BIL Counter Evidence to Ed Reports Alignment, Grade K

## GATEWAY TWO: Rigor and Mathematical Practices

Rigor and Balance

Indicator 2c -- Attention to Applications: Materials are designed so that teachers and students spend sufficient time working with engaging applications of the mathematics, without losing focus on the major work of each grade

Ed Reports Review	BIL Counter Evidence
Indicator 2c -- The instructional materials for Big Ideas Math: Modeling in Real Life Kindergarten partially meet expectations that the materials are designed so that teachers and students spend sufficient time working with engaging applications of the mathematics. The Think and Grow: Modeling Real Life section in each lesson "brings problem solving into the classroom." Standard K.OA.2, Solve addition and subtraction word problems, and add and subtract within 10, is addressed in Chapters 6 and 7. Students engage with routine application problems, including add to/take from, as well as put together/take apart problems. There are some examples of non-routine problems found in Chapter Performance Tasks.	Students have abundant opportunity to engage in routine and non-routine application problems throughout the grade level in the Think and Grow: Modeling Real Life examples, Practice exercises, and Performance Tasks. For example: Think and Grow: Modeling Real Life • 1.5, page 30 • 3.4, page 118 • 7.4, page 346 • 10.6, page 532 • ***13.2, page 650*** Practice • 2.4 #3, page 82 • 5.5 #4, page 242 • 9.5 #3, page 484 • ***13.4 #7, page 664*** Performance Task • Chapter 1 #1-3, page 51 • Chapter 6 #1-3, page 317 • Chapter 9 #1, page 491 • Chapter 12 #1, page 633 • ***Chapter 13 #2-3, page 683***

Mathematical Practice - Content Connections

Indicator 2e -- The Standards for Mathematical Practice are identified and used to enrich mathematics content within and throughout each applicable grade.

Ed Reports Review	BIL Counter Evidence
Indicator 2e -- The instructional materials reviewed for Big Ideas: Modeling in Real Life Kindergarten partially meet expectations that the Standards for Mathematical Practice are identified and used to enrich mathematics content within and throughout the grade-level. There are instances where the MPs are misidentified or do not enrich the mathematical content. • MP2 is over-identified throughout the materials. MP2 is identified as a question for students to tell, "How do you know" or "What do you notice?" about the problem. (See Chapter 4, Lesson 2 and Chapter 5, Lesson 5). Chapter 2, Lesson 3, identifies MP2 as students draw lines through groups that are less than other groups. "Say, 'If three is more than one, then one is less than three. Is this correct? How do you know?" • MP5 is under-identified in the materials with only two lessons marked with this standard, Chapter 2, Lesson 4 and Chapter 10, Lesson 3. • MP8 is under-identified as students are beginning to generalize addition and subtraction as 'add to' and 'take from'.	Students must consistently use reasoning (MP2) to develop deep conceptual understanding and procedural fluency of all topics throughout the grade. Questions such as "How do you know?" and "What do you notice?" encourage students to use reasoning to express their thinking.

Indicator 2f -- Materials carefully attend to the full meaning of each practice standard.

Ed Reports Review	BIL Counter Evidence
Indicator 2f -- The instructional materials do not present opportunities for students to engage in MP4: Model with mathematics. The instructional materials present few opportunities for students to model with mathematics (MP4). Throughout the materials, models are provided for students.	Modeling with mathematics is covered throughout our program. In every lesson, students actively participate in the Think and Grow: Modeling Real Life example. In addition, every Practice set provides opportunities for students to model with mathematics. For example: Think and Grow: Modeling Real Life Practice • 4.3, page 186 • 4.3 #3, page 188 • 5.3, page 228 • 5.3 #4, page 230 • ***6.4, page 290*** • 6.4 #4, page 292 • 7.3, page 340 • ***7.3 #4, page 342*** • 10.3, page 514 • 10.3 #3, page 516 The Teaching Edition also encourages teachers to engage students in modeling with mathematics. For example: • 2.4, page 77 • 6.5, page T-296 • ***8.4, page T-400*** • 13.3, page T-656
Indicator 2f -- The instructional materials do not present opportunities for students to engage in MP5: Use appropriate tools strategically. The instructional materials present few opportunities for students to choose their own tool, therefore, the full meaning of MP5 is not being attended to. MP5 is not found in Chapters 1, 3, 4, 5, 6, 8, and 9.	Students have the opportunity to choose tools strategically. The Teaching Edition often indicates where students have a choice of tools. For example: • 4.2, page T-180 • 4.3 Emerging, page T-185 • 6.5 Dig In (Circle Time), page T-293 • 8.1, page T-380 • ***13.2 Exercises 1 and 2, page T-649*** • 13.6 Supporting Learners, page T-672 In the Dynamic Student Edition, students have access to the following math tools at all times. • Balance scale • Flash cards • Four function calculator • Fraction models • Geoboard • Linking cubes • Money • Number frames • Number line • Pattern blocks • Place value • Rekenrek
Indicator 2f -- The instructional materials do not present opportunities for students to engage in MP7: Look for and make use of structure. MP7 is often presented in the instructional material with guidance telling students how to look for structure, thus limiting their opportunities to identify and use structures.	The Teaching Edition provides teachers with prompts that help students identify patterns and structure on their own. Teachers are also provided with insights as to what students may say and how to lead students to specific conclusions. For example: • 1.6, page T-36 • 2.4, page T-80 • 3.7, page T-134 • 4.3, page T-186 • 5.1, page T-216 • 6.5 Explore and Grow, page 293 • ***7.4 Explore and Grow, page 343*** • 7.7, page T-361 • 8.4, page T-398
Indicator 2f -- The instructional materials do not present opportunities for students to engage in MP8: Look for and express regularity in repeated reasoning. MP8 is identified in Chapters 5, 6, and 7, however, the materials present few opportunities for students to engage in repeated reasoning.	Students have an opportunity to express regularity in repeated reasoning throughout our program. The Teaching Edition often includes prompts to engage students in repeated reasoning. For example: • 2.2 Dig-In (Circle Time), page T-65 • 4.3, page T-184 • 6.5, page T-293 • 7.4, page T-343 • ***8.11 Preparing to Teach, page T-439***

Indicator 2g.i -- Materials prompt students to construct viable arguments and analyze the arguments of others concerning key grade-level mathematics detailed in the content standards.	
Ed Reports Review	**BIL Counter Evidence**
Indicator 2g.i -- The instructional materials reviewed for Big Ideas: Modeling for Real Life Kindergarten partially meet expectations that the instructional materials prompt students to construct viable arguments and analyze the arguments of others concerning key grade-level mathematics. In Kindergarten, students engage in MP3 when directions ask them to make comparisons, or tell why they make a decision. The instructional materials do not present opportunities in Kindergarten for students to analyze the thinking of others.	At this grade level, students analyze the thinking of others by discussing why they agree or disagree with a partner's explanation or whether another student's explanation makes sense. These discussions are prompted throughout the Teaching Edition and are often indicated with an MP3 heading. For example: • 1.8, page T-48 • 4.5, page T-198 • ***6.4, page T-288*** • 6.6, page T-299 • 6.8, page T-311 • 7.5, page T-349 • 10.1, page T-502 • 11.2, page T-553 • 11.3, page T-560

Indicator 2g.ii -- Materials assist teachers in engaging students in constructing viable arguments and analyzing the arguments of others concerning key grade-level mathematics detailed in the content standards.	
Ed Reports Review	**BIL Counter Evidence**
Indicator 2g.ii -- The instructional materials reviewed for Big Ideas: Modeling for Real Life Kindergarten partially meet expectations that the instructional materials assist teachers in engaging students to construct viable arguments and analyze the arguments of others concerning key grade-level mathematics. There are occasions in Laurie's Notes where the materials do assist teachers to engage students to construct and/or analyze an argument. There are occasions where the materials do not provide guidance for teachers to engage students in MP3. Not all explanations require students to construct an argument or analyze the arguments of others.	As stated in the Ed reports Math Grades K-8 Evidence Guides, "Every instance of an MP being marked does not necessarily have to encompass the full meaning of an MP, but taken together there should be evidence that the materials carefully attend to the full meaning of each practice standard." The Teaching Edition contains many instances of probing questions the teacher can ask to engage students in constructing arguments and analyzing the arguments of others. These are throughout and are often indicated with either an MP3 inline head or a red "?" icon. For example: MP3 Inline Head • 6.4, page T-290 • 9.2, page T-464 • 12.1, page T-600 • ***13.2, page T-650*** • 13.7, page 677 Red "?" icon • 2.1, page 59 • 5.2, page T-219 • ***6.8, page T-312*** • 9.3, page T-467 • 13.3, page 653

Think and Grow: Modeling Real Life
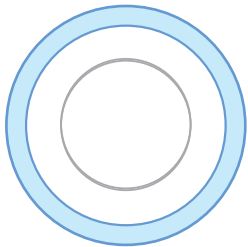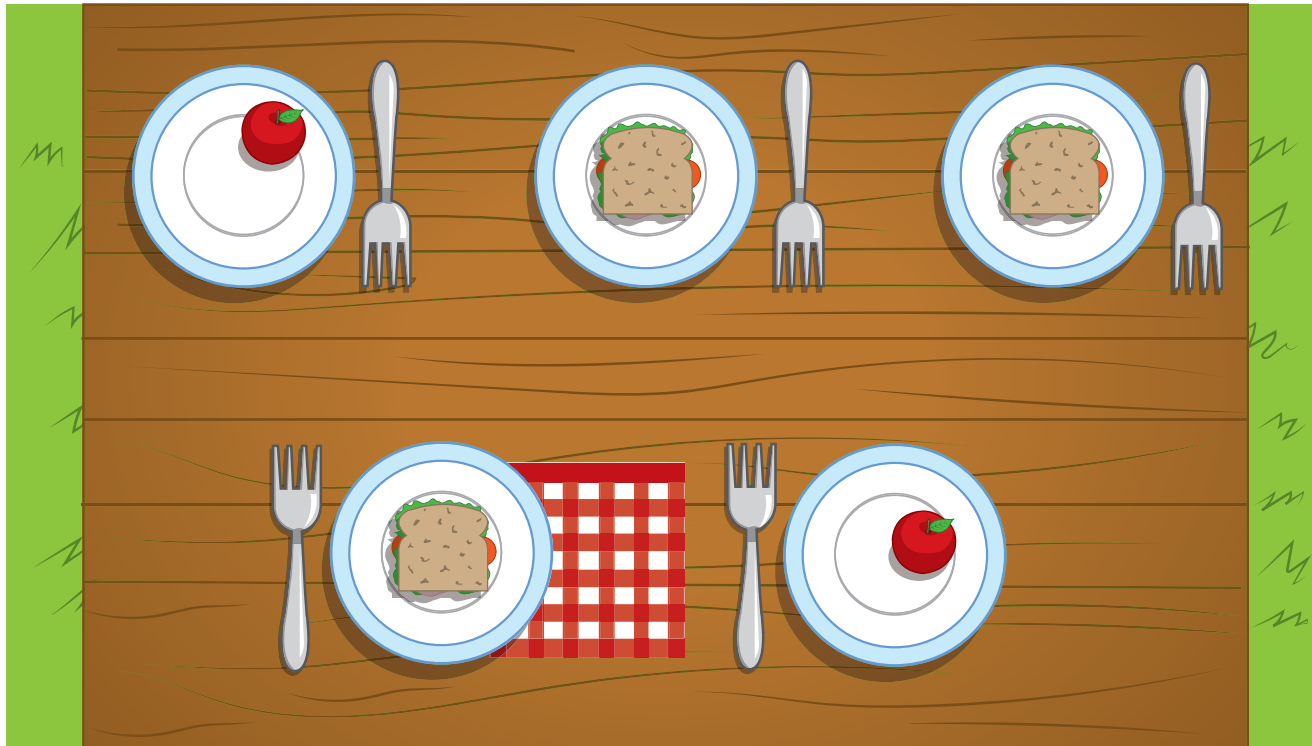
Directions: Count the objects in the picture. Color the boxes to show how many.

Think and Grow: Modeling Real Life

Weather Chart

Monday	Tuesday	Wednesday	Thursday	Friday
☀️	☀️	⛅	☁️	⛅
⛅	☁️	☀️	🌧️	☀️
☀️	⛅	⛅	☁️	☁️
☁️	☀️	☀️	⛅	🌧️

Directions: Count the objects in the picture. Say the number. Write the number.

Think and Grow: Modeling Real Life
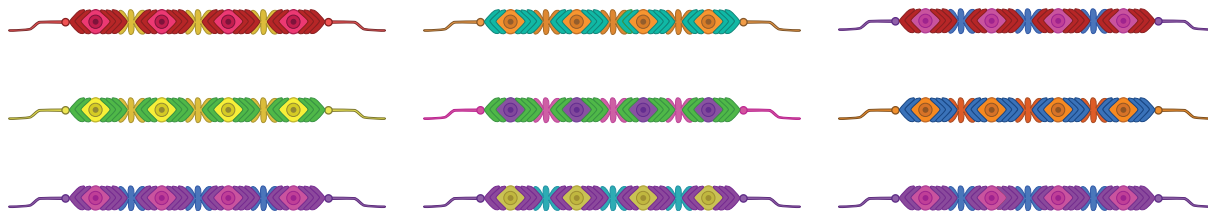
Directions:

- You make 9 bracelets. You give all of them away. Cross out the bracelets you give away. Then write a subtraction sentence to tell how many bracelets you have left.
- Your friend makes 6 bracelets. She does not give away any of her bracelets. Draw and color your friend's bracelets. Then write a subtraction sentence to tell how many bracelets she has left.
- Your friend gives you a bracelet. Write a subtraction sentence to tell how many bracelets she has left now.

346   three hundred forty-six

Think and Grow: Modeling Real Life

5   7   20   25   50

Directions: A grocery store sells milk cartons individually and in boxes of 10.

- Count the milk cartons. Circle the number that tells how many.
- You need 75 milk cartons in all. Draw to show how many more boxes of milk cartons you need.

