



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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Subitizing & Number Bonds

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Subitizing & Number Bonds

Week 16

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Week 16 Summary

This week the children will be introduced to ways of looking closely at number representations and patterns for the purpose of identifying the number represented more easily and quickly. They will be introduced to The Commutative Property of Addition ($2 + 3 = 5$ and $3 + 2 = 5$) and addition number combinations of five.

The children will also:

- Practice skip counting
- Review the penny, nickel, and dime
- Sort representations of numbers
- Count on from numbers other than one

Preparation

DAY 1

Prepare four sets of Number Representation Cards for the numbers 1 through 5 by combining number, dice, tally marks, domino, and ten-frame cards.

DAY 2

Prepare an individual whiteboard to resemble a ten-frame. You will also need 5 small magnets. The children will use their math mats and math bags containing connect cubes and ten-frames.

DAY 3

You will need a domino for each child with different representations of the numbers 1-10. You will also use four sets of Representation Cards for the numbers 6 through 10.

DAY 4

The children will check the plastic bags of coins in their math bags to confirm they each contain 10 pennies, 1 nickel, and 1 dime. Have extra coins available to replace missing ones. You will also need an additional nickel for each child.

DAY 5

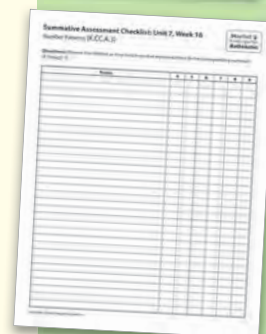
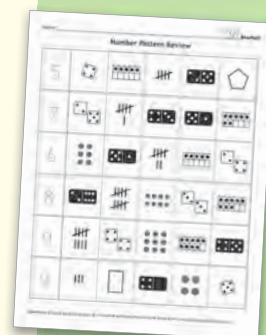
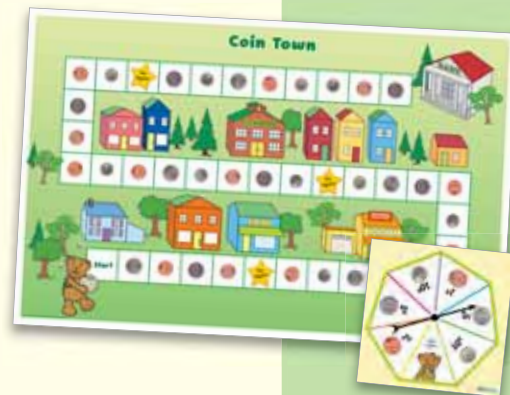
Activity Center 1 — Navigate classroom computers to *Starfall.com*.

Activity Center 2 — The children will use 1 or 2 “Coin Town” game boards, playing pieces, and coin spinners.

Activity Center 3 — The children will use a pocket chart, number, domino, dice, and ten-frame cards for the numbers 1 through 10. If two groups will play simultaneously, each group will need its own set of cards.

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

Summative Assessment — Make a copy of the Number Pattern Review worksheet for each child. Prepare to observe the children as they work in this center and to record notes on your observations on the Summative Assessment Checklist for Unit 7, Week 16.



Summative Assessment
Unit 7 - Week 16

DAY 1

DAY 2

Daily Routines

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

Magic Math Moment

Toss the Dice

Count on from a given number

Math Concepts

Identify rolls of dice
Associate numbers with their representations

Practice counting on from a number other than one
Recognizing five in a ten-frame
Representations of five
Directionality of equations

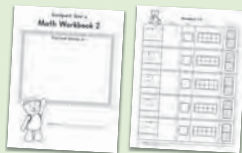
Formative / Summative Assessment

Create a representation chart

Use cubes to create equations

Workbooks & Media

Workbook #2, pages 1 and 2



DAY 3

DAY 4

DAY 5

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

Learning Centers

Match dominoes to Number Cards

Count by ones, fives, and tens

Starfall.com:

- Monthly Calendar
- Money Activity
- Addition & Subtraction: "Addition Practice"

Count the dots on dominoes and match them to Number Cards

Number representations 6 through 10

Write numerals 6 through 10

Skip counting

Review penny, nickel, and dime and their values


"Coin Town"

Number representations 6 through 10

Use coins to match price tags

Number Concentration

Workbook #2, page 3



Teacher's Choice

Summative Assessment: Number Patterns

Number Pattern Review Blackline

Toss the Dice

Materials

- 1 die (large if available)

Gather the children in a circle. Say: **Watch as I toss the die. Say the number on the die as quickly as you know what it is. Remember, the dots on a die are always in the same order. Ready?**

Roll the die several times and the children say the number rolled as quickly as they can. Then pass the die so each child has a turn to “toss the die.”

