissors, glue sticks, pencils, crayons
- Optional:** Math bags

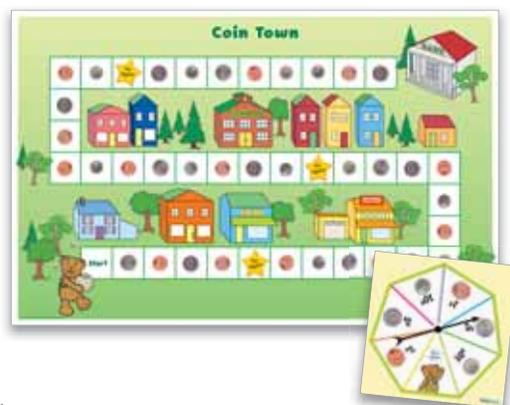
Counting & Cardinality

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

CC.4 - Count to 100 by twos and by fives.

Money

M.1 - Identify the value of coins.





Formative Assessment

Color Pennies, Nickels, and Dimes

Distribute *Backpack Bear's Math Workbook #1*. Instruct the children to turn to page 21.

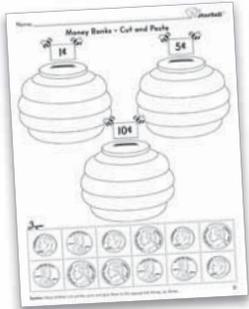
Note: The children may use their math bags containing a penny, nickel, and dime for reference.

Prior to beginning, the children:

- Identify all the pennies and color them brown
- Identify all the nickels and color them gray
- Identify all the dimes, but do not color them (unless silver crayons are available)

The children cut apart the coins at the bottom of the page and glue them into the correct honey banks.

If time allows, the children count by ones, fives, and tens to determine how many cents there are in each honey bank.



Learning Centers

DAY

5

1 Computer

The children explore:

- Monthly calendar
- Numbers: "0-10"
- Numbers: "Cookies"
- Geometry and Measurement: "Patterns"

Materials

- Computers navigated to *Starfall.com*

2 "Coin Town" Game

The children play "Coin Town," which was introduced on **Day 4**.

Players place their playing pieces on start. They take turns spinning the spinner and moving their playing pieces to the next coin that equals the amount shown.

If a player lands on a spin-again star, he or she takes another turn. The first player to get to the bank wins, or play may continue until all players reach the bank.

Materials

- 1 or 2 "Coin Town" game boards
- Playing pieces
- 1 or 2 coin spinners

3 Coin Concentration

The children play "Coin Concentration" by taking turns reaching into a small paper bag and drawing two coins.

The first player places his or her coins on a table and checks to see if they match. If the coins match, he or she places them one on top of the other and play continues with the next child. If the coins do not match, the child places them back into the bag and play continues. The children may also turn the matched coins so that one shows heads and the other tails.

Materials

- Several pairs of pennies, nickels, and dimes in a small paper bag

4 Teacher's Choice

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

Counting & Cardinality

A.2 - Count forward from a given number.

Operations & Algebraic Thinking

OA.1 - Identify, describe, or extend simple patterns.

Money

M.1 - Identify the value of coins.

5 Summative Assessment: "Banker, Customer"

Appoint one child to be the "banker." The banker is in charge of the container of coins.

The other children are customers. The first child rolls his or her die on a math mat and counts the dots. He or she asks the "banker" for that number of cents. The banker gives the child the money from the container. At any time a child may exchange 5 pennies for a nickel or 2 nickels for a dime with the banker.