532   five hundred thirty-two

Think and Grow: Modeling Real Life
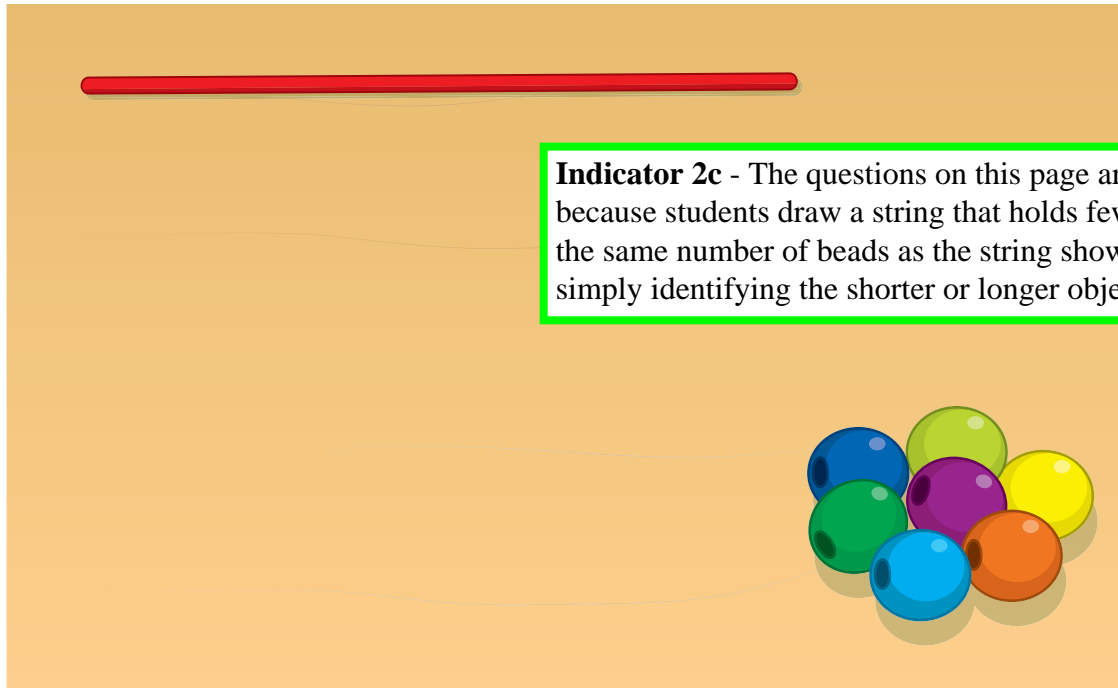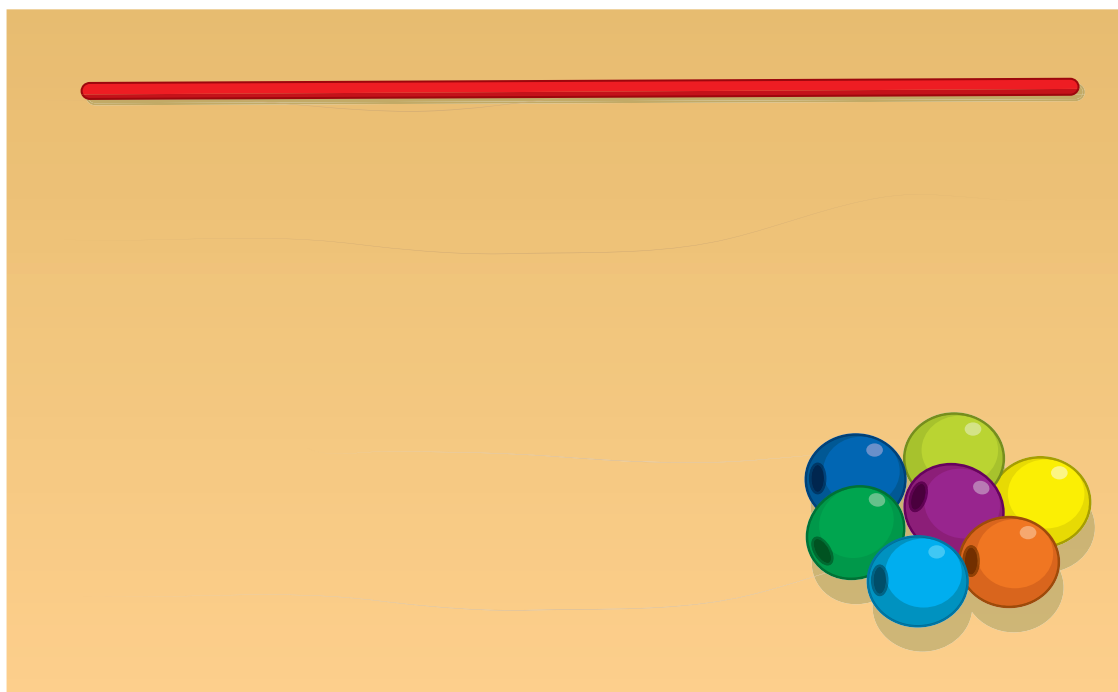
Indicator 2c - The questions on this page are non-routine because students draw a string that holds fewer beads and the same number of beads as the string shown instead of simply identifying the shorter or longer object.

Directions:
- Draw a string that holds fewer beads than the string shown. Tell how you know.
- Draw a string that holds the same number of beads as the string shown. Tell how you know.

650   six hundred fifty

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2

3

Directions: 2 Count the objects in each group. Write each number. Circle the number that is greater than the other number. **3** Draw pom-poms on the floor in the picture so that the number of pom-poms is less than the number of megaphones. Write the number of each object. Draw a line through the number that is less than the other number.

82   eighty-two

2
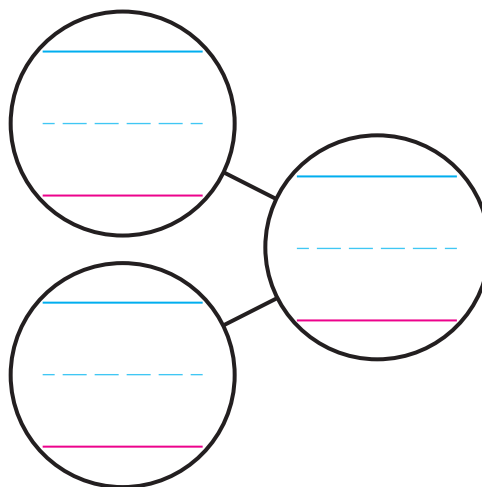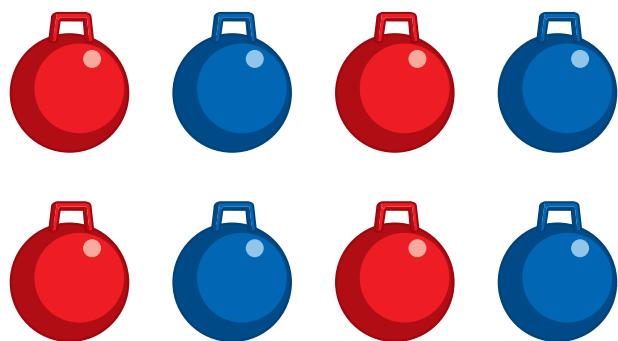
3
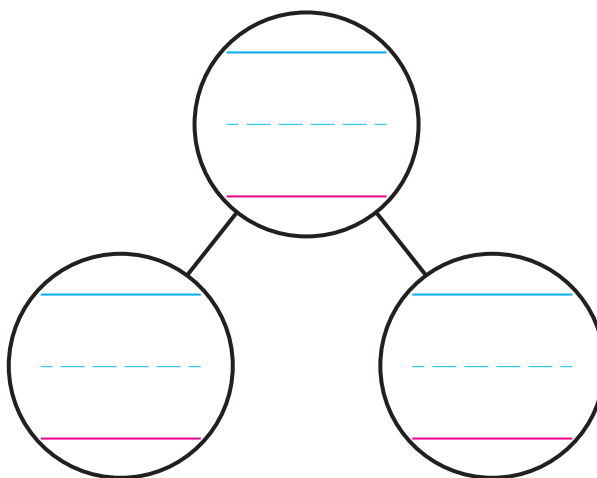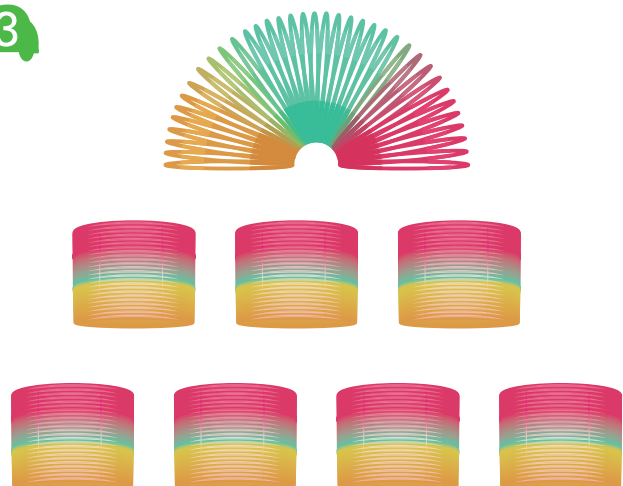
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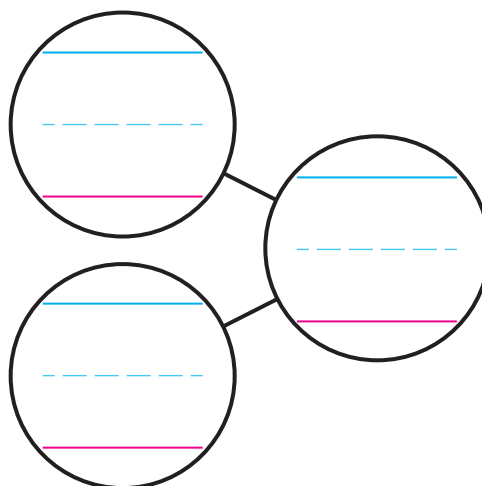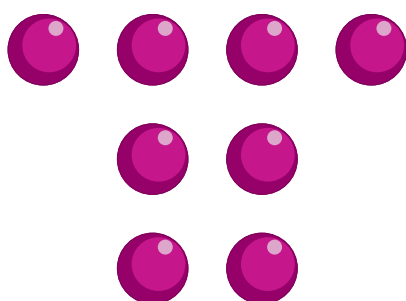
Directions: **2** and **3** Name the parts and the whole for the group. Then complete the number bond. **4** Put the marbles into 2 equal groups. Circle the groups. Then complete the number bond to match your picture.

242　　two hundred forty-two

2

3
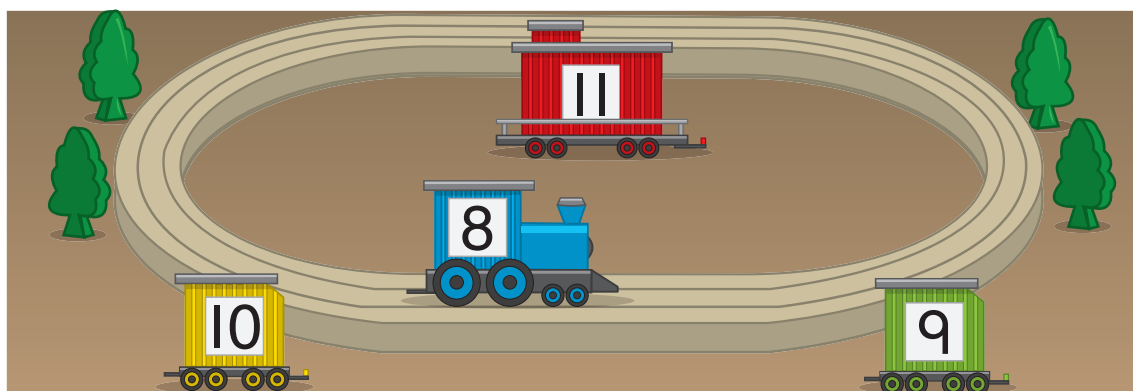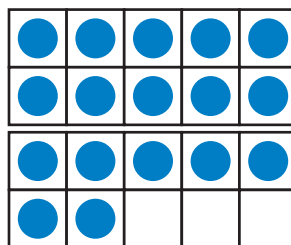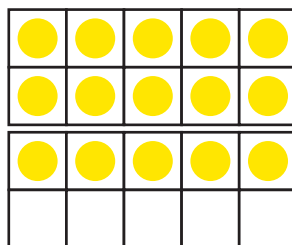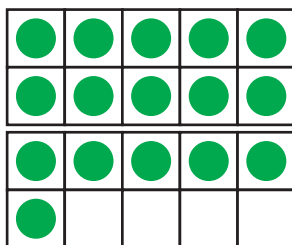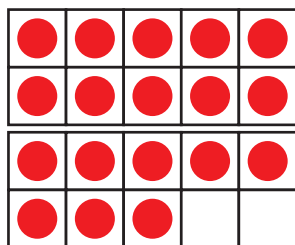
Directions: **2** Count the dots in each set of ten frames. Say each number. Write each number. Then write the numbers in order. **3** Line up the train cars by writing the numbers in order. Circle the train car that is first. Underline the train car that is last.

484   four hundred eighty-four

⭐ 5

🍀 6
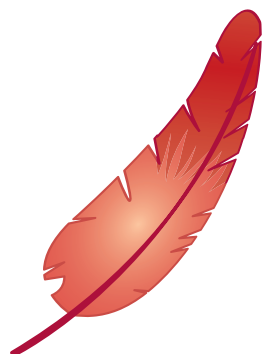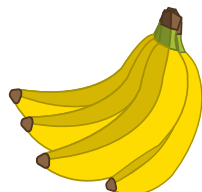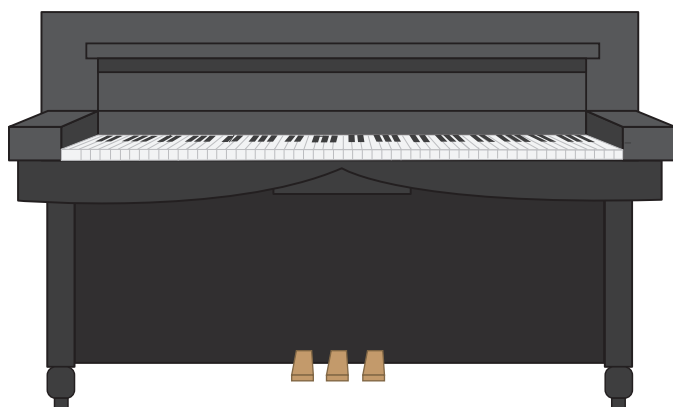
Indicator 2c - #7 is non-routine because students must apply their knowledge of weight to determine which object they can carry and why.

7

Directions: ⭐ and 🍀 Are the objects the same weight? Circle the thumbs up for *yes* or the thumbs down for *no*. 7 Circle the object you can carry. Tell why you can carry the object.

Name _____
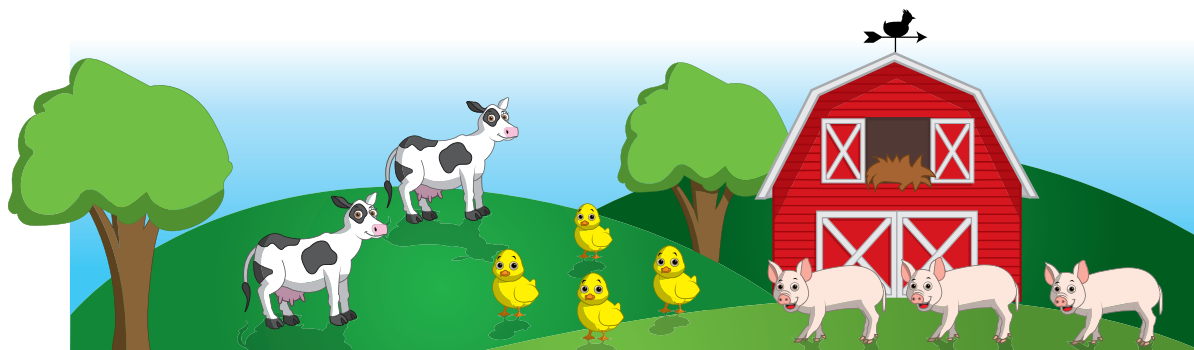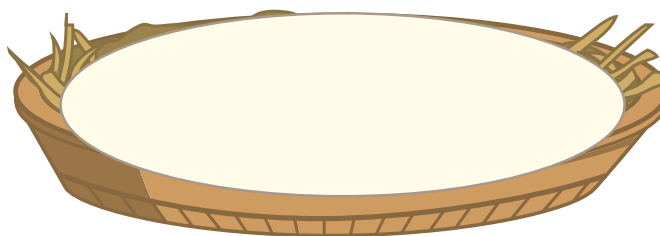
Performance Task 1

Directions: ① Count the objects in the picture. Say the number. Write the number. Write the numbers in order. Start with the number 0. ② A chicken lays five eggs. Draw to show how many eggs. ③ Show how many eggs in another way.