Note: It is important that the children understand they must say the correct number, not just any number in order to do so quickly.

Counting & Cardinality

A.3 - Write numbers from 0 to 20.

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

Number Representations 1-5

1 Classifying Numbers

Say: **Today we will classify, or sort, Number Cards.**

Indicate a pocket chart. Distribute the Number Cards and Representation Cards to the children. Some children may receive more than one card.

Say: **Let's see if we can make five rows to represent the five different ways to represent each number.**

Ask: **Who has the numeral 1?** The child with the numeral 1 places it on the left side of the top row of the pocket chart.

Continue: **Let's make this a row of all the ways we can show or represent the number 1. Look at your card(s). If you have a way to show or represent 1, bring it to the pocket chart.**

The children do this and show their cards to the class in turn. The class confirms with a thumbs-up, or offers reasons why the cards don't belong.

Ask: **Who has the numeral 2?**

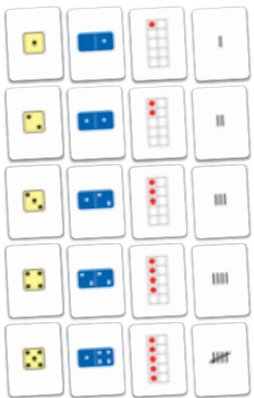
The child places the numeral 2 under the numeral 1. Continue: **Let's make this a row of all the ways we can show or represent the number 2.**

Say: **Look at your card(s). If you have a way to show or represent 2, bring it to the pocket chart.** The children do this and show their cards to the class in turn. The class confirms with a thumbs-up, or offers reasons why the cards don't belong.

Continue until all Number Cards 1-5 are sorted.

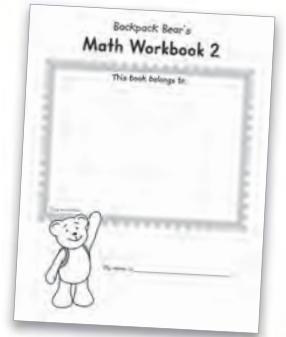
Materials

- Pocket chart
- Number Cards 1-5
- Four sets of Representation Cards for 1-5
- Backpack Bear's Math Workbook #2*, pages 1 and 2
- Pencil, crayons



2 Introduce Backpack Bear's Math Workbook #2

Distribute *Backpack Bear's Math Workbook #2* to each child and instruct the children to turn to page 1. Say: **You will draw a picture of yourself and complete the sentence (My name is ____.) by writing your name.** Observe as the children work to make sure they are following your directions.



Formative Assessment

Make a Representation Chart

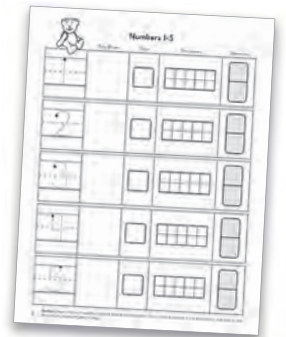
Instruct the children to turn to page 2 of *Backpack Bear's Math Workbook #2*.

Say: **Today you will make your own number representation chart. What strategy can you use for help?** (Volunteers respond.) **Right, you can use the strategy of looking at the pocket chart to help you!**

Continue: **Let's do the first one together.** Give the following directions one at a time, and allow the children time to complete each task before continuing. Observe to see that the children are following your directions. Say:

- Practice printing the numeral 1.
- Place tally marks on the line to represent 1.
- Place the dots in the dice to represent 1.
- Color in the number of squares on the ten-frame to represent 1.
- Place dots on the domino to represent 1.

Allow the children to complete the remainder of the page independently.



Counting On from a Given Number

Materials

-
- Math mats

Essential Question: How can we count on from a given number?

Distribute a math mat to each child. Indicate the number line at the top.

Say: **Look at your math mat. Point to the number line. Who can choose a number from the number line?** (A volunteer responds.) **Let's begin at (the volunteer's number) and count on to 20. You can use your number line to help you. Put your finger on the number and let's count together. Ready?**

Repeat, asking different volunteers to choose numbers. The class counts on from the numbers to 20.

Counting & Cardinality

A.2 - Count forward from a given number.

Operations & Algebraic Thinking

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

A.3 - Decompose numbers less than 11.

Quick Images

Essential Question: How can we use objects and drawings to show how to take a larger group apart and make two smaller numbers?