Note: If a child rolls a 5 or 6, he or she may ask for a combination of coins. (Example: 1 nickel and 1 penny)

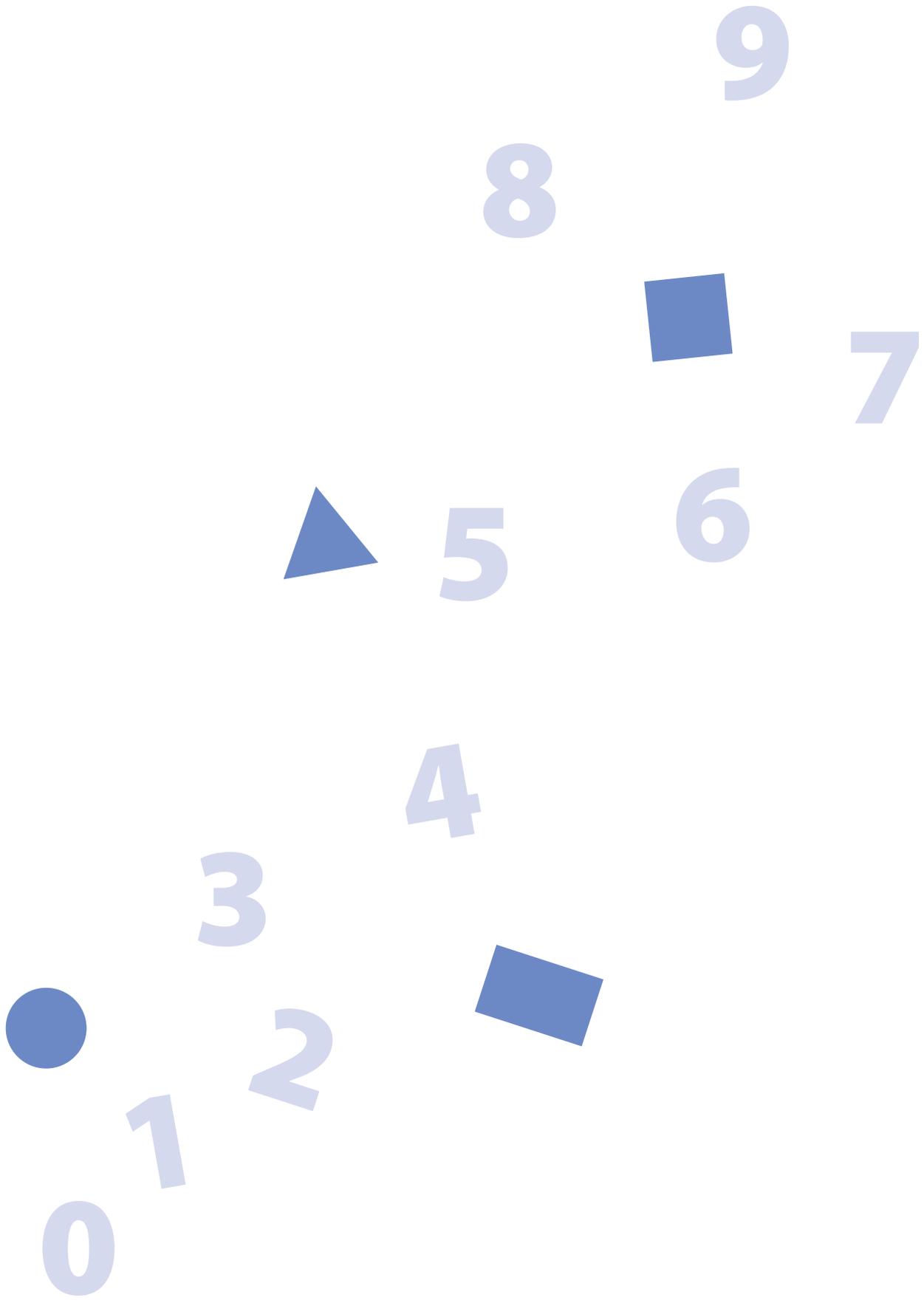
As the children play the game, assess each child individually.

To perform this assessment, show individual children a coin and ask them to name it and tell you how much it is worth. Repeat for each coin. Record the children's mastery on the Unit 4 – Week 8 Summative Assessment Checklist.