Chapter 1

fifty-one 51

Name _____

Performance Task 6
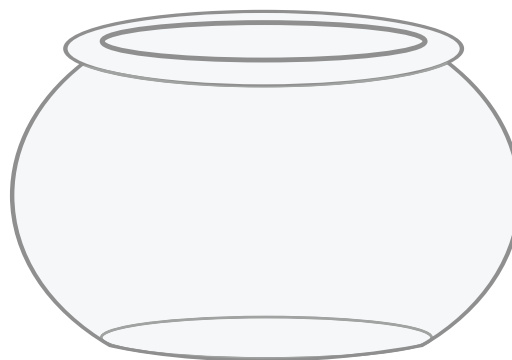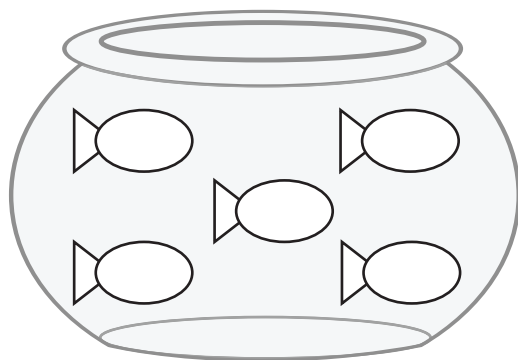
1

2

3

Directions: 1 You buy more red fish than blue fish at a pet store. Color to show the fish that you buy. Then write an addition sentence to match your picture. 2 Your friend buys 5 fish. Draw and color your friend's fish to show fewer red fish than blue fish. Then write an addition sentence to match your picture. 3 You put food pellets into your fishbowl to feed *your* fish. The number of food pellets is equal to the number of fish. Draw the food pellets. Then write an addition sentence to tell how many objects are in your fishbowl in all.

Chapter 6 three hundred seventeen 317

Name _____

Performance Task 9
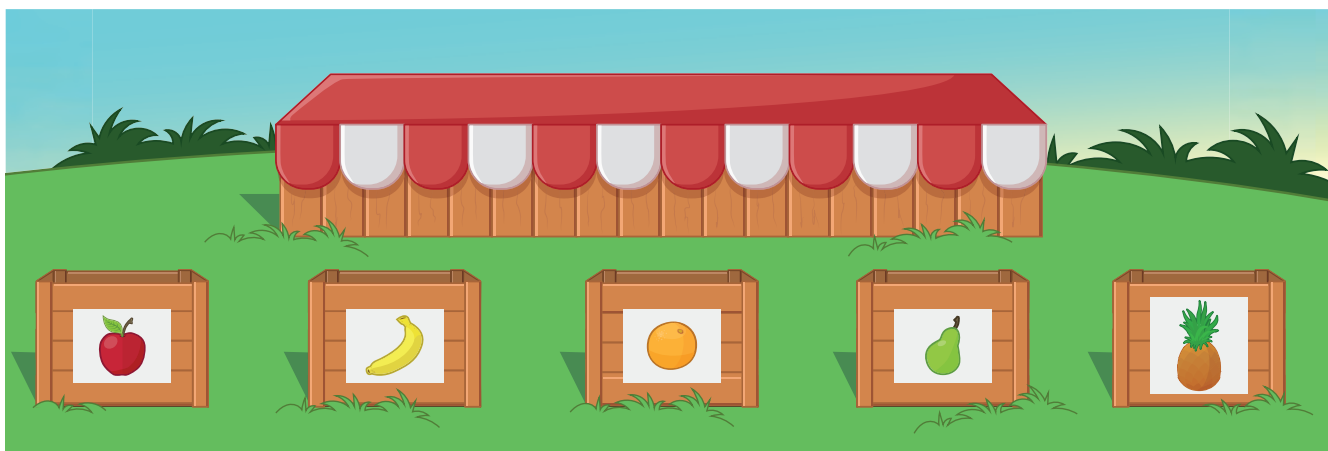
Directions: 🍏 Use the clues to find the number of fruit in each crate. Write each number.

- The number of apples is more than 16 but less than 18.
- The number of bananas is more than 15 but less than 17.
- The number of oranges is more than 18 but less than 20.
- The number of pears is 1 more than the number of oranges.
- The number of pineapples is 1 less than the number of oranges.
- Write the numbers in order.

Chapter 9   four hundred ninety-one   **491**

Name _____

Performance Task 12

Directions: 🍏 You pick up trash in the park. Draw lines to match each item with its correct recycling bin.

- The object that rolls but does not stack that is *in front of* the lamppost goes in the yellow bin.
- The object *below* the bench that does not roll goes in the blue bin.
- The object that has 1 flat surface that is *behind* an object that looks like a cylinder goes in the green bin.
- The object that stacks, slides, and rolls that is *above* an object that looks like a cube goes in the orange bin.
- The object *in front of* the tree that rolls and has 2 flat surfaces goes in the green bin.
- The object *next to* the tree that stacks and slides and has only flat surfaces goes in the green bin.
- The object that has a curved surface that does not stack that is *beside* the tree goes in the blue bin.
- The object that slides and rolls that is *next to* an object that has 6 flat surfaces goes in the blue bin.

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Chapter 12

six hundred thirty-three **633**

Name _____

Performance Task 13

1

Indicator 2c - #2-3 are non-routine because students must first apply their knowledge of height and capacity to draw a bucket that is taller and holds more water than Monday's bucket. Then students must use their answers from #1 to determine how much rainwater you collect on Wednesday.

2

Monday — 10, 8, 6, 4, 2
Tuesday — 5, 4, 3, 2, 1

Wednesday

3

_____ _____ _____

_ _ _ _ _ ◯ _ _ _ _ _ ▬▬ _ _ _ _ _
                              ▬▬

_____ _____ _____

Directions: You use one bucket to collect rainwater on Monday and a different bucket to collect rainwater on Tuesday. On Monday, you collect 1 less than 7 fluid ounces of rainwater. On Tuesday, you collect 1 more than 3 fluid ounces of rainwater. **1** Circle the number on each bucket that shows the amount of rainwater you collect. Then circle the day that you collect more rainwater. **2** Draw a bucket for Wednesday that is taller and holds more water than Monday's bucket. **3** The amount of rainwater you collect on Wednesday is the same as the amount you collect in all on Monday and Tuesday. Write an addition sentence to tell how much rainwater you collect on Wednesday.

Chapter 13

six hundred eighty-three **683**

Think and Grow: Modeling Real Life

Who has more?

You   Friend

Who has less?

You   Friend

Directions:

You have a number of flowers that is greater than 6 and less than 8. Your friend has a number of flowers that is one more than 5. Write and draw how many flowers you each have. Circle the number that is greater than the other number.

You have a number of flowers that is one more than 9. Your friend has a number of flowers that is one less than 10. Write and draw how many flowers you each have. Draw a line through the number that is less than the other number.

186   one hundred eighty-six

2

9

_____

7

👍 👎

3

Who has more?

_____
- - - - - - - - - - -
_____
You

_____
- - - - - - - - - - -
_____
Friend

Directions: **2** Compare the numbers. Are the numbers equal? Circle the thumbs up for *yes* or the thumbs down for *no*. Draw to show how you know. **3** You have a number of marbles that is greater than 5 and less than 7. Your friend has a number of marbles that is one more than 4. Write and draw how many marbles you each have. Circle the number that is greater than the other number.

188   one hundred eighty-eight

Think and Grow: Modeling Real Life
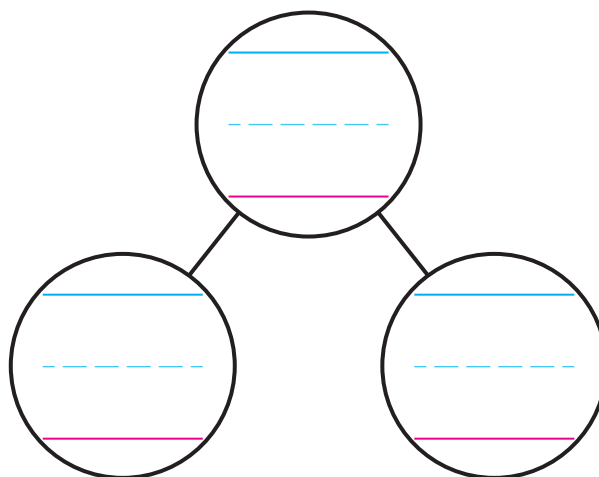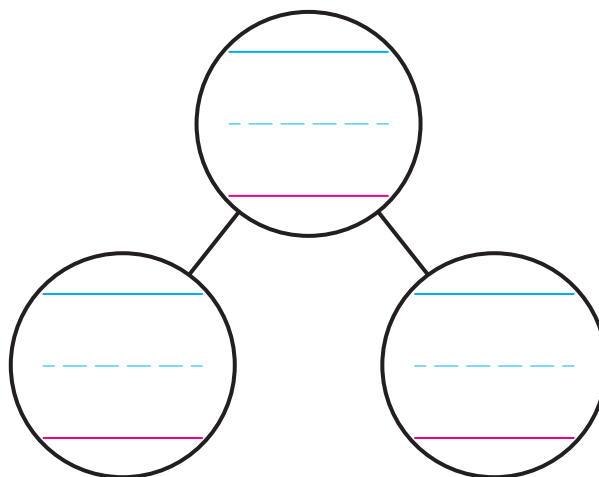
Directions: There are 6 tomatoes at a farm stand. Newton and Descartes buy all of them. Newton buys fewer tomatoes than Descartes.
- Draw tomatoes in the wagons to show how many tomatoes Newton and Descartes could buy. Then complete the number bond to match your picture.
- Draw another way to show how many tomatoes Newton and Descartes could buy. Then complete the number bond to match your picture.

228   two hundred twenty-eight

2

3

4

Farm Stand
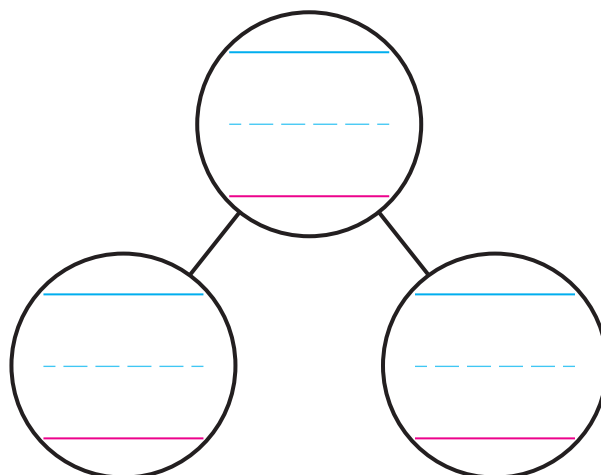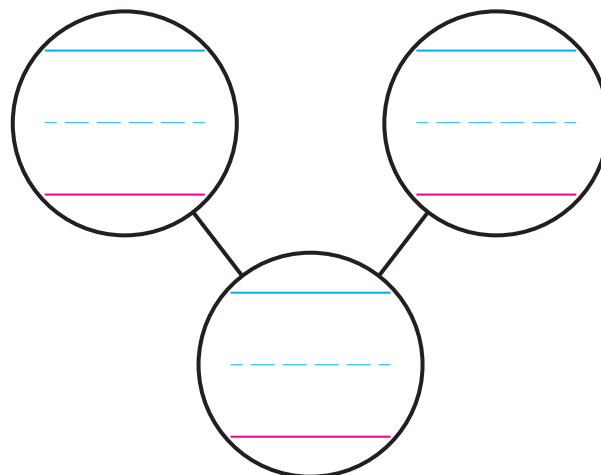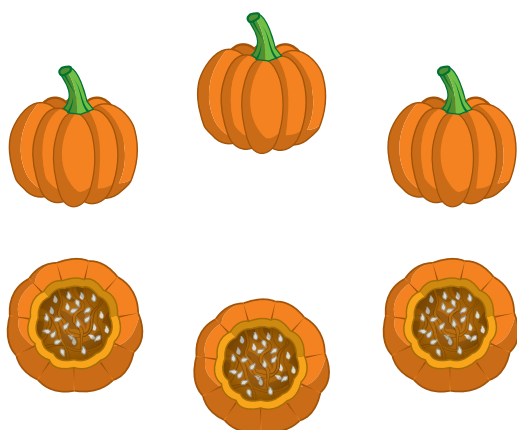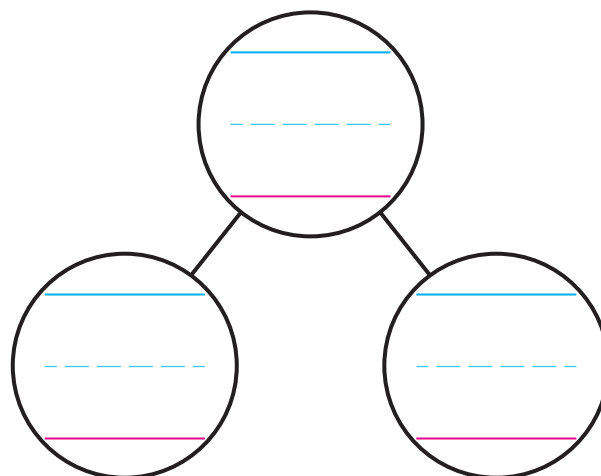
Newton   Descartes

Directions: **2** and **3** Name the parts and the whole for the group. Then complete the number bond. **4** There are 6 tomatoes at a farm stand. Newton and Descartes buy all of them. Newton buys more tomatoes than Descartes. Draw tomatoes in the wagons to show how many tomatoes Newton and Descartes could buy. Then complete the number bond to match your picture.

230   two hundred thirty

Think and Grow: Modeling Real
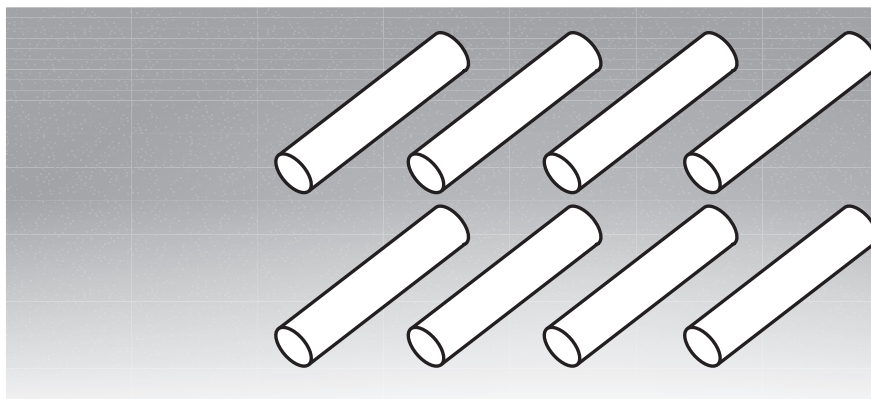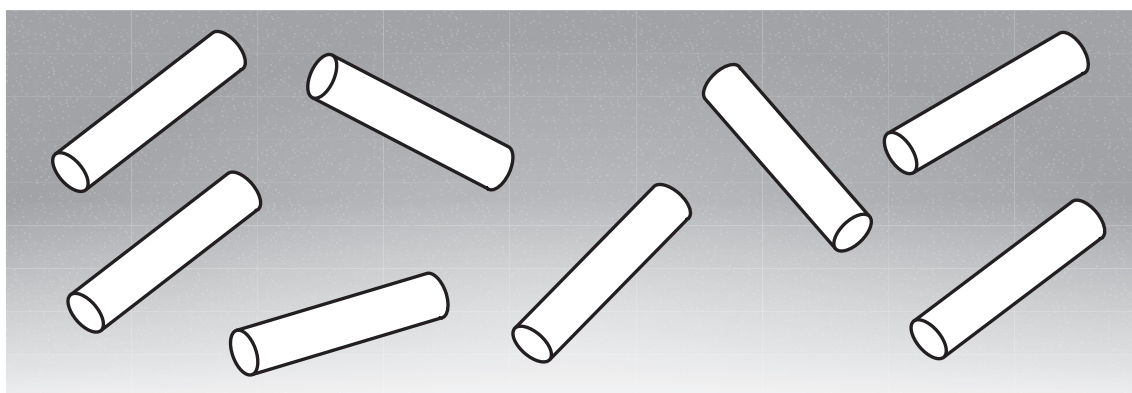
Directions: You have 8 pieces of sidewalk chalk. Some are red and some are blue.