Materials

- Backpack Bear's Math Big Book, page 22
- Math mats
- Math bags
- Prepared individual whiteboard
- 5 small magnets
- Classroom ten-frame



1 Backpack Bear's Ways to Represent 5

Indicate *Backpack Bear's Math Big Book*, page 22. Say:

Let's see if we can name all of the different ways Backpack Bear represented 5.

The children identify the different ways as you list them on a whiteboard.

2 Recognizing Five

Gather the children on a rug or the floor. Place 5 magnets in the top row of your individual ten-frame whiteboard, being careful not to allow the children to see.

Say: **I will show you an image very quickly, so you have to pay close attention. Give a thumbs-up if you know how many magnets there are in the ten-frame.**

Show the whiteboard for about 3 seconds. Choose volunteers to answer. Repeat their answers without indicating whether or not they are correct.

Continue: **Now, let's look at the whiteboard again. If you need to revise or change your answer, you may.** Choose volunteers to answer, but don't confirm their answers.

Say: **Now I will show you the whiteboard one more time.**

Show the whiteboard, but this time keep it visible. Continue: **How many magnets are there?** (Volunteers respond.) **Who can explain how you knew so quickly there are 5 magnets in the ten-frame?**

Without allowing the children to see, rearrange the magnets on the whiteboard (3 on the top left and 2 on the bottom right).

Say: **Look at the whiteboard now.**

Show the whiteboard for about 3 seconds. Say: **Give a thumbs-up if you know how many magnets there are.**

Choose volunteers to answer. Repeat their answers without indicating whether or not they are correct. Continue: **Now, look at the whiteboard again. If you need to revise or change your answer you may.** Choose volunteers to answer, but don't confirm their answers.

Say: **Now, I'll show you the whiteboard one more time.** (This time keep it visible.) **How many magnets are there?** (Volunteers respond.) **Who can explain how you knew there are 5 magnets in the ten-frame this time?**

Remove the 5 magnets.

Ask: **Who can arrange these 5 magnets in the ten-frame in a different way?** Volunteers create new number combinations.

3 Creating Sets of Five

Display a classroom ten-frame on a whiteboard and distribute a math mat and a math bag to each child. Say: **Remove 5 cubes (or counters) from your math bag.** The children do this.

Indicate the classroom ten-frame. Continue: **Watch as I create a set of 5 on the ten-frame.**

Place 5 magnets in the top row of the ten-frame. Say: **Now use your cubes (or counters) to make your ten-frame look like this one.** The children add 5 cubes to the ten-frames on their math mats.

Say: **There are 5 cubes in the top row of the ten-frame and zero in the bottom row. Who can tell us the equation that matches the ten-frame?**

A volunteer does this.

Write $5+0=5$.

Say: **Let's see how many different ways we can represent 5. Who can represent 5 on the ten-frame a different way?**

- The children arrange their cubes (or counters) a different way on their ten-frames.
- Choose volunteers to explain different ways of representing 5.
- Volunteers add their equations to the whiteboard under the $5+0=5$ equation. (Do not accept duplicates.)

4 Directionality of Equations

Gather the children on a rug or the floor. Choose 5 volunteers to move to the front of the classroom.

Say: **Here are 5 children. How could we divide these 5 children into two groups?** A volunteer responds, and the children divide themselves into two groups as suggested.

Write 5 on the board. Explain: **There are 5 children. We arranged the 5 children into two sets.**

- **How many children are in the first set?**
- **How many in the second set?**
- **So, $5 = 3 + 2$.**

Finish the equation on the whiteboard to match the groups of children.

Write $5=5+0$ on the whiteboard. Say: **Look at this equation. Who can find the same equation written a little differently on our list?** (A volunteer points to $5+0=5$.) **We can say 5 equals 5 plus 0 or 5 plus zero equals 5. They both mean the same thing!**

Say: **Let's try some more.**

Write $5=3+2$ on the whiteboard. Choose a volunteer to find the corresponding equation ($3+2=5$) on the list.

Repeat for the remaining combinations of 5.



Formative Assessment

Creating Equations

The children return to their seats and place their math mats and cubes or counters in front of them.

Say: **I will write an equation on the whiteboard. Use your cubes (or counters) to create the equation on your ten-frame. Ready?**

Write $4+1=5$. Continue with different combinations. Occasionally write the equation as 5 equals.

Match Dominoes to Number Cards

Gather the children in a circle on the floor or a rug. Distribute a domino to each child. Demonstrate how to count the dots on both sides of the domino.