Materials

- Several pairs of pennies, nickels, and dimes in a small paper bag or black tube sock
- One die per child
- Container of pennies, nickels, and dimes
- Summative Assessment Checklist Unit 4 – Week 8
- Math mats





Week 9 Summary

The children will become more familiar with ten-frames and use them as a tool for solving equations and story problems. The children will also:

- Discriminate more than, less than, and equal to
- Use one-to-one correspondence
- Create and compare sets of connect cubes
- Solve number riddles

Preparation

DAY 1

Position the classroom ten-frame horizontally on a whiteboard. You will need five large red circles and five large blue circles that fit into the ten-frame sections. Create the circles so there is some additional space in the boxes. You will also need reusable adhesive or rolled masking tape. If your whiteboard is magnetic, use large colored magnets instead of circles.

The children will use their math bags containing connect cubes and a ten-frame.

DAY 2

You will need a classroom ten-frame and ten large circles or magnets that fit into the ten-frame sections.

DAY 3

Fill a container with pennies, nickels, and dimes, enough for each child to receive one coin. You will also need three paper plates and one individual whiteboard and marker.

DAY 4

Project or navigate a computer to *Starfall.com*: Math Songs, "Ten Little Kittens."

You will use a classroom ten-frame, an individual whiteboard and marker, and the container of coins. The children will need their math bags. They should contain a ten-frame and a resealable plastic bag that contains 10 pennies.

DAY 1

DAY 2

Daily Routines

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

Magic Math Moment

"The Ants Go Marching"

Distinguish more and less

Math Concepts

Demonstrate one-to-one correspondence
Identify shapes and number of sides; match to ten-frames

Demonstrate more and less
Create sets that are more than, less than, and equal to using ten-frames

Formative / Summative Assessment

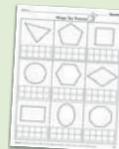
Color corresponding squares to match written numerals

Partners create sets to match letters in words and determine which has more or less, or if they are equal

Workbooks & Media

Math Melodies CD Track 24, "The Ants Go Marching"

Workbook page 23



DAY 3

DAY 4

DAY 5

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

Learning Centers

Number Line Riddles (more and less)

"Ten Little Kittens"

Starfall.com:

- Monthly Calendar
- Math Songs: "Ten Little Kittens"
- Add & Subtract: Addition Intro: "Let's Add Potatoes" and "Make 10"

1

Review Penny, Nickel, and Dime
Sort coins
Compare coin groups

Solve addition equations using money
Write equations to match ten-frames
Equivalent coin values
Story Problems

Ten-frames

2

Evaluate value of coin groups

Solve a story problem (addition)

"Coin Town"

3

Teacher's Choice

4

Starfall.com, Math Songs: "Ten Little Kittens"

Summative Assessment: Number Cards— High/Low

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"The Ants Go Marching"**Materials**

- Math Melodies CD, Track 24

Say: **Let's listen to a song about some marching ants.**

Ready? Play *Math Melodies* CD Track 24, "The Ants Go Marching." The children listen and create simple motions to accompany the song.

"The Ants Go Marching"

The ants go marching one by one, hurrah, hurrah

The ants go marching one by one, hurrah, hurrah

The ants go marching one by one

The little one stops to suck his thumb

And they all go marching down to the ground

To get out of the rain, BOOM! BOOM! BOOM!

The little one stops to tie his shoe...

The little one stops to ride a bee...

The little one stops to ask for more...

The little one stops to jump and to dive...

The little one stops to pick up sticks...

The little one stops to write with a pen...

The little one stops to roller skate...

The little one stops to drink and dine...

The little one stops to shout "The End!"

Counting & Cardinality

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

B.4a - Say number names in order, pairing each object with one number.

B.4c - Each successive number refers to one more.

Ten-Frames

Essential Question: How can we use a ten-frame to compare numbers?