- Color the pieces of chalk to show partner numbers that make 8. Then write an addition sentence to match your picture.
- Color to show another way to make 8. Then write an addition sentence to match your picture.

290   two hundred ninety

3

$$5 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

4

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} = \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

Directions: **3** Use 2 colors to show partner numbers that make the whole. Then complete the addition sentence to match your picture. **4** There are 6 paint spots on a paint tray. Some are purple and some are green. Color the paint spots to show partner numbers that make 6. Then color the paint spots to show another way to make 6. Write addition sentences to match your pictures.

292   two hundred ninety-two

Think and Grow: Modeling Real Life
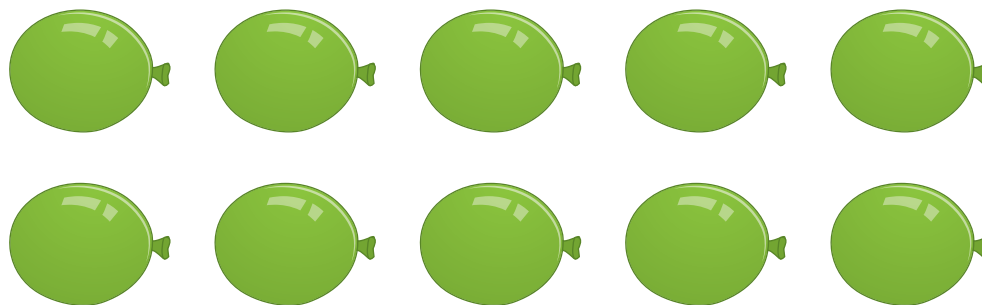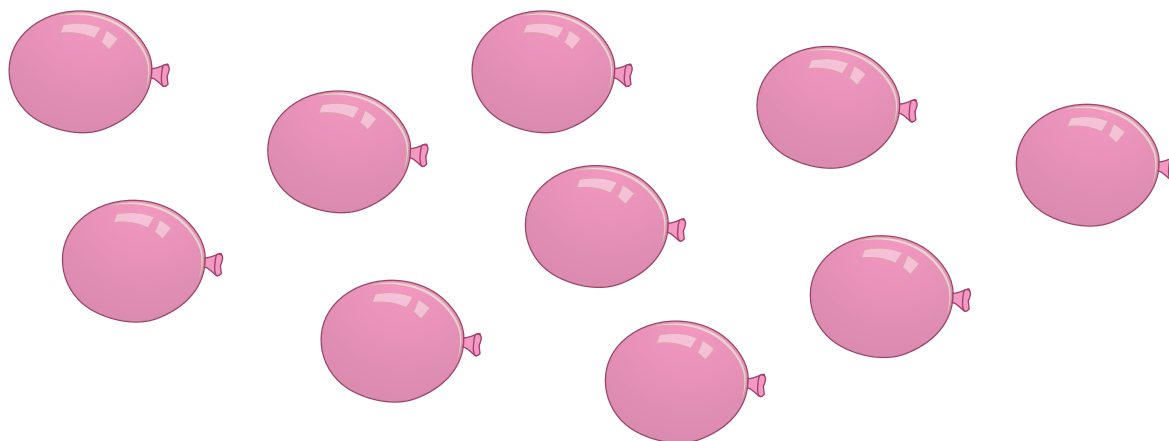
Directions: You have 10 balloons. You want to share some with your friend.

- Put the balloons into 2 groups. Circle the groups. Then cross out the group you give to your friend. Write a subtraction sentence to match your picture. Circle the number that shows how many balloons you have left.

- Show another way you can share the balloons. Then write a subtraction sentence to match your picture. Circle the number that shows how many balloons you have left.

340   three hundred forty

3

Indicator 2f - In #4, students use mathematics to model and solve real-life problems.

MP4 Model with mathematics - Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation.... Mathematically proficient students who can apply what they know... are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

4
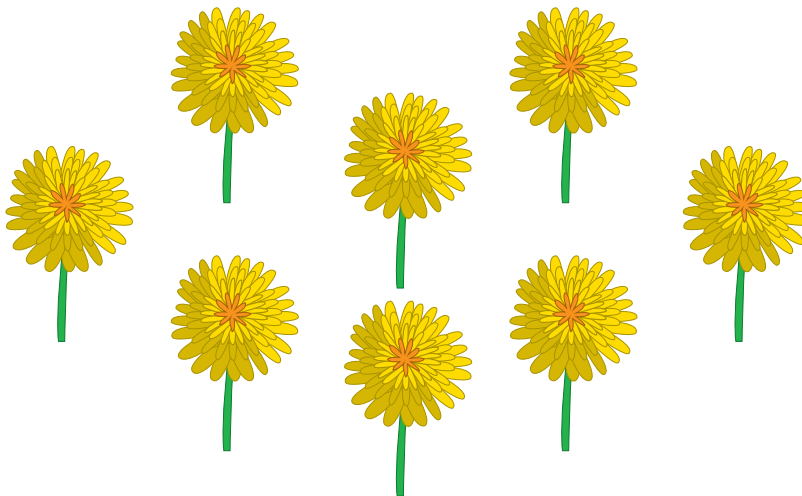
Directions: **3** Take apart the linking cubes. Circle the parts. Write a subtraction sentence by taking one of the parts from the whole. Then write another subtraction sentence by taking the other part from the whole. **4** You pick 8 flowers. You want to give some to your friend. Put the flowers into 2 groups. Circle the groups. Then cross out the group you give to your friend. Write a subtraction sentence to match your picture. Circle the number that shows how many flowers you have left.

342   three hundred forty-two

Think and Grow: Modeling Real Life

| 61 | 62 | 63 | 64 | 65 | 66 | | 68 | 69 | 70 |

| 71 | 72 | 73 | 74 | 75 | 76 | 77 | | 79 | 80 |

| 81 | 82 | 83 | 84 | 85 | | 87 | 88 | 89 | 90 |

| 78 | | 67 | | 86 |

Directions: Your friend, Newton, and Descartes each have 10 prize tickets.
They each lose 1 ticket.

- Circle the owner of each lost ticket.
- The winning ticket number is 1 more than 70. Circle the winning ticket number.
  Who is the winner? Circle the face of the winning ticket holder.

514   five hundred fourteen

2

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78		
	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

| 68, 69, 70 | 79, 80, 81 | 86, 87, 88 |

3

51 52   54 55 56 57 58 59 60

61 62 63 64 65 66 67   69 70

53   68

Directions: **2** Circle the missing numbers. **3** Newton and Descartes both have 10 prize tickets. They both lose 1 ticket. Circle the owner of each lost ticket. The winning ticket number is 1 more than 50. Circle the winning ticket number. Who is the winner? Circle the face of the winning ticket holder.

516   five hundred sixteen

Name _____

Learning Target: Use counting to compare the number of objects in two groups.

Explore and Grow

less

more

Directions: Use counters to show the number of yellow jerseys. Use counters to show the number of red jerseys. Tell which group has more and which group has less.

Chapter 2 | Lesson 4

seventy-seven 77

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Explore and Grow

- **MP5 Use Appropriate Tools Strategically:** Have students cover each yellow jersey with a yellow counter and each red jersey with a red counter. Have students slide the yellow counters to one five frame and the red counters to the other five frame.
- "Tell your partner how many jerseys you have of each color."

?MP4 Model with Mathematics: Ask, "What color jersey do you have more of? What color jersey do you have less of? Tell your neighbor how you knew which color jersey was more or less." Listen for students to mention counting, or that four is more than two.

Laurie's Notes

Think and Grow: Modeling Real Life

This application allows students to show their understanding of adding 0 and adding 1 to a start amount of 7.

- **Preview:** Have students discuss what they see in the picture. "Do you have a piggy bank? What do you keep in a piggy bank?" Perhaps students have other objects that they collect coins in.
- Read, "You have 7 coins that you put in your bank." Students draw the coins and write 7 as the starting number in the addition sentence.
- ❓ "You cannot find any more coins. You have none to add. How do we show that in the addition sentence?" Write 0. "When you add 0 to a number does the amount change?" no
- **Note:** It is helpful to mention a period of time passes and your friend gives you a coin for your bank. "The next day, your friend…"
- "How many coins are in your bank?" Pause while students draw the seven coins and write 7 in the addition sentence. "Your friend gives you a coin for your bank. How do you show one more coin?" Pause while students draw another coin and write 1 in the addition sentence.
- ❓ "You added one coin. When you add 1 to a number does the amount change?" yes "What does it equal when you add one to a number?" It equals the next number. Although this is not precise language, students know the next number as being the next *counting* number.
- ◉ Ask volunteers to share what they learned today about adding 0 and adding 1.

Closure

- Have students hold up four fingers. "Show me $4 + 0$ fingers." Pause. "Show me $4 + 1$ fingers."
- Repeat, using a different number of fingers to start with and add 1 first and then 0.

ELL Support

Explain that a common type of bank for saving coins is a piggy bank. Display examples of coins. Make sure they understand that a penny, nickel and dime are worth different amounts, but all are just one coin. After they have completed the page, have each student use the cards they have already made, and make new ones as needed. They should have cards with 0, 1, 7 and 8 on them. Check for understanding of 6.5 by asking the following questions and having students answer by holding up the appropriate card.

1. How many coins did you draw in the first picture?
2. What number did you write in the first space?
3. What number did you write in the next space?
4. What number did you write in the last space?
5. How many coins did you draw in the second picture?
6. What number did you write in the first space?
7. What number did you write in the next space?
8. What number did you write in the last space?

Laurie's Notes

Think and Grow: Modeling Real Life

This application allows students to show their understanding of drawing a model and counting to 14.

- **Preview:** "What do you think is happening in the picture? Have you seen a large bin of vegetables sold at a market? Talk to your partner about what you see."
- ❓ "What shape can you draw for an cucumber or ear of corn?" Remind students this is not art class. "Draw the vegetables just so someone else would be able to count them."
- Read the directions. Students can draw the vegetables with a pencil or you may choose to have students use crayons or colored pencils to start.

- ❓ **MP4 Model with Mathematics:** Exchange drawings with a partner. "How many cucumbers did your partner draw? Was the amount easy to count? Explain."
  Use this time to display various models. Some are easier to count than others. "When we draw, we are communicating our thoughts. We want others to understand what we are thinking."

  Which model is easier to count?

- ☺ Students have one vegetable drawing a few many they had You want stud know they hav

- ⊙ "You have cou with your lear numbers 13 an

Closure

- Draw or displa count the obje with an object hear each num
- "Use a finger our 1. Now *pu* is our 4."
- Repeat for a group of objects. *around and in, around and stop*.

ELL Support

Allow students time to complete the page. Then have students use their decks of number cards. Check for understanding of Lesson 8.4 by asking: "How many cucumbers did you draw?" Have students hold up the appropriate card to indicate the answer. Repeat the question for corn. You may want to teach them that corn is often referred to as an ear, such as "an ear of corn."

Laurie's Notes

Think and Grow: Modeling Real Life

This application allows students to demonstrate their understanding of using numbers to compare the lengths of two objects. In this application, the objects are roller-coaster trains. Students need to know that each car in the train holds the same number of people, which happens to be 2 in this application.

❓ Preview: "What do you see on this page? Have you ever ridden on a roller coaster or a train at an amusement park? What do you notice about the cars in the trains?" Students should observe that the red and blue cars are the same. Tell students that each holds 2 people.

❓ "Look at the first two roller-coaster trains. Will the two trains hold the same number of people? Tell your partner how you know." Solicit reasoning from different students. They circle the correct thumb signal.

• "On the bottom picture I want you to circle the roller-coaster train that that holds more people. Tell your partner how you know you are correct."

❓ MP4 Model with Mathematics: "There are no numbers on the picture. How do you know which roller-coaster train holds more people?" Listen for an understanding about visually comparing the length of the two trains.

◉ "I want you to think about what you have learned today about using numbers to compare the lengths of two objects. What do the numbers mean and how do they help you compare?"

• **Supporting Learners:** Students can use linking cubes to build each train. Students can write how many cars there are to the left of each roller-coaster train.

• **Extension:** "If the roller-coaster trains are full, how many are on the train?"

Closure

• Hold up two linking-cube trains where the ends of the trains are hidden in your palm. Ask students to compare the trains. Show them the 2 trains! You want them to remember the importance of aligning the ends of the objects being measured.

Laurie's Notes

Think and Grow: Modeling Real Life

This application allows students to show their understanding of *greater than* and *less than* using any strategy they have learned.

? **Preview:** "What do you know about monkeys? What do you think monkeys like to eat? Have you ever climbed a tree or watched someone climb a tree?"

- In each exercise, students will draw bananas. Ask a volunteer to show how they would draw a banana. Assure students that a curved stroke with their crayon or pencil is fine, but an X or a dot would work just as well!

  mean that they will write the number of monkeys and bananas so focus on the comparison. "You want more bananas than monkeys."

- **Think-Pair-Share:** Give students time to think about the different strategies and choose an approach. Before they draw, have them share their thinking with their partners. Some students may count the monkeys, record 7, and draw seven bananas. Some may put a finger on a monkey as they draw a banana. Others may draw a banana and cross out a monkey. In the end, what matters is that they can explain how they know there are more bananas than monkeys.

- **Note:** Some students may draw more than 10 bananas. If students are able to write the number and explain how they know that it is greater, they have grasped the concept.

- **?** **MP2 Reason Abstractly and Quantitatively:** "How do you know that there is a greater number of bananas than monkeys?" Students may mention that every banana does not have a partner, or that the number of bananas comes after the number of monkeys when counting.

- Read the second set of directions. "Now you want less bananas than monkeys." Again, give students time to think versus offering them a strategy.

- ⊙ Ask several students who are showing a thumbs up to explain how they compare two groups by counting. Can students who are not showing a thumbs up ask questions or explain what is not clear?

Closure

- Review counting to 10. Show six linking cubes. Have students count the cubes. Have students use cubes to model a number that is greater than six. Allow students to share their answers. Repeat this process several times having students build numbers greater than, less than, or equal to the number modeled.

ELL Support

Ask students, "How many monkeys are in the first drawing?" Have students count chorally. Then ask, "How many bananas will you draw?" Students should hold up eight or more fingers. Repeat this process for the second drawing. They should count to 9 aloud, and hold up eight or fewer fingers.

Laurie's Notes

Apply and Grow: Practice
MAKING INSTRUCTIONAL DECISIONS

In this lesson, students are showing how they know that their comparisons of numerals are true. Check for students' understanding as you listen to their explanations. Encourage students to use vocabulary terms in their answers by modeling this for them. As you teach, use the terms and numbers in complete sentences. For example, ask, "Are the numbers 9 and 10 equal?" Then model the answer. "No, 9 and 10 are not equal."

Meeting the needs of all learners.