Say: **Let's play a game with dominoes. I will show you a Number Card. First look at the Number Card then look at your domino. If your domino matches the Number Card, stand. Ready?**

Shuffle the Number Cards and show one to the children. The children holding dominoes that match the Number Card stand and explain how they know their dominoes match the Number Card.

Repeat for all of the Number Cards.



Materials

- A domino for each child (with different representations of 1-10)
- Number Cards 1-10

Counting & Cardinality

A.3 - Write numbers from 0 to 20.

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

Number Representations 6-10

1 Classifying Numbers 6-10

Say: **Today we will classify, or sort, Representation Cards for the numbers 6 through 10.**

Display a pocket chart and distribute four sets of Representation Cards to the children.

Say: **We will make five rows for the five different ways to represent each number.**

Ask: **Who has the numeral 6?** The child with the numeral 6 brings it to the pocket chart.

Explain: **This row will be for all the ways we can show or represent the number 6.** The child places the numeral 6 in the top left pocket.

Say: **Look at your cards. If you have a way to show or represent 6, bring it to the pocket chart.** The children do this and the class confirms with a thumbs-up.

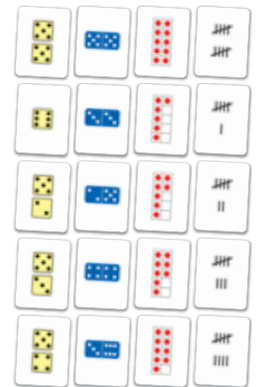
Ask: **Who has the numeral 7?** (The child places the numeral 7 under the numeral 6.) **This row will be for all the ways we can show or represent the number 7.**

Say: **Look at your cards. If you have a way to show or represent 7, bring it to the pocket chart.** The children do this and the class confirms with a thumbs-up.

Continue until all of the 6 through 10 Representation Cards have been sorted.

Materials

- Pocket chart
- Number Cards 6-10
- 4 Sets of Representation Cards for 6-10
- Backpack Bear's Math Workbook #2, page 3
- Pencils, crayons, scissors, glue
- Optional:** Math mats



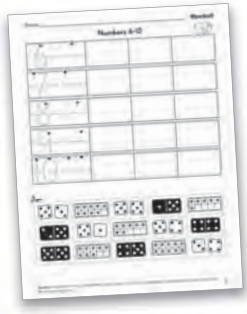
2 Writing Numerals 6-10

Distribute *Backpack Bear's Math Workbook #2*. Instruct the children to turn to page 3.

Say: **Today you will create your own number representation chart for the numbers 6, 7, 8, 9, and 10. What strategy can you use to help you?** (Volunteers respond.) **Right, you can use the strategy of looking at the pocket chart to help you!**

Say: **Let's practice writing the numbers first.**

The children trace the number 6 then write their own 6 on the handwriting line. They complete the tracing of numerals 6, 7, 8, 9, and 10 together with your direction.



Formative Assessment

Match Numbers

The children cut apart the boxes at the bottom of the page and glue them in the correct rows to match the numbers.

Note: The children may use the blank side of their math mats as a way to keep their materials, especially cut papers, organized and separate from those of their classmates.

Counting by Ones, Fives, and Tens

Say: **Let's count together to 30.** Use a pointer to indicate the numbers on the Number Line as you count.

Continue: **We just counted to thirty by ones. Raise your hand if you can think of another way to count to 30.** Volunteers respond.

Count together with the children to 30 by fives and then by tens. If children don't suggest counting by fives and tens, Backpack Bear whispers these options to you.

Ask: **Which way of counting was faster?** Right, tens!

Materials

- Backpack Bear

Review Money (Penny, Nickel, Dime)

1 Checking Money in Math Bags

Distribute a math bag to each child.

Say: **Today we will check our math bags to see if we each have all of our coins. Open your math bag and remove the plastic bag of money.** The children do this.

Continue: **Now, sort the coins so all of the pennies are together. Separate them from the nickel and the dime. While I check your coins, count the pennies so you can tell me how many you have.**

The children should each have 10 pennies, 1 nickel, and 1 dime. Replace any coins missing from the children's math bags.

2 Review the Penny, Nickel, and Dime

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

- **What is the name of this coin?**
- **How do you know this is a penny?**

Say: **Let's read the penny rhyme together.** Do this.