Materials

- Math bags containing connect cubes and 1 ten-frame
- Backpack Bear's Math Workbook #1*, page 23
- Classroom ten-frame
- 2-D Shape Cards
- Ten large magnets
- Pocket chart
- Crayons

1 Demonstrate One-to-One Correspondence

The children gather in front of a pocket chart with their math bags. Display the 2-D Shape Cards in a pocket chart face down, and attach the classroom ten-frame to a whiteboard close by.

Say: **Today let's play a one-to-one correspondence game.** Reveal a Shape Card and a volunteer identifies the shape. The volunteer counts the number of sides.

Ask: **If we want to create one-to-one correspondence between magnets in a ten-frame and sides on a triangle, how many magnets would we place in the ten-frame?** (Volunteers respond.) **Right, a triangle has 3 sides so we would place 3 magnets in the ten-frame to create one-to-one correspondence.**

A volunteer places 3 magnets on the classroom ten-frame.

2 Match Ten-Frames and Sides of Shapes

The children return to their seats and remove the ten-frame and ten cubes from their math bags. A volunteer reveals a Shape Card and identifies the shape. He or she counts the number of sides. Each child places the corresponding number of cubes in his or her ten-frame. Confirm that each child has the correct number of cubes, then the children clear their ten-frames.

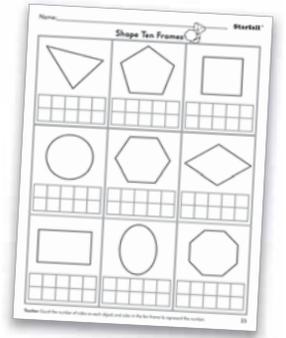
Repeat this procedure for the remaining Shape Cards.



Formative Assessment

One-to-One Correspondence

Distribute *Backpack Bear's Math Workbook #1*. Instruct the children to turn to page 23. Explain that they will count the sides of the shapes and color the equivalent number of boxes in the ten-frames. Observe the children as they work to determine whether they understand the concept of one-to-one correspondence.



"Thumbs-Up, Thumbs-Down"**Materials** None

Say: **Look at the number I write on the board and listen to the number I say. If the number I say is more than the number I wrote, give a thumbs-up.** Demonstrate this.

Say: **If the number I say is less than the number I wrote, give a thumbs-down.**

Write 6 on the board and say: **One. Is one more than six or less than six?** (Volunteers respond.) **Right, one is less than six, so give a thumbs-down. Let's try another one. Eight, is eight more than six or less than six?**

Repeat with several additional examples.

Counting & Cardinality

B.4a - Say number names in order, pairing each object with one number.

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

CC.7 - Compare two written numerals between 1 and 10.

**Ten-Frame Activities:
More and Less****Materials**

- Classroom whiteboard, markers
- Classroom ten-frame
- Prepared circles or magnets
- Math bags

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

1 Demonstrate More and Less

Choose 6 boys and 4 girls to stand in the front of the classroom. (The boys stand together and the girls stand together.) Say: **There are two sets of children, a set of boys and a set of girls.** Ask:

- **Which set has more children?**
- **Which has less?**
- **How can we make sure?**

Explain: **We can use one-to-one correspondence to check. We'll match one boy with one girl.** (Do this.) **Are there any children left? Yes, there are two boys left. That means there are more boys than girls, and there are less girls than boys!**

2 Using Ten-Frames to Demonstrate More

Gather the children around a classroom whiteboard with the Classroom Ten-Frame displayed. Say: **Now let's have some fun working with sets that are more than, less than, and equal to.**

Choose volunteers to place five blue circles (or magnets) in the top row of the ten-frame and other volunteers to place three red circles (or magnets) in the bottom row. Ask:

- **How many blue circles are there?**
- **How many red circles are there?**
- **Which set has more?**
- **How do you know?**
- **How many more blue circles than red circles are there?**

Demonstrate one-to-one correspondence to check answers by drawing arrows from each blue circle to the red circles below them.

The children remove the ten-frames from their math bags.