EMERGING students may be successful in recognizing numbers that are equal but have difficulty when two numbers are not equal. They may not recognize all of the numerals, or they may not know the counting sequence well enough to know 7 is less than 8 without reciting the counting sequence 5, 6, 7, 8.

- Provide materials such as linking cubes or two-color counters to compare the numbers.
- Provide ten frames that have the numbers printed on them.
- Have students move counters forward or backward on the number path to help compare the numbers.

PROFICIENT students are able to explain how they are comparing two numbers. They can state the relationship between two numbers using correct comparative language.

- Pair these students with students who need extra support.

Additional Support
- Put two sets of number cards 1–10 in a box or bag. Have students work in pairs. Each student should pull out one number card from the bag. They will flip over their two cards and use a number path to determine the comparison.

Extension: Adding Rigor
- Provide students with 10 blue and 10 red linking cubes. Have students use the linking cubes to make their own comparison problems for their partners to solve. The partners use whiteboards to write the numbers, circle the number that is greater, or cross out the number that is less.

6.5

Learning Target

Explain addition patterns with 0 and 1.

Success Criteria

- Describe a pattern.
- Explain that I have the same number when I add 0.
- Explain that I have the next number when I add 1.

Warm-Up

Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*

- Daily skills
- Vocabulary
- Prerequisite skills

ELL Support

Draw a pattern of repeated shapes and lines on the board. Point and say, "This is a pattern of different shapes." Draw a second pattern. Say, "This is another pattern of shapes." Explain that patterns can be found in many things, such as art, language, and math. Say that we will now look at patterns in addition.

Laurie's Notes

Preparing to Teach

STATE STANDARDS
K.CC.B.4c, K.OA.A.1, K.OA.A.2, K.OA.A.5

Students have written addition sentences where one of the addends (parts) was 0 or 1. Students may have comments that adding 0 is like not adding anything. Student language may not be precise but they are trying to communicate that they notice a pattern. The goal of this lesson is to help students explain clearly what the patterns are when you add 0 or 1 to a quantity. A double domino is used as a model with one side being 0 or 1.

Materials

- floor number path
- crayons

Dig In (Circle Time)

MP5 Use Appropriate Tools Strategically: Use a number path that can be placed on the floor. Laminated pages, each with a counting number, work just fine. You want the number path to be large enough so that it is clear what number the students' position represents. In the figure shown, the student is standing on 4.

- **Example:** Ask a volunteer to stand at the beginning of the number path. "Take four steps." Student moves to 4. "Take 2 more steps." Student moves to 6. Ask students to help you record the steps in an addition sentence. Write $4 + 2 = 6$. Repeat once or twice more.
- Now do a few trials where the number being added is 0. The first time you do this, students will think you made a mistake. "You can't take 0 steps." Let students talk about what *plus zero* means. Record each trial in an addition sentence. $4 + 0 = 4$.
- Finally, do a few trials where the number being added is 1. "Gee, you don't go very far do you?" Listen to students' observations. "It's just the next number."
- **MP8 Look for and Express Regularity in Repeated Reasoning:** Have students talk to their partners about what they noticed whenever they were told to take 0 steps. Listen for the concept of staying on the same space. Ask about taking 1 step—they ended on the very next number.
- Explain that this lesson is about the patterns when you add 0 or 1 to a number.

Laurie's Notes

Think and Grow

Getting Started

- The example at the top is like the Explore and Grow page except the linking cubes are arranged to help students recognize a group of 10 easily. The rectangular array should remind them of a full ten frame.

- **MP5 Use Appropriate Tools Strategically:** Have the ten frame models for each number available or visible. You want students to see a group of ten *ones* and a group of three *ones*.
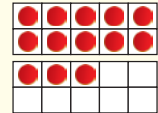
Teaching Notes

- Students are not trying to count a group of objects. We only want them to see that the group is composed of 10 ones and some more ones. Many students may be able to count beyond 10. Again, focus on the group of 10 *ones* and how many more *ones* there are.

- **Model:** "There are a lot of linking cubes. Let us begin by circling a group of ten." Pause as students circle. "Why were the ten counters easy to see?" Listen for, "They were already circled," or more importantly, "They look like 10 in a ten frame." Ask students how many more ones they see. Record three ones.

- ◉ Summarize and connect this example to the learning for today. "We found out this group of linking cubes is 10 ones and 3 ones."

- ❓ **MP2 Reason Abstractly and Quantitatively:** "Can we show all of these linking cubes using one ten frame? Tell your partner what you think." Listen for understanding that there are more than 10 ones. We need another ten frame.

- The directions for second problem are the same. Take note of which buttons students circle as the group of ten ones. Do students see two columns of five to the left? Do students circle two rows of four plus two more?

- **Teaching Tip:** If a document camera is available, different students could display their work and explain their strategy for circling ten.

- ❓ "Did you have a group of ten ones circled?" yes "How many more ones did you have?" 8

- ◉ "How are you doing with your learning today? Can you identify a group of ten ones and then tell how many more ones there are? Talk to your partner about your learning."

- **Supporting Learners:** Give students a group of between 11 and 19 counters and a ten frame. Students fill the ten frame. Can they say, "I have ten ones and ___ more ones."?

ELL Support

Have students work in groups to collaborate and practice verbal language. Expect students' language to vary according to their language level as they discuss the exercises.

Beginner students may state the answers as numbers.
Intermediate students may answer with a phrase, such as, "One group of ten buttons, eight more buttons."
**Advanced** students may answer using a sentence, such as, "We should circle ten buttons and there are eight more buttons."

Laurie's Notes

Apply and Grow: Practice
SCAFFOLDING INSTRUCTION

The exercises here are similar to the Think and Grow page. Preview the page and discuss each of the objects. Although it is not necessary to know what two objects are in order to compare their lengths, the context is helpful.

EMERGING students may confuse length and height and not know how to make a comparison. They may still be thinking they need to track vertically versus horizontally. Have them point and trace with their finger to show how long the spoon is. "How are you moving your finger?"

- **Exercises 1 and 2:** Students can use a straightedge or ruler to move across the pair of objects. Demonstrate that you start at the far left end and move the straightedge across the objects. Which object extends beyond the other?

Meeting the needs of all learners.
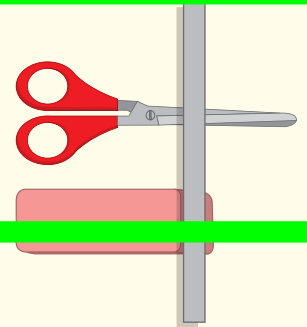
Indicator 2f - The Teaching Edition indicates that students can continue to use tools as needed.

MP5 Use appropriate tools strategically. Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations.... Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

the snakes are very concern students.
tell which is shorter
straight. Use a pipe
that can be curved to measure the
length and curve in the same fashion to

observe that the pencils are not
ter pencil is shorter at each end.

herally accurate in identifying which
direct comparison or by using their
plain how they know they are correct.

observe that the pencils are not
ter pencil is shorter at each end.

and feel two objects to compare
he snakes, these objects are likely
old and compare.

Extension: Adding Rigor
- Have students walk around the room holding an object (a marker, a piece of string). They are looking for 3 items that are longer/shorter than their object.

Laurie's Notes

Think and Grow

Getting Started

- Introduce the vocabulary card for **capacity**. Use an object from the Dig In to demonstrate the meaning of the word. Explain that it is another measureable attribute of the object.
- You want students to understand that a shorter height does not mean it has less capacity. A small wastebasket may be the same height as a water bottle but it has a greater capacity.

Teaching Notes

- ⊙ Students determine if two objects have the same capacity. If not, they identify which holds more or holds less.
- ❓ **Model:** "Descartes and Newton are looking at a sand bucket and sand shovel. Do they hold the same amount? How do you know?" Students may say they use the shovel to fill the bucket and they have to scoop many times to fill the bucket. "Circle the object that holds more."
- "Compare the clear measuring cup and the red measuring cup. Draw a line through the object that holds less." Ask students to explain how they made their decision. They may have a familiarity with these items.
- "The clear cup holds more. The red cup holds less."
- ❓ "What are the blue and green objects?" recycling bins "Are the bins the same capacity? How are they different?" They are the ~~same capacity. They are just different sizes.~~
- **Supporting Learners:** Students may need additional experience with comparing the capacities of objects. The math center should have many objects that students can fill with water, sand, or linking cubes.
- **Extension:** "If one object is shorter than another, will it hold less?" not necessarily
- ⊙ "Explain to your partner how to compare the capacity of two objects." Pause. "Are you feeling confident about deciding if one object holds more or holds less than another object?"

Laurie's Notes

Think and Grow: Modeling Real Life

This application helps students count and write the numbers 1 through 5.

- **Preview:** Explain that ponds are home to many animals and insects. Discuss activities that can take place at a pond such as swimming, fishing, boating, and skipping rocks.
- ◉ Take time to talk with students about what they have learned regarding the numbers 1 through 5. Can they count a group of objects and tell how many? Can they draw a picture or use manipulatives to show a number? Can they write each number? Students with little prior experience may be feeling a bit overwhelmed or confused at this time. Assure all students that they will continue to work with and practice these numbers.
- You may want to wait until students have completed this page before you ask them to judge their proficiency considering many of the numbers are reviewed.
- "There are many objects in the picture. Talk with your partner about how you will count each object." You want students to have a strategy for locating and keeping track of which objects have been counted. Solicit ideas from students.
- **MP7 Look for and Make Use of Structure:** If possible, display the picture using a document camera. Ask volunteers to share their strategies for counting. Compare the different approaches. Remind students that the quantity stays the same regardless of the order in which the objects were counted.
- Ask to see whether students found it easier to count the ducklings because they are in a straight row.
- ◉ When students have completed the page ask them to use their thumb signals to judge their understanding of the success criteria. "Are you comfortable telling how many are in a group by counting or sight, making a group of five, and writing the number 5?" You could ask additional questions about the numbers 1 through 4.
- ❓ **Extension:** "How many ladybugs are there? Is there another group of five?" Yes, there are five ducks.
- **Extension:** Prompt students who have mastered identifying and writing the number of animals in the scene to draw additional animals so that there are five of each in the picture.

Closure

- Call four students up to the front of the room. Have the class identify the number of students standing there. "How can we make this five students?" After students decide to have one more student join the group, recount the students. Continue this process using different starting numbers.

Laurie's Notes

Think and Grow: Modeling Real Life

This application allows students to show their understanding of greater than and less than. It is important that students draw objects for each comparison. You will have a better understanding of students' thinking when viewing their drawings.

- **Preview:** There may be students who are not familiar with golf or miniature golf. Ask a student who is familiar to explain the game to the class.
- Begin each exercise by asking students to count the number of golf clubs on the ground.
- Read the directions as stated and rephrase as needed. The first direction line could be, "You want more golf balls than golf clubs." Have students write the numbers of golf balls and golf clubs. Observe and note whether students write the number first or draw the golf balls first.
- **MP7 Look for and Make Use of Structure:** Have students show their pictures to one another. You want them to notice that their neighbors may have a different number of golf balls but that they are both correct.
- **Note:** The directions tell students to draw golf balls on the ground in the second exercise. Students may say that they can draw zero balls. Can they explain why it is less than four? If students can successfully explain their answers, then they have grasped the concept.
- **? Extension:** "How many golf clubs do you need to draw in the first exercise to have an equal amount? How many golf balls do you need to draw in the second exercise to have an equal amount?"
- ◉ Revisit the learning target. Have students signal their ability to use counting to tell whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group.
- **Supporting Learners:** Some students may confuse the meaning of greater than and the meaning of less than. Display the vocabulary cards for students to see. If necessary, place a set of vocabulary cards on their desks.

Closure

- Review counting to 5. Then show three linking cubes, and have students count them. Ask students to model a number that is greater than three. Allow students to share their answers. Repeat this process several times, having students show numbers greater than, less than, or equal to the initial number modeled.

Laurie's Notes

Think and Grow

Getting Started

- Introduce the vocabulary card for **nine**. Consider creating an anchor chart for nine.
- **Turn and Talk:** "What do you know about the number *nine*?" nine innings; September; a tic-tac-toe board You could have students tell their partners how they see the nine dots on the vocabulary card.
- **? Sample Questions:** How many counters are in the ten frame? What comes after 8 when counting? Do we have reading time at 9 o'clock? Do you have a brother who is 9 years old?

Teaching Notes

- **MP7 Look for and Make Use of Structure:** Point out the arrangements of the balls, pelicans, and towels. All of these arrangements help to build students' subitizing skills. When you ask students to tell how they are counting the objects, do you hear evidence of students seeing smaller parts that are combined to make nine?
- **Model:** Together as a class, count each ball. As students say the counting sequence, they place a linking cube or counter on each ball. Slide the counters to the ten frame boxes to see how many. Color each box that has a counter.
- Give directions as needed, while students count the pelicans and beach towels. Count, say how many, slide, and color.
- The arrangement of the towels is set up so that students can count the objects in different ways. For instance, students could start with the last towel in the bottom row, or the top row at the right. They could also subitize and see a dice pattern group of six and count on three more.
- **Big Idea:** The number of towels does not change when you count them in a different order.
- ⊙ "How good do you think you are at counting to 9? Show me with your thumb signals."
- **? Extension:** Have students count a quantity of nine shown in a circular arrangement. Model this by having nine students stand in a circle. Select one student to start. The first squats and says, "One." The next student squats and says, "Two." Continue around the circle and make sure students are able to see the importance of where you start when counting a circular arrangement. Ask, "What do you think might happen if we did not squat as we counted?"

ELL Support

Teach the words beach ball, pelicans, and towels by pointing to each and stating its name. Tell students that a pelican is a type of bird found by the sea that catches fish with its large beak and throat. Have students work in groups to describe the number of items counted in each exercise.

Beginner students may only count aloud from 1 to 9 as they point to the pictures.

Intermediate students may say the number and the name of the objects, such as, "nine beach balls."

Advanced students may use simple sentences to describe the number of objects, such as, "There are nine beach balls."

Laurie's Notes

Think and Grow: Modeling Real Life

This application allows students to show their understanding of comparing written numerals. It also involves quantitative reasoning each time the students decide what number satisfies a condition.

- **Note:** The directions ask students to think of numbers that are *one more* or *one less* than another number. You can alter the directions and ask students to think of numbers that are *more* or *less* than another number. This more open-ended direction line will result in students having different answers.
- **Preview:** Show a picture of a bouquet of flowers. Talk about the types of flowers that they are familiar with or may have picked.
- **❓ MP1 Make Sense of Problems and Persevere in Solving Them:** Introduce the first set of directions. Say, "I want you to think of some numbers greater than 6." 7, 8, 9, 10 "Which of those numbers is less than 8? 7 How many flowers should you draw?" 7 Have students write the number and draw the flowers. "You have seven flowers."
- **❓ MP6 Attend to Precision:** "What number is one more than 5?" 6 Have students write the number and draw the flowers. Circle the greater number.
- **Note:** If you altered the directions and said, "Draw any number greater than 5," students' work will differ. They may show 6, 7, 8, 9, or 10.
- **MP7 Look for and Make Use of Structure:** In the second exercise, you want students to make the connection between 10 being one more than 9, and 9 being one less than 10. Probe with questions that address this relationship.
- **❓ Extension:** "What is a number that is greater than 6 but less than 9?" Have partners *Turn and Talk* to discuss. You want students to realize that there could be multiple answers.
- **◉** Have students talk about what they learned today. Listen for students to use the correct vocabulary and for them to talk about how models can show you are correct.

Closure

- Write the number 7 on the board. Show number cards 5–10 randomly. Have students stand when the number is greater than 7, sit when the number is less than 7, and jump when the number is equal to 7. To allow think time for all students, give a signal when they are to answer.