Say: **Find a penny from your math bag and hold it up for everyone to see.** (The children do this.) **Who can tell us how much is a penny worth?** **Right, a penny is worth one cent.**

Materials

- Math bags
- Container of extra pennies, nickels, and dimes (to replace missing coins in math bags)
- Backpack Bear's Math Big Book*, pages 13, 14, and 15
- Picture Cards with Price Tags
- 1 nickel for each child

Counting & Cardinality

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

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

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

Money

M.1 - Identify the value of coins.





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

- **What is the name of this coin?**
- **How do you know this is a nickel?**

Say: **Let's read the nickel rhyme together.** Do this.

Say: **Find a nickel from your math bag and hold it up for everyone to see. How much is a nickel worth? Right, a nickel is worth five cents, or five pennies. Which is worth more, a penny or a nickel? Yes, a nickel is worth more.**

Indicate *Backpack Bear's Math Big Book*, page 15. Ask:

- **What is the name of this coin?**
- **How do you know this is a dime?**

Say: **Let's read the dime rhyme together.** Do this.

Say: **Find a dime from your math bag and hold it up for everyone to see. How much is a dime worth? Right, a dime is worth ten cents, or ten pennies. Here's a really hard question. Which is worth more, a penny, a nickel, or a dime? Yes, a dime is worth more than a penny or a nickel. Good job!**

Continue: **Now put all of your coins back into the plastic bag.**

3 Coin Values

Distribute math mats and explain to the children that they will use the blank side. Say:

- **Remove 5 pennies and place them on your math mat. Let's count them together 1, 2, 3, 4, 5. Is there a coin that is worth the same as 5 pennies? Right, a nickel is worth 5 cents, the same as 5 pennies.**
- **Put your 5 pennies away and place a nickel on your math mat. How much money do you have now? Right, you still have 5 cents because a nickel is worth 5 cents just like 5 pennies.**

Distribute another nickel to each child. Say:

- **Add the second nickel to your math mat. Each nickel is worth 5 cents and now you have two. How much money do you have now? Right, you have 10 cents. How did you count how much money you have? Since each nickel is worth 5 cents, you could count by fives to get the answer, 5, 10.**
- **What coin is worth the same as 2 nickels or 10 cents? Right, a dime! Put your two nickels away and trade them for a dime.**
- **Here's a tricky question, are you ready? What if you need 11 cents? What coin could you add to your dime? Right, a penny!**

Children put their coins back into their plastic bags.



Formative Assessment

Picture Cards with Price Tags

Say: **We're going shopping!** Place the *pencil* Picture Card in a pocket chart face up and the other Picture Cards face down.

Ask: **How much does this pencil cost?** (Volunteers respond.) **Take the coins you would need to buy the pencil and place them on your math mat.**

Confirm that each child placed 4 pennies on his or her math mat.

The children remove the coins from their math mats and continue with the remaining Picture Cards.

- A volunteer reveals a Picture Card and tells the cost.
- Volunteers tell which coins they used and explain why.

Take time after each Picture Card to explore possible options to pay for the item. For example, the apple costs 6 cents so there are two ways to pay for it, all pennies or a nickel and 1 penny.



1 Computer

The children explore:

- Monthly calendar
- Calendar
- Money Activity
- Add & Subtract: Addition Practice

Materials

- Computers navigated to *Starfall.com*

Counting & Cardinality

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

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

Money

M.1 - Identify the value of coins.

2 Coin Town

The children place their playing pieces on the start. For each turn, the child spins and then moves his or her playing piece to the next coin equal to the amount shown on the spinner.

If a child lands on a Go Again star, he or she takes another turn. The first child to get to the bank wins, or play can continue until all children reach the bank.

Materials

- "Coin Town" Game boards (1 or 2)
- Playing pieces
- Coin spinner



3 Number Concentration

The children mix together the different sets of cards and arrange them face down in a pocket chart. They take turns to reveal two of the cards.

The goal is to find two cards that represent the same number. If a match is made the child places the cards on a table or on the floor and takes another turn.

If a match is not made, the child turns the cards face down and play continues with the next player.

Note: You may vary the game by forming two groups.

Materials

- Pocket chart
- Number Representation Cards: 1-10

Note: If two groups play simultaneously, they will each need a set of Number Representation Cards



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: Number Patterns

The children write their names at the top of the worksheets. They trace the numeral at the beginning of the first row and then find its representations in the same row and color or circle them.

Observe which children are able to recognize the patterns without counting and which children still need to count.

Record your observations on the Unit 7 Week 16 Summative Assessment Checklist.

Materials

- Number Pattern Review worksheet for each child
- Pencils, crayons
- Unit 7, Week 16 Summative Assessment Checklist