Say: **Now you will make your own sets using your ten-frames and connect cubes.**

- **Place four cubes in the top row.**
- **Now place five cubes in the bottom row.**

Continue: **Use one-to-one correspondence to tell which set has more, the set of four cubes or the set of five cubes.** The children do this. Ask:

- **Which set has more?**
- **How do you know?**

The children should understand that if a set has extra connect cubes after the cubes are matched, that set has more than the other one.

The children remove the connect cubes. Say: **Let's try another one.**

- **Make a set of two cubes in the top row.**
- **Make a set with more than two cubes in the bottom row.**
- **Now use one-to-one correspondence to make sure the bottom row has more cubes.**

Ask: **How many cubes did you put in the bottom row?** (Answers will vary.)
How do you know that the bottom row has more cubes?



Formative Assessment

Partner Share

Instruct each child to partner with the child sitting beside them. Identify which child is “Partner 1” and which is “Partner 2” in each pair. Partners will share the same ten-frames.

Say: **I will write a word on the board. Partner 1, place a connect cube in the top row for each letter in the word. Ready? The word is *frogs*. Remember, place one cube for each letter in the word *frogs* in the top row.** The children who are “Partner 1” do this.

Continue: **Partner 2, your word is *cat*. Place a cube for each letter in the word *cat* in the bottom row.** The children who are “Partner 2” do this.

Say: **Partners, discuss which word has more letters and which word has less.** Volunteers share their results.

After a short time, say: **Let’s try another one. Partner 1, your word is *red*. Place a cube in the top row for each letter in the word *red*.** The children who are “Partner 1” do this.

Continue: **Partner 2, your word is *dog*. Place a cube in the bottom row for each letter in the word *dog*.** The children who are “Partner 2” do this.

Partners discuss which word has more letters and which has less, and conclude that the sets are equal.

Ask: **What do you notice about these two sets? Right! Both sets have the same number of letters. These sets are equal or the same.**

Partners work together to create their own sets that are more than, less than, or equal to each other. Circulate to observe and assist when necessary.

Number Line Riddles

Materials

 None

Say: **Let's solve some number line riddles.**

Who's ready? Remind the children that they may use the strategies of referencing the Classroom Number Line or using their fingers to arrive at the answers.

Say:

- **I am the number that is 3 plus one more. What number am I?**
- **I am the number that is 1 less than 5. What number am I?**
- **I am the number that is 4 and 2 more. What number am I?**
- **I am the number you get when you start at 0 and count up 9. What number am I?**

Continue creating riddles for the children to solve, or select volunteers to create riddles for the class.

Operations & Algebraic Thinking

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

Measurement & Data

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

Math

M.1 - Identify the value of coins.

Money Review

1 Review Penny, Nickel, Dime

Indicate *Backpack Bear's Math Big Book*, page 13.

Ask: **Remember when Backpack Bear helped us learn about money? Why do people need money?**

Discuss.

Continue: **Let's see if we remember the rhymes Backpack Bear wrote to help us learn about some different coins.**

Review the penny on page 13, the nickel on page 14, and the dime on page 15.

2 Sorting Coins

Gather the children in a semi-circle and indicate the container of coins.

Say: **Here is a container of coins. Are the coins all the same? How are they different?** The children briefly describe the coins.

Ask: **What do you see in this container? Right, there are pennies, nickels, and dimes.**

Materials

- Backpack Bear's Math Big Book*, pages 13, 14, and 15
- Container with pennies, nickels, dimes (enough for 1 coin per child)
- One individual whiteboard and marker
- Three paper plates



Indicate the three paper plates. Say: **Today we will sort the coins. When we sort things, we put them into groups.**

- Place a penny on one paper plate. Say: **This is a penny. It is worth 1 cent.**
- Place a nickel on the middle paper plate. Say: **This is a nickel. It is worth 5 cents.**
- Place a dime on the third paper plate. Say: **This is a dime. It is worth 10 cents.**

Say: **Let's sort the coins by pennies, nickels, and dimes.**

Randomly distribute a coin from the container to each child.