Laurie's Notes

Think and Grow: Modeling Real Life

This application allows students to show their understanding of partner numbers to 5. Students use their understanding of part and whole to show different sets of partner numbers.

- **Preview:** "Have you ever seen a ladybug before?" Allow students to share their experiences with the class. Listen for knowledge of spots on a ladybug.
- **Think Time:** "How can you draw four spots on the two wings of a ladybug?" Once students have thought about their response, they should draw the spots.
- **Common Error:** Watch for students who draw four spots on each wing. Remind them the ladybug has only four dots. Four is the whole. What are partner numbers for four?
- **Turn and Talk:** Have partners use their ladybugs to name the parts and the whole. Listen for the language of partner numbers.
- ◉ Choose several students to share their partner numbers. Refer to the anchor chart to review the different sets of partner numbers for 4. Also have students use their thumb signals to show how confident they are in knowing what parts, whole, and partner numbers are.
- Students now draw and write two different sets of partner numbers for five.
- **? MP7 Look for and Make Use of Structure:** "Is there more than one way to make the number 5? How do you know?"
- **? Extension:** "What are two sets of partner numbers for 2?" 1 and 1; 2 and 0
- **Supporting Learners:** Students can use counters to practice the different partner numbers for numbers to 5.
- **Supporting Learners:** Some students may be able to visualize the different partner numbers for a whole. Have students verbalize their method of finding partner numbers, as others may benefit from hearing alternative methods.
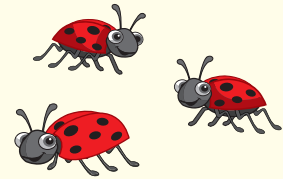
Closure

- Choose one student to name a number from 1 to 5. Have the remaining students use their fingers to show a set of partner numbers that makes the whole. Students can show and discuss the various partner numbers for each whole.

**Addition
Number Patterns**

6.5

Learning Target: Explain addition patterns with 0 and 1.

Explore and Grow

$1 + 1 =$

$2 + 1 =$

$3 + 1 =$

Adding 1 gives the next number when counting.

$1 + 0 =$

$2 + 0 =$

$3 + 0 =$

Adding 0 gives the same number.

Directions: Color the boxes to show how many in all. Tell what you notice.

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Explore and Grow

- Explain there are two parts. You want observations for each portion.
- Students color boxes to show how many in all. Ask what they notice on the first part. Students may focus only on the length of the colored boxes getting longer. Draw attention to the addition sentence and how it is changing.
- ❓ Repeat for the bottom portion, adding zero. "What do you notice when you add 0 to a number?" Students may not have precise language.

Name _____

Subtraction Number Patterns

7.4

Learning Target: Find and explain subtraction patterns.

Explore and Grow

$3 - 0 =$ **3**

$2 - 0 =$ **2**

$1 - 0 =$ **I**

$3 - 1 =$ **2**
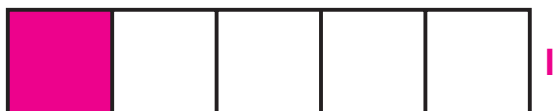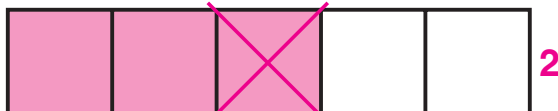
$2 - 1 =$

$1 - 1 =$
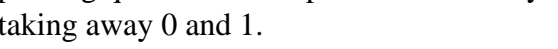
Directions: Shade the boxes to show ~~shaded boxes to show how many are~~

Chapter 7 | Lesson 4

Indicator 2f - The Teaching Edition encourages teachers to ask probing questions to help students identify the pattern and structure of taking away 0 and 1.

MP7 Look for and make use of structure. Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property.... They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects....

Explore and Grow

- "What do you notice on the top part?" Students should notice that no boxes were crossed out and, the number of shaded boxes is decreasing by 1. Both are patterns, and seeing no boxes crossed out is the pattern to focus on.
- ❓ "What do you notice when you take away 1?" Listen for understand of the previous number. Students may also mention one box is crossed out in each problem.
- Listen for subtraction vocabulary. "When I take away 0 I have 3 left."

7.7

Laurie's Notes

Learning Target
Use related facts to add or subtract within 5.

Success Criteria
- Write addition and subtraction sentences to show related facts.
- Explain what is the same and different in these sentences.

Warm-Up
Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*
- Daily skills
- Vocabulary
- Prerequisite skills

ELL Support
Point out that the learning target for this lesson is to use related facts to add or subtract. They may have heard the word related in the context of talking about family members. To be related means to be interconnected. In this lesson they will see how math facts are related.

Preparing to Teach

STATE STANDARDS
K.OA.A.1, K.OA.A.2, K.OA.A.5

Students have a beginning understanding of subtraction and are able to write subtraction sentences. Some students may have already seen a connection between addition and subtraction as inverse operations. You now want all students to be able to think about a pair of partner numbers within 5 and be able to write the related addition and subtraction sentences for these numbers. There is an expectation of fluency for addition and subtraction within five.

Materials
- paper cups
- whiteboards and markers
- linking cubes

Dig In (Circle Time)
Use the cups to model related addition and subtraction facts within 5. Students record each pair of sentences on their whiteboard.

- Place 2 cups in the circle. "Plus 3 more." Add 3 cups to the circle. "How many in all?" Pause. "Write an addition sentence to answer the question." Students write $2 + 3 = 5$.
- Place 5 cups in the circle. "Take 3 away." Remove 3 cups from the circle. "How many are left?" Pause. "Write the subtraction sentence to answer the question." Students write $5 - 3 = 2$.
- Repeat this activity. Model $1 + 4 = 5$ and $5 - 4 = 1$.

$$2 + 3 = 5$$
$$5 - 3 = 2$$

- **MP7 Look for and Make Use of Structure:** Have students talk with their partner about the two sentences on their whiteboards. "What do you notice?"

Students may not recall exactly the first pair of sentences, but the pair written on their whiteboards should remind them. Have students share their observations with the class.
- **Big Idea:** You can take an addition fact within 5 and write a related subtraction sentence.
- ◉ Share the learning target and success criteria. Connect the activity they just did with the first success criterion. "How clear is your learning so far on this?" Frequent student self-assessment helps the learning become visible to students.

Laurie's Notes

Think and Grow

Getting Started

- Introduce the vocabulary cards for **thirteen** and **fourteen** and discuss your anchor chart.

- ❓ **MP7 Look for and Make Use of Structure:** "What do you notice about our new numbers?" Listen for the same endings, 'teen'. Students may ask why we don't say <u>three</u>teen since there is a <u>four</u>teen. In the English-speaking world the names for the teen numbers do not make their base-ten meanings evident. Moreover, saying the names fourteen to nineteen reverse the order the digits are written in. Saying the numbers, ten three and ten four as they do in East Asia, makes more sense.

Teaching Notes

- Note that the lettuce and beets are arranged in a rectangular array resembling a ten frame, plus some more. Probe to see if students are using this visual support as they count the vegetables.

- **Model:** Together as a class, count *the group* of 13 heads of lettuce and 14 beets. Finger trace the numbers 13 and 14. Students should be familiar with the verbal pathways for 1, 3, and 4.

- Remind students to leave a small space between the digits.

- ◉ Summarize and connect the examples to the learning for today. "We have counted to 13 and 14. We have written the numbers 13 and 14. Tell your partner what you know about these two numbers." Listen for a group of ten plus 3 or 4 more. You have to write two parts for each number.

- **Teaching Tip:** The green beans are in a linear arrangement where counting them is more challenging. Students can cross out each bean as they count.

- ❓ **Turn and Talk:** "Are there fewer green beans or red peppers? How do you know?" Answers vary. Listen for understanding 13 and 14 both have 10 plus some more. Do students recall that 3 is fewer than 4? Do students say, "13 comes before 14 when you count"?

- ◉ Review each success criteria and have students use their thumb signals.

- ❓ Write the numbers 13 and 14. "How do we read these numbers?" You want to make sure students are not saying one three and one four.

- **Supporting Learners:** Have students circle a group of ten. Now students can focus on how many more than 10 they have.

ELL Support

Point to the cabbage, beets, green beans, and peppers as you say the name of each. Have students repeat. Explain that they are all types of vegetables. Have students practice language in pairs. One student asks the other "How many cabbages are there?" Then have them alternate roles for other exercises. You may want to teach them that cabbage is often referred to as a head, such as, "two heads of cabbage."

Beginner students may state the answer and the item counted.

Intermediate/Advanced students may answer using simple sentences, such as, "There are thirteen cabbages."

2.2

Check out the Dynamic Classroom.
BigIdeasMath.com

Laurie's Notes

Learning Target

Show and tell whether one group has a greater number of objects than another group.

Success Criteria

- Match objects from two groups.
- Identify the group that has more objects.

Warm-Up

Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com*.

- Daily skills
- Vocabulary
- Prerequisite skills

ELL Support

Explain to students that the word *greater* can mean more than one thing. If something is great, then it is very good. Something that is greater than something else is better. Explain that in math the phrase *greater than* means *more than*, instead of *good* or *better*.

STATE STANDARDS
K.CC.C.6

Preparing to Teach

Give a student one more treat than another student and you will hear, "They have more." You want students to have the understanding that the quantity of objects in one group is greater than the quantity of objects in another group. Be careful about how you display the objects in the two groups. Place them so that they are easily matched to be sure students are comparing quantities and not the size of the objects.

Materials

- collections of objects to match
- linking cubes
- two-color counters

Dig In (Circle Time)

Gather a collection of objects that students will recognize go together, such as cups and saucers, pairs of shoes, or crayons and coloring books. The goal is to have students match objects from one group (cups) with objects from the other group (saucers).

- Give 4 cups to one student and 4 saucers to a second student.
- **?** Ask "How many do you have? Do you have the same number of objects?" Students match each cup with a saucer.
- **?** Use unequal amounts, such as three left shoes and two right shoes. After students say how many they have ask, "Do you have the same number of objects? Tell your partner what you think will happen if we match the left shoes to the right shoes." Listen for an understanding that one group has more, and so, there will be a shoe left over.
- Repeat this process several times by using a series of equal and unequal amounts. Students compare by matching.
- ⊙ Can students identify unequal groups? Can they match objects from each group and tell which group has more?

? Teaching Prompt   ⊙ Learning Target

Laurie's Notes

Think and Grow

Getting Started

- **Supporting Learners:** If students have trouble with drawing circular models, they could use manipulatives or draw an X to model the number. They can still draw the matching line.
- Some students will not want to draw at all, saying that they *just know* which number is greater or less. Refer to the second success criterion. Drawing the model shows that you know your answer is correct.

Teaching Notes

- There are three problems and three comparison statements. Pause between each direction line.
- The directions ask students to compare first, then draw a supporting model. Watch for students who need to draw first. You want students to understand the quantity and then draw to show their thinking.
- **❓ Model:** "We want to compare the numbers 8 and 5. Are they equal? Can you draw to show how you know?" Students should explain that the number of circles is not the same. Circle the thumbs down.
- **❓ MP8 Look for and Express Regularity in Repeated Reasoning:** "How did you compare 10 and 7?" I know 10 comes after 7, so 10 is greater. "How did you compare 1 and 6?" I know 6 comes after 1, so 6 is greater. If 6 is greater, then 1 is less.
- **Teaching Tip:** Students often have a harder time determining the number that is less than another number. Support these students by telling them to find the number that is greater, and then determine the number that is less.
- ◉ Focus on the third success criterion. Talk about the models drawn on this page and other models they have used such as five and ten frames, fingers, dot models, and rekenreks. As students are still learning and understanding the counting sequence, the models provide a visual way to compare two quantities. "Signal with your thumb to show that you know how to use models to compare numbers."
- **❓ Extension:** Write the number 8 on the board. "What is a number greater than 8? less than 8? equal to 8?" Have students write or say each answer.
- **Supporting Learners:** Some students may have difficulty understanding that when they count, each successive number is one greater. Provide a visual of linking cube towers built from 1 to 10 to help students relate the counting sequence to the quantity of each number.

ELL Support

Have students continue to practice verbal language. One student asks the other, "Are the numbers equal?" Then have them switch roles for the other exercise.

Beginner students may only answer "yes" or "no."

Intermediate students may answer with a simple sentence, such as, "They are not equal."

Advanced students may answer with a sentence, such as, "No, 10 is greater than 7."

Check out the
Dynamic Classroom.

BigIdeasMath.com

6.5

Laurie's Notes

Preparing to Teach

COMMON CORE **STATE STANDARDS**
K.CC.B.4c, K.OA.A.1,
K.OA.A.2, K.OA.A.5

Students have written addition sentences where one of the addends (parts) was 0 or 1. Students may have comments that adding 0 is like not adding anything. Student language may not be precise but they are trying to communicate that they notice a pattern. The goal of this lesson is to help students explain clearly what the patterns are when you add 0 or 1 to a quantity. A double domino is used as a model with one side being 0 or 1.

Materials
- floor number path
- crayons

Dig In (Circle Time)

MP5 Use Appropriate Tools Strategically: Use a number path that can be placed on the floor. Laminated pages, each with a counting number, work just fine. You want the number path to be large enough so that it is clear what number the students' position represents. In the figure shown, the student is standing on 4.

- **Example:** Ask a volunteer to stand at the beginning of the number path. "Take four steps." Student moves to 4. "Take 2 more steps." Student moves to 6. Ask students to help you record the steps in an addition sentence. Write $4 + 2 = 6$. Repeat once or twice more.
- Now do a few trials where the number being added is 0. The first time you do this, students will think you made a mistake. "You can't take 0 steps." Let students talk about what *plus zero* means. Record each trial in an addition sentence. $4 + 0 = 4$.
- Finally, do a few trials where the number being added is 1. "Gee, you don't go very far do you?" Listen to students' observations. "It's just the next number."
- **MP8 Look for and Express Regularity in Repeated Reasoning:** Have students talk to their partners about what they noticed whenever they were told to take 0 steps. Listen for the concept of staying on the same space. Ask about taking 1 step—they ended on the very next number.
- ◉ Explain that this lesson is about the patterns when you add 0 or 1 to a number.

Learning Target
Explain addition patterns with 0 and 1.

Success Criteria
- Describe a pattern.
- Explain that I have the same number when I add 0.
- Explain that I have the next number when I add 1.

Warm-Up
Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*
- Daily skills
- Vocabulary
- Prerequisite skills

ELL Support
Draw a pattern of repeated shapes and lines on the board. Point and say, "This is a pattern of different shapes." Draw a second pattern. Say, "This is another pattern of shapes." Explain that patterns can be found in many things, such as art, language, and math. Say that we will now look at patterns in addition.

7.4

Check out the
Dynamic Classroom.
BigIdeasMath.com

Learning Target

Find and explain subtraction patterns.

Success Criteria

- Subtract 0, 1, or all of the objects from a group.
- Explain the patterns of subtracting 0, 1, or all.

Warm-Up

Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*

- Daily skills
- Vocabulary
- Prerequisite skills

ELL Support

Review with students the meaning of the word pattern. Draw a pattern of repeated shapes and lines on the board. Point and say, "This is a pattern of different shapes." Have students point out patterns they see or draw patterns. Explain this lesson is about subtraction patterns.

Laurie's Notes

STATE STANDARDS
K.OA.A.1, K.OA.A.2, K.OA.A.5

Preparing to Teach

Students have written subtraction sentences where 0, 1, or all of the objects are subtracted. Students may have commented that subtracting 0 doesn't change anything, or subtracting all means you have none left. Student language may not be precise but they are trying to communicate that they notice a pattern. The goal of this lesson is to help students explain clearly what the patterns are when you subtract 0, 1, or all of the quantity. The subtraction is modelled in a ten frame. The whole is shown and the part to be subtracted is crossed out.

Materials

- floor number path

Dig In (Circle Time)

Use Appropriate Tools Strategically: Use a number path that can be placed on the floor that includes 0.

- **Example:** Ask a volunteer to stand at the number 4. "Which way should [name] step if we want to show subtraction and why? Tell your partner." Ask volunteers to share their thinking. They will say step backward. "[name], step back 2 steps." Ask students to help you record the steps in an subtraction sentence. Write $4 - 2 = 2$. Repeat once or twice more.
- Now do a few trials where the number being subtracted is 0. "You don't move," is what you will hear students say. Let students talk about what *subtract zero* means. Record each trial in a subtraction sentence. $4 - 0 = 4$.
- Do a few examples where the number being subtracted is 1. "Gee, you don't step back very far do you?" Listen to students' observations. "It's just the next number before."
- Finally, a few examples where you *subtract all*. "You don't have any left!" Listen to students' observations. "You always end at 0."
- **MP8 Look For and Express Regularity in Repeated Reasoning:** Have students talk to their partner about what they noticed whenever they were told to take 0 or all of the steps. Listen for the concept of staying on the same space or ending at 0. Ask about taking 1 step back—they ended on the number before.
- Explain that their exploration today is about subtracting 0, 1, or all. Their language may not be precise, but their learning should be more visible after this activity.

❓ Teaching Prompt   ◉ Learning Target

8.11

Check out the Dynamic Classroom.
BigIdeasMath.com

Laurie's Notes

Learning Target

Understand the numbers 18 and 19.

Success Criteria

• Show the numbers 18 and 19 as a group of ten and eight or nine more.
• Write 18 and 19 as 10 + a number.

Warm-Up

Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*

• Daily skills
• Vocabulary
• Prerequisite skills

ELL Support

Explain that students will examine the numbers 18 and 19 by using the number 10 and a partner number to make each whole number. Remind them to pronounce the words *eighteen* and *nineteen* carefully so they will be easy to distinguish from the words *eighty* and *ninety*.

Preparing to Teach

This is our final lesson in learning about the teen numbers and the format will look very familiar to students. This repetition helps those who need additional time and practice in making sense of counting and writing teen numbers. Remember, the focus is on the pre-place-value understanding that 18 ones is a group of 10 ones and 8 more ones. This is represented as an addition sentence, $18 = 10 + 8$.

The theme of this les

Materials

• linking cubes
• Number Bond*
• Hidden Place Valu

* *Found in the Instru*

Dig In (Circle

Make two linking cu
a Number Bond in th
the cubes in one tow
whole. Cubes of the
of 10 and 8 (or 9).

Indicator 2f - The Teaching Edition identifies that this lesson is similar to the previous lessons and states that the repetition helps students fully grasp the pre-place-value understanding of teen numbers.

MP8 Look for and express regularity in repeated reasoning - Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts....As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

• Hold up one cube tower. "I bet you can guess what we are going to do with this cube tower!" Listen for, "Count it and put it on the whole!" Count to confirm there are 18 cubes."
• ❓ **Turn and Talk:** "What do the two colors tell us about the 18-tower? Tell your partner." Listen for the colors show the group of 10 and 8 more.
• "What should we do with the second 18-tower?" Listen for understanding of the partner numbers 10 and 8. Separate and place the two pieces on the number bond mat for the parts.
• Repeat activity with 19 cubes, 10 green and 9 yellow.
• ◉ "We have been using our linking cube towers and Number Bond to show how 18 cubes is the same as a group of 10 cubes and 8 more cubes. How confident are you about your learning right now?"

Laurie's Notes

Think and Grow: Modeling Real Life

This application helps students count and write the numbers 1 through 5. They will also write the numbers in reverse order.

- **Preview:** Have students talk with their partners about what they see. The concept of rockets flying into space may not be familiar to all students. As a class, discuss what students think about rockets, flying in space, and stars.

❓ "When do you see stars?" Listen for many answers, including those other than just at night. Explain that stars can also be different colors.

- Read the directions. Have students discuss strategies they can

- **MP3 Construct Viable Arguments and Critique the Reasoning of Others:** Encourage students to count and then check with partners to see whether they agree about the number of each color of star. Students should feel comfortable talking with partners and then self-correcting when they recognize a mistake.

- Read the directions for the last example. Check for understanding of what *reverse order* and *starting number* mean.

- **Note:** If students are not ready to write the numbers in reverse order, have them write the numbers in order starting with 1.

❓ **Extension:** "How many brown stars are there? Where would you place this number in the order?" Count backward again as a class, "5, 4, 3, 2, 1, 0 blast off!"

◉ When students have completed the page, ask them to use their thumb signals as you review each success criterion. Use additional language so students are clear about the difference between counting numbers and ordering numbers. Counting in order needs to be assessed separately from counting in the reverse order.

- **Supporting Learners:** Use shuffled number cards and linking cubes to have partners build each number and then order the number cards.

- **Supporting Learners:** Some students may not need the visual representation to order numbers. Circulate and ask students to explain their understanding (strategy) for ordering the numbers 1 through 5.

Closure

- Write number sequences on the board from 0 to 5. Leave out one number each time. Have students identify which number is missing in the sequence. Choose a student to come to the board to complete the number sequence or have students record the missing number on their whiteboards.

Laurie's Notes

ELL Support

Have students use their vocabulary cards for the numbers 0, 5, 6, 7, 8, and 9. Ask students the following questions and have them hold up the appropriate card. "How many buttons have two holes? How many buttons have four holes? How many buttons are blue? How many buttons are green? How many buttons are red?"

Think and Grow: Modeling Real Life

This application allows students to show that they can compare the number of objects in two categories. The second exercise extends this skill to three categories.

? **Preview:** Point to the side of the page. "What are all of these objects? How are they the same? How are they different?" You want students to observe that all of the objects are buttons. Some have two holes and some have four. There are three different colors of buttons.

? "I'm curious. Do you think there are more buttons with two holes or with four holes? How can we decide?" Listen for a student to say, "Make a chart."

? **MP3 Construct Viable Arguments and Critique the Reasoning of Others:** "Does it matter what color the buttons are when we classify them by the number of holes they have? Explain how you know." Give think time. Solicit explanations and ask others whether the explanations make sense.

- **Teaching Tip:** Display the page, if possible. Model how to keep track of which buttons have been counted. Cover each button with a small counter or make a mark through each button as they are counted.

- Remind or probe students for the steps as they use marks to show each button in a category, count how many are in a category, and compare the numbers to decide whether there are more buttons with two holes or four holes.

- Now read the directions for classifying by color. If students made a mark through the buttons when classifying by the number of holes, they can turn it into an X now.

- Some students will be able to count each color while other students may want to make a chart with marks.

- ⊙ Refer to the first button exercise and ask students to use their thumb signals to show how well they could decide whether the button had two or four holes, make a mark for each button, count how many were in each category, and decide which category had more. Repeating the steps helps all students become more comfortable with the multi-step process.

Closure

- Display a chart with marks in two categories, such as the number of days in two weeks that are sunny or not sunny, rainy or not rainy, or hot or not hot. Discuss the two categories. "Compare the two categories. Which one has less?"
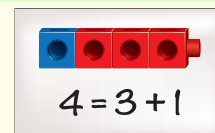
Laurie's Notes

Think and Grow

Getting Started

- Students use their knowledge of partner numbers to write an addition sentence. The whole is known and students decide, by coloring, how to write it as a sum of two partner numbers.
- **MP6 Attend to Precision:** Use the language, "six is the same as 3 plus 3," or "six equals 3 plus 3," or "six balances with 3 plus 3."

Teaching Notes

- **Model:** "There are six stars." Point to the second picture. "Three of them are colored red and three are colored yellow. What addition sentence can we write to show that 3 and 3 are partner numbers for six?"
- Talk about the addition sentence as students trace.
- **? Extension:** "What other partner numbers are there for six? What would the addition sentence be for each pair?"
- Students use two colors to fill in the linking cubes.
- **?** "How many linking cubes did you color?" 4 "How many did you color blue? Red?" Answers vary. "Does your addition sentence explain what you colored? Explain."

- **? MP3 Critique the Reasoning of Others:** It is very possible that a student will produce the work shown. Some students will say this is wrong because the addition sentence should be 4 = 1 + 3. Others will say it doesn't matter if you write 1 + 3 or 3 + 1. The point is not to introduce the Commutative Property, rather give students the opportunity to think about the relationship and critique the reasoning of others.

$4 = 3 + 1$

Indicator 2g.i - Students must use what they have learned to build a logical argument to critique the reasoning of others.

MP3 Construct viable arguments and critique the reasoning of others. Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and — if there is a flaw in an argument — explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades.... Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

ELL Support

Have students practice language in pairs as they complete the two exercises on the page. One student asks the other "What colors did you use to color the cubes? How many cubes did you color with (name of first color)? How many cubes did you color with (name of second color)?" Then have students alternate roles for the other exercise.

Beginner students may only state short answers, such as, "green and blue."

Intermediate students may answer using simple sentences, such as, "I used green and blue."

Advanced students may answer using longer sentences, such as, "I used green and blue cubes."

6.6

Check out the Dynamic Classroom.
BigIdeasMath.com

Laurie's Notes

Learning Target

Add partner numbers to 5.

Success Criteria

• Show and tell how to add numbers to 5.
• Complete an addition sentence.

Warm-Up

Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*

• Daily skills
• Vocabulary
• Prerequisite skills

ELL Support

Explain that this lesson focuses on practicing addition. Practice is used to improve a skill and it is common for musicians and sports teams to practice to improve their performance. Students have already practiced many math concepts in other lessons and will practice addition here to improve their ability to add.

Preparing to Teach

This is the first section in kindergarten where the focus is on **fluency**. Mathematics literature refers to procedural fluency as *the skill in carrying out procedures flexibly, accurately, efficiently and appropriately*. Students have learned to count, and have modeled and reasoned about addition. In this section you want to see evidence that students can accurately and efficiently add numbers within 5 and will know the sum without the use of counters or picture stories. The additional practice of this lesson will help students move towards fluency.

Materials

• two-color counters
• crayons

Dig In (Circle Time)

There is no new content presented today so it would be helpful to make an anchor chart of the many different ways to do addition. Include drawing a picture of the problem, using fingers to count, using a number path, counting on, using counters, and using knowledge of all the ways to make five (partner numbers). Ask, "Did anyone do it another way?" Include all answers that make sense in the list.

◉ Share the learning target and success criteria for the day. Explain that you want them to show all of the ways they know to add numbers. "Tell your partner different ways you can show how to add two numbers."

• You may want to have manipulatives and whiteboards available for students to demonstrate their thinking.

? MP3 Critique the Reasoning of Others: When students share their thinking with classmates, ask other students to comment on what they have heard. "Do you agree with how [name] explained using your fingers to count? Did their thinking make sense? Why?"

• Because all of their work today will be adding within 5, display and review earlier anchor charts that showed partner numbers to 5.

6.8

Check out the
Dynamic Classroom.
BigIdeasMath.com

Laurie's Notes

Learning Target
Find partner numbers for 10 and write an addition sentence.

Success Criteria
- Add on to a number to make 10.
- Show partner numbers for 10.
- Write an addition sentence for 10 when one group is given.

Warm-Up
Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*
- Daily skills
- Vocabulary
- Prerequisite skills

ELL Support
Explain that students will find two numbers and use them to add to a total of ten. All totals in this lesson will be ten, but there are six pairs of numbers that are possible to make that total: $0 + 10$, $1 + 9$, $2 + 8$, $3 + 7$, $4 + 6$, and $5 + 5$.

STATE STANDARDS
K.OA.A.4

Preparing to Teach
In later work when students find sums greater than 10 they will first think of sums to 10. For example, to add $7 + 4$, students will think of 4 as $3 + 1$. So $7 + 4$ is the same as $7 + 3 + 1 = 10 + 1 = 11$. Knowing the partner numbers for 10 is a foundational concept. It is a strategy used in both addition and subtraction problems in later grades. Recall that students have also composed and decomposed the number 10 in Lesson 5.7 and in this section, they write number pairs for 10 in an addition sentence.

Materials
- linking cubes

Dig In (Circle Time)
Two colors of linking cubes can be used to model the number 10. Because the model can be turned 180°, it helps students think about the commutative relationship. The related number pairs for 10 can also be modeled with two colored counters and a ten frame. Adjust the activity for ten frames.

$6 + 4$
$4 + 6$
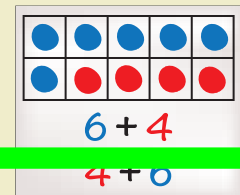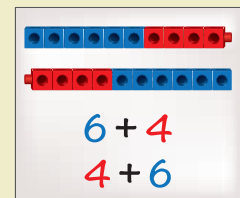
- Hold up 6 linking cubes in a train. "What number is this?" Pause while students count. "Tell you partner how many more we need to make 10."

$6 + 4$
$4 + 6$

- **MP3 Construct Viable Arguments:** Solicit an answer and ask the volunteer how they know they are correct. Then have the volunteer use another color of linking cubes to finish the 10 train.
- **? MP3 Critique the Reasoning of Others:** "Do you all agree with [name]?" If no one suggests the related pair ($4 + 6$ versus $6 + 4$), rotate the linking cube model 180°. You want students to see that [name] was correct *and* there is a second addition sentence that is also correct. *Both* addition sentences are correct. Hold the cubes in a vertical as well as horizontal direction so students see different orientations.
- Repeat this activity using a start number other than 6.
- Showing [name] using the strategies they have been demonstrating the first and second success criteria. Point out how [name] was able to explain why $6 + 4$ equals 10. "You also used the linking cubes to show partner numbers for 10."

7.5

Check out the
Dynamic Classroom.
BigIdeasMath.com

Laurie's Notes

Learning Target
Subtract within 5.

Success Criteria
- Show and tell how to subtract numbers within 5.
- Complete the subtraction sentence.

STATE STANDARDS
K.OA.A.1, K.OA.A.2, K.OA.A.5

Preparing to Teach

This is the second section in kindergarten where the focus is on **fluency.** Mathematics literature refers to procedural fluency as *the skill in carrying out procedures flexibly, accurately, efficiently and appropriately.* Students have worked with two subtraction situations, *take from* and *take apart,* and have modeled and reasoned about subtraction. In this section you want to see evidence that students can accurately and efficiently subtract numbers within 5 and will know the difference without the use of counters or picture stories. The additional practice of this lesson will help students move towards fluency.

Materials
- two-color counters
- Five Frames*

**Found in the Instructional Resources*

Warit-Up

Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*

- Daily skills
- Vocabulary
- Prerequisite skills

Dig In (Circle Time)

There is no new content presented today so it would be helpful to make an anchor chart of the many different ways to do subtraction. Include drawing a picture of the problem, using fingers to count, using a number path, using counters and five frames, and using knowledge of all the ways to make five (partner numbers). Ask, "Did anyone do it another way?" Include all answers that make sense in the list.

- ◉ Share the learning target and success criteria for the day. Explain that you want them to show all of the ways they know to subtract numbers. "Tell your partner different ways you can show how to subtract two numbers."
- ◉ Explain what it means to subtract within 5. Show students a collection of five counters or linking cubes. "Can you start with some of these counters, take some away, and tell how many are left? Can you tell how to take away a number and find how many are left?"
- Have manipulatives and whiteboards available for students to demonstrate their thinking.