Say: **When I call your name, bring your coin and place it on the paper plate that has a coin that looks like yours. Then say the name of the coin, and how much it's worth.** The children do this with help from their classmates as needed.

When the sorting is complete say: **Let's give ourselves a Rocket Cheer!**

3 Equivalent Coins

Say: **Let's see if the pennies, nickels, or dimes have the most coins.**

Count the number of pennies, nickels, and dimes. Ask:

- **Which has the most coins?**
- **Which has the least or the lowest number of coins?**



Formative Assessment

Which Is Worth More?

Say: **Here's a hard question! Which group of coins is worth the most? Let's find out!**

Indicate the individual whiteboard.

Say: **A penny is worth 1 cent. Let's count how many pennies there are.**
(Do this.) **There are** (number of pennies) **pennies. Since each penny is worth 1 cent, that means we have** (total cents) **cents.**

On the whiteboard write: _____ pennies = _____ ¢.

Continue: **A nickel is worth more than a penny. It is worth 5 cents. Let's count how many nickels there are.** Do this.

Say: **There are** (number of nickels) **nickels. Since each nickel is worth 5 cents, we can count by fives to tell how many cents there are.** Count by fives with the children to determine the total number of cents.

On the whiteboard write: _____ nickels = _____ ¢.

Continue: **A dime is worth even more than a nickel! It is worth 10 cents. Let's count how many dimes there are.** Do this.

Say: **There are** (number of dimes) **dimes. Since each dime is worth 10 cents, we can count by tens to tell how many cents we have.** Count by tens with the children to determine the total number of cents.

On the whiteboard write: _____ dimes = _____ ¢.

Review the amounts on the whiteboard.

Ask: **Which set of coins is worth the most?** Discuss.

"Ten Little Kittens"

Project, or navigate a classroom computer to *Starfall.com*: Math Songs, "Ten Little Kittens."
The children watch and sing along.

Materials

- Computer navigated to *Starfall.com*

Counting & Cardinality

CC.3 - Count backward from a given number.

Operations & Algebraic Thinking

A.2 - Solve word problems with addition and subtraction within 10.

Math

M.1 - Identify the value of coins.

Solving Addition Equations Using Money

Materials

- Individual whiteboard, marker
- Math bags containing ten-frames and ten pennies in a resealable plastic bag
- Classroom ten-frame
- Container of coins

1 Use Coins to Solve Equations

Display the classroom ten-frame on a table and gather the children in a semi-circle around it.

Say: **Here is a ten-frame. How many sections do you see?** (Volunteers respond.)
Let's count them.

Place 3 pennies in the ten-frame. Ask: **How many pennies are in the ten-frame? Right, there are 3.**

Write $3 + \underline{\quad} = 5$ on the whiteboard and read the equation.

Ask: **How many more pennies should we add to the 3 cents to equal 5 cents?**

A volunteer adds the pennies needed to equal 5.

Ask: **How many pennies did (volunteer's name) add to the 3 pennies to equal 5? Right, 2.**

Write 2 in the equation. Read the completed equation and the children read with you: $3 + 2 = 5$.

Say: **Let's try another one.** Repeat the procedure using $2 + \underline{\quad} = 5$.

2 Math Bags and Coins

Distribute math bags and instruct the children to remove their ten-frames and pennies.

Say: **I have 5 pennies. Let's count to confirm that there are 5 pennies.**
Raise each penny and the class counts to make sure there are 5.

Say: **Take 5 pennies and place them on your ten-frame to match the pennies in my left hand.**

Say: **Now add 2 more pennies to your ten-frame.** (The children do this.) **How many pennies do you have on your ten-frame altogether?**

Say: **Let's write an equation to show what we just did.** (Example: $5\text{¢} + 2\text{¢} = 7\text{¢}$.)

Ask: **Who can read the equation?** A volunteer does this.

3 Equivalent Coins

Backpack Bear whispers to you, "I know a coin that is worth 5 cents!"

Say: **Backpack Bear whispered that he knows a coin worth 5 cents. Do any of you know what coin is worth 5 cents? Right, a nickel is worth the same amount as 5 pennies. Find a nickel in your math bag and hold it up. Say, 5 pennies are worth the same as 1 nickel.**

4 Demonstrate Story Problem #1

Say: **Listen carefully to this story problem. Then you will use your pennies and ten-frames to help solve it.**

Use the names of children in your class in the following story problem.

- (Child's name) **wants to buy a toy dinosaur. The dinosaur costs 10 cents. (Child's name) has 9 pennies. Let's see if we can tell how many more pennies she (or he) needs to buy the toy dinosaur.**
- **How much money does (child's name) have?** (9 cents).
- **Put 9 pennies in your ten-frame to represent the 9 cents.**
- **How much money does (child's name) need to buy the toy dinosaur?** (10 cents)
- **Add pennies to your ten-frame to make 10.**
- **How many pennies did you add?** (one).
- Write $9 + 1 =$ on the board. Say: **Here is the equation that shows what you did. (Child's name) needs 10 cents to buy the dinosaur. She (or he) has 9 cents. You had to add 1 more penny to make 10 cents, so $9 + 1 =$ what?**
- Add the 10 to the equation. Say: **Let's read the equation together.** Indicate the equation as the children read, $9 + 1 = 10$.
- **Does (child's name) have enough to buy the toy dinosaur?**
- Instruct the children to clear their ten-frames.



Formative Assessment

Story Problem #2

Repeat the above procedure for the following story problem.

(Child's name) **needs 10 cents to buy a balloon. He (or she) has 5 pennies. How many more pennies does he (or she) need to buy the balloon?**

Learning Centers

1 Computer

The children explore:

- Monthly calendar
- Math Songs, "Ten Little Kittens"
- Add & Subtract, Addition Intro, "Let's Add Potatoes"
- Add & Subtract, "Make 10"

Materials

- Computers navigated to *Starfall.com*

Counting & Cardinality

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

B.4a - Say number names in order, pairing each object with one number.

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

Operations & Algebraic Thinking

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

A.4 - For 1-9, find the number that makes 10.

Money

M.1 - Identify the value of coins.

2 Ten-Frames

The children take turns spinning the spinner. After each spin the children place the corresponding number of connect cubes or manipulatives on their ten-frames.

The group works together to check each other's work. After they have checked, they remove the manipulatives, the next child spins, and play continues.

Materials

- Prepared game spinner
- Container of connect cubes or manipulatives
- Ten-frame for each child

3 "Coin Town" Game

The children play "Coin Town"

Players place their playing pieces on start. They take turns spinning the spinner and moving their playing pieces to the next coin that equals the amount shown.

If a player lands on a spin-again star, he or she takes another turn. The first player to get to the bank wins, or play may continue until all players reach the bank.

Materials

- 1 or 2 "Coin Town" game boards
- One playing piece for each player
- 1 or 2 coin spinners



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: Banker, Customer

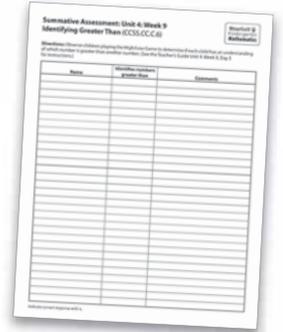
Partner the children and divide the Number Cards so that each set of partners has a set of cards. Partners form a stack of cards face down between them and play “High/Low.”

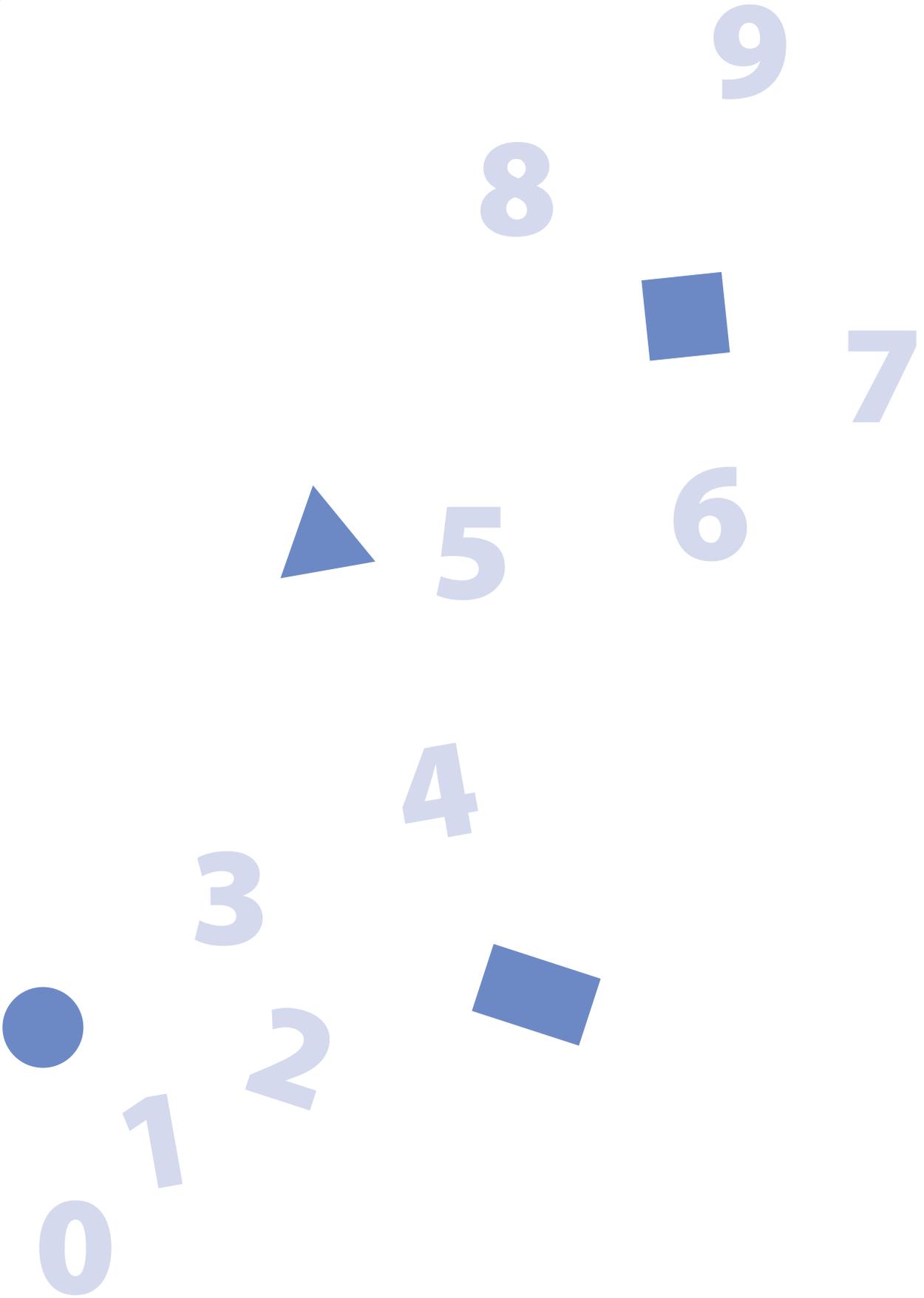
- Partner 1 chooses a card from the stack and turns it over.
- Partner 2 chooses the next card from the stack and turns it over.
- The children compare the two numbers to determine which is the higher number.
- The partner with the higher number takes both Number Cards.
- Play continues until all the cards are drawn.

During this time observe whether the children are able to identify the number that is greater. Record your observations on the Summative Assessment Checklist for Unit 4, Week 9.

Materials

- Summative Assessment Checklist, Unit 4 Week 9
- Number Cards 0-10 (4 sets)







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