ELL Support

Point out that the goal for this lesson is to subtract fluently within a group of five. They may have heard the word fluently in the context of speaking a language. To speak fluently means to speak easily. To subtract fluently means to subtract quickly and easily.

- **MP3 Critique the Reasoning of Others:** When students share their thinking with classmates, ask other students to comment on what they have heard. "Do you agree with how [name] explained using your fingers to take away a number? Did their thinking make sense? Why?"
- Since all of their work today will be subtracting within 5, display and review earlier anchor charts that show partner numbers to 5.

❓ Teaching Prompt   ◉ Learning Target

Laurie's Notes

Think and Grow: Modeling Real Life

This application allows students to work with the counting sequence to 30 in a familiar context, a calendar.

- **Preview:** "What information does a calendar tell us? Do you see familiar things on this calendar? Do you notice anything special?"

- ? **MP3 Construct Viable Arguments:** "There are three stickers on the calendar. Can you figure out what number each sticker is covering up? Tell your partner how you know." Give time for students to share their thinking.

- ? "What number do you think is under the flag sticker? Why? Repeat for the other two stickers and then share as a class.

- Check students' understanding of how to interpret dates on the calendar. Example: Point to June 17 and say, "Let's pretend that today is June 17. Can you tell me what yesterday was? What is a day that has not happened yet? Did we already have June 7?"

- "Look at the three dates that have stickers. On the calendar, circle the sticker that covers the *earliest* missing date. Underline the sticker that covers the *latest* missing date."

- **MP3 Critique the Reasoning of Others:** Ask a student to share which sticker they circled for the earliest date and why. "What do you think of [name's] reasoning?"

- ⊙ Students have done more than count to 30 by ones and tell a missing number. They are also interpreting less than and more than in the context of time, meaning days of the month. "How are you doing with counting to 30? Have you been able to figure out what number is missing?"

- ? **Supporting Learners:** Have students point to where the first day of the month is. Ask them to say the days of the month as they track with their finger. What is the first sticker they touch? What number name did they say as they reached each sticker?

Closure

- Point to a calendar in the classroom. Place your hand or a post-it note over the current date. Ask questions similar to those in the lesson.

11.2

Check out the
Dynamic Classroom.
BigIdeasMath.com

Laurie's Notes

Learning Target
Identify and describe triangles.

Success Criteria
- Identify a triangle.
- Tell why a shape is a triangle.
- Draw a triangle.

STATE STANDARDS
K.G.A.2, K.G.B.4, K.G.B.5

Preparing to Teach
Students have seen triangular shapes on road signs, crackers, and toys. They may have drawn a triangle to represent the nose or eyes on a face they have drawn. In this lesson, we focus on the attributes of a triangle: three straight sides, three vertices, and is a closed shape. See the chapter overview for more information about polygons and the interior of polygons.

Materials
- bendable straws
- Triangle or Not a Triangle Sort Cards*
- scissors and glue
- crayons

*Found in the Instructional Resources

Warm-Up
Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*

- Daily skills
- Vocabulary
- Prerequisite skills

Dig In (Circle Time)
Bendable straws are used to make a variety of triangles and non-triangles. See the chapter overview for tips for making straw models. The models are used for students to hold and then describe attributes of triangles.

❓ Place the straw formations shown in the center of the circle. "These are all triangles and these are not triangles." Give time for students to study both groups. "Tell your partner what a triangle is." Listen for three straight sides, three vertices, and it has to be closed. If you have a curved glow-in-the-dark wristband or necklace, it could be included in the sample of non-triangles.

- Solicit descriptions of what makes a triangle. Hold each of the non-triangle examples and ask why it is not a triangle.

ELL Support
Write the word *triangle* on the board with a slash between its word parts: tri/angle. Discuss the meaning of each part. Explain that the prefix *tri-* means "three." The word triangle describes a shape with three angles. Ask students if they know other words with *tri-*. Examples are tricycle (three wheels), tripod (three legs), trifold wallet (three sections).
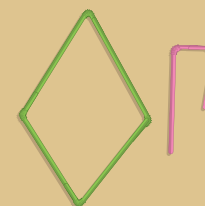
- **MP3 Construct Viable Arguments and Critique the Reasoning of Others:** Look around the room. Are there examples of triangles on the wall, clothing, books, and so on? Have students point to the object and explain why it is a triangle. Be sure to ask other students if they agree with the explanation or not.

❓ Teaching Prompt   ◉ Learning Target

Laurie's Notes

ELL Support

Have students work in groups to practice verbal language. Allow them to discuss the shapes they see and decide which ones are rectangles. Then have them share their ideas and explain why each shape they colored is a rectangle.

Beginner students may state "four L-shaped vertices" or "four sides."

Intermediate students may answer with simple sentences, such as, "It has four sides."

Advanced students may answer using a complex sentence, such as, "It has four sides and four L-shaped vertices."

Think and Grow

Getting Started

- Introduce the vocabulary card for **rectangle**. Although the rectangle is shown in a standard position, you should rotate it and say, "It is still a rectangle even when I turn it." Students may refer to each differently, calling one wide and the other tall. Be sure to show other orientations as well, such as tilted.
- Add the rectangle to your anchor chart.
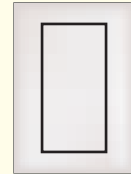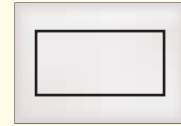
Teaching Notes

- There are three exercises, each with the same direction line.
- ❓ **Model:** "What do we call the yellow shape?" rectangle "What makes it a rectangle?" It has 4 sides and 4 vertices. Use your thumb and index finger to make the L-shape that Descartes is thinking.

- **MP3 Critique the Reasoning of Others:** Tell your partner why each of the other shapes is not a rectangle. Circulate and listen to students' conversations. Ask different students to share what their partner said, if they agree or not, and why.

- Have students color any rectangle on the page. "What are we looking at to decide if the shape is a rectangle?" This question helps to remind students about the attributes of a rectangle.
- When students finish, ask questions about why they did not color a particular shape, such as the rhombus. Also, ask why they did color the second shape (a square) in the bottom row.
- **Supporting Learners:** Orientation has a huge influence on student's spatial reasoning. Suggest that they turn their paper and look at a shape again.
- ◎ "What helps you decide if a shape is a rectangle? Tell your partner." Explain to students that they are explaining their understanding of the first two success criteria.

Laurie's Notes

Think and Grow: Modeling Real Life

This application allows students to show their understanding of partner numbers for 8 and writing the associated addition sentence.

- **Preview:** Have students discuss what they see in the picture. "Have you written with sidewalk chalk? What games can you play on a sidewalk?" Students may mention sidewalk safety.
- Read, "You have 8 pieces of sidewalk chalk. Some are red and some are blue." Point to the top picture and ask students to color some chalk red and some chalk blue.
- **? MP3 Construct Viable Arguments:** "[name] colored 2 red. How many did [name] color blue? How do you know? Tell your neighbor." Call on several students to share their reasoning.
- **?** "What addition sentence did [name] write?" Collect responses and then have [name] share their work.
- **? Connection:** "What would a number bond look like for [name's] addition sentence?"
- Students need to show another way to show how to make 8.
- ◎ Use a whiteboard to show 3 red counters and 4 yellow counters. "Tell your partner an addition sentence for this picture and how you know your addition sentence is correct."
- **Supporting Learners:** Some students may need additional work writing partner numbers in a number bond. Display the anchor charts from Chapter 5 and use the Number Bond Writing Instructional Resource.
- **Supporting Learners:** Use two colors of linking cubes to make a train of 8. Students point and count how many of each color and write this in the addition sentence. "How many in all?" If students need to start counting from 1, they do not understand partner numbers or counting on from the greater number. These students need additional work with counting and finding *how many in all*.

Closure

- Hold up 2 fingers on one hand and 4 fingers on the other. Ask students to tell how many fingers in all. Then they write the addition sentence _____ = _____ + _____.

ELL Support

Check for understanding of the first exercise. Have students show hands to identify themselves and hold up the appropriate number of fingers to answer questions about each drawing. Continue with additional questions using the same pattern if necessary. Repeat for the second exercise.

1. Who drew one red chalk?
2. If there is one red chalk, how many blue chalks are there?
3. Who drew two red chalks?
4. If there are two red chalks, how many blue chalks are there?
5. Who drew three red chalks?
6. If there are three red chalks, how many blue chalks are there?
7. Who drew four red chalks?
8. If there are four red chalks, how many blue chalks are there?

Laurie's Notes

Think and Grow: Modeling Real Life

This application allows students to count to 20 and write the amount of objects they count.

- **Preview:** "Tell your partner what you see in the picture." Not all students will understand that the brown area is underground. Be sure they can tell the difference between the tree roots and the worms. Students may want to tell a story about digging worms, being stung by a bee, or picking flowers.
- "I want you to count the bees that are flying in the air and the worms that are in the dirt. Tell your partner your strategy for counting the bees and worms."
- **MP3 Construct Viable Arguments:** "Do all of the worms have to look exactly alike to count them as a worm?" We want students to start reasoning about what they are counting and understand that the objects don't need to be identical to count them in a group. Their fingers are not identical and we say we have five fingers.
- **Extension:** Students can count the red tulips and write the amount. Which group has the most, bees, flowers, or worms? Which has the least?
- **Extension:** Ask how many more bees are needed so there is the same number of bees as worms.
- "You counted to 20 today and you learned to write the number 20! Use your thumb signals to show how confident you are in counting to 20. Now show me how good you think you are at writing the number 20."
- **Supporting Learners:** Place you hand over the student's to model a strategy for counting the objects. Perhaps move in a horizontal direction and then count the next row of objects.

Closure

- "Look around the room. Where do you see the number 20 written?"
- "Let's tap our feet for each number as we count to 20." When you finish, have students trace the number 20 in the palm of their hand.

Laurie's Notes

Think and Grow: Modeling Real Life

This application allows students to show their understanding of two- and three-dimensional shapes. They can distinguish between flat and solid shapes.

? Preview: "What do you see on this page? Do any of the objects look familiar? Do you know the names of any of the flat shapes?"

- Remind students that they are looking at the whole object, not just a part of the object. Use the block as an example. "The shape on the side of the block is a square. I want you to look at the whole block, not just a part of it."
- Read the first part of the directions. Look for the solids first and circle them. When students have finished have them look for the shapes that are flat and draw a rectangle around them.
- **MP3 Construct Viable Arguments:** Display the page for students to see. Ask different students to share how many solids they found. They may have circled the bed because it is not flat. You want to hear their reasoning. Repeat for the flats. Students may circle the shelf on the wall reasoning that it is pretty flat.
- "You have identified flat and solid shapes. Can you explain to your partner what makes a shape two-dimensional? What makes a shape three-dimensional?" Students should be able to identify shapes in the classroom that are flat and solid.
- **Supporting Learners:** Ask students what they think various shapes are in the picture. How they are viewing, or seeing the object may be different from what you would expect. For example, if they have not seen a small megaphone or cone before, they will not know how to interpret the object on the shelf above the pillow.

Closure

- Hold up some of the objects from circle time. Have students hold up three fingers for three-dimensional and two fingers for two-dimensional.

ELL Support

Check for understanding of Lesson 12.1. Ask students to use their decks of number cards and hold up the appropriate number. Ask them the number of solids they found, then the number of flats.

Laurie's Notes

ELL Support

Check for understanding of Lesson 13.2. Have students use a thumbs up to signal *longer*, a thumbs down to signal *shorter*, and a thumbs sideways to signal *same length*.

1. In the first picture, did you draw a shorter or longer string?
2. In the second picture, did you draw a shorter or longer string?

Think and Grow: Modeling Real Life

This application allows students to demonstrate their understanding of longer and shorter. They draw to show how they know.

? Preview: "What do you see on this page? Have you put beads on a piece of string before? What do you notice about the string in the picture?" Students should observe that the string is straight.

? MP1 Make Sense of Problems: Show students two pieces of string. "Can you compare the lengths of these two pieces? Tell your partner." Students need to understand that both objects need to be roughly straight in order to compare them. "So if we want to draw a string that holds fewer beads, how should we draw the string?"

• "I want you to draw a string that will hold fewer beads." Suggest that they plan before they start to draw. "Tell your partner what you are thinking. How do you know the string will hold fewer beads?"

• "On the bottom picture I want you to draw a string that will hold the same number of beads as the string shown." Again, remind

? MP3 Construct Viable Arguments: Display students work under a document camera or have them hold their picture up. "How do you know your string will hold fewer (the same number of) beads as the string shown?" Ask other students if the explanation makes sense and why.

Indicator 2g.ii - The Teaching Edition encourages teachers to ask probing questions to engage students in constructing arguments and analyzing the arguments of others.

two pencils of different lengths and color in a horizontal fashion. "Which pencil is longer/shorter?" Hold the same pencils vertically. "Which pencil is taller/shorter?"

◉ "You have compared the lengths of two objects. Sometimes you had actual objects that you held and compared. Other times you used your eyes and looked at pictures of two objects. Are you pretty good at comparing the lengths of two objects?"

• **Supporting Learners:** Students can build two linking cube trains that are different in length and identify the longer/shorter train.

• **Extension:** "If the string at the top holds 7 beads, estimate how many the string you drew would hold."

Closure

• Hold up an object such as a board pointer or a pencil. "Look around the room. Tell your partner something you see that is longer than the pointer. Shorter than the pointer."

13.7

Check out the Dynamic Classroom.

BigIdeasMath.com

Laurie's Notes

STATE STANDARDS
K.MD.A.1

Learning Target
Identify the measurable attributes of an object.

Success Criteria
- Decide whether an object has a given attribute.
- Give an example of an object that has a given attribute.

Preparing to Teach
This last lesson takes student's learning deeper. They have compared the length, weight, and capacity of two objects. Now they are shown an object and need to decide what attribute(s) are measurable. This can be confusing, especially with objects such as say a bathtub. It has a length, weight, and capacity. For that reason, we try to show common objects that students will be familiar with and that will strongly suggest a measureable attribute.

Materials
- collection of objects
- Measurable Attribute Sort Cards*
- scissors

*Found in the Instructional Resources

Dig In (Circle Time)
Students hold objects and describe one measureable attribute (length, weight, capacity) and one non-measureable attribute (color, material, softness). Use the collection of objects that you used during the Dig In in Lessons 13.4 and 13.6.

- Review length (height), weight, and capacity and how linking cubes or water were used to measure each. "There were other attributes that we did not measure, like color or material."
- Give each student an item that has been used in an earlier Dig In.
- ❓ "If you can measure your object using length, hold it up." Pause. "Take a look around. Do you agree with all the objects you see held up?" Answers vary. If a student questions an item, have the holder explain why the length can be measured.
- Repeat for weight and capacity. Most students will (should) hold up their item for weight. This is a good discussion.
- "Now tell me an attribute your object has that we did not measure." Are students able to distinguish non-measureable attributes?
- ◉ "Today we are going to decide if an object can be measured by length, weight, or capacity. You may decide there is more than one way we can measure an object."

Warm-Up
Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*
- Daily skills
- Vocabulary
- Prerequisite skills

ELL Support
Review the words used to compare length, height, and weight. Say shorter, longer, taller, heavier, and lighter and have students repeat. Have them use their vocabulary cards. Ask which words they would use to compare height and have them hold up the appropriate cards. Do the same for length and weight.

❓ Teaching Prompt   ◉ Learning Target   Page 65 of 70

Name _____

Equal Groups **2.1**

Learning Target: Show and tell whether two groups are equal in number.

Explore and Grow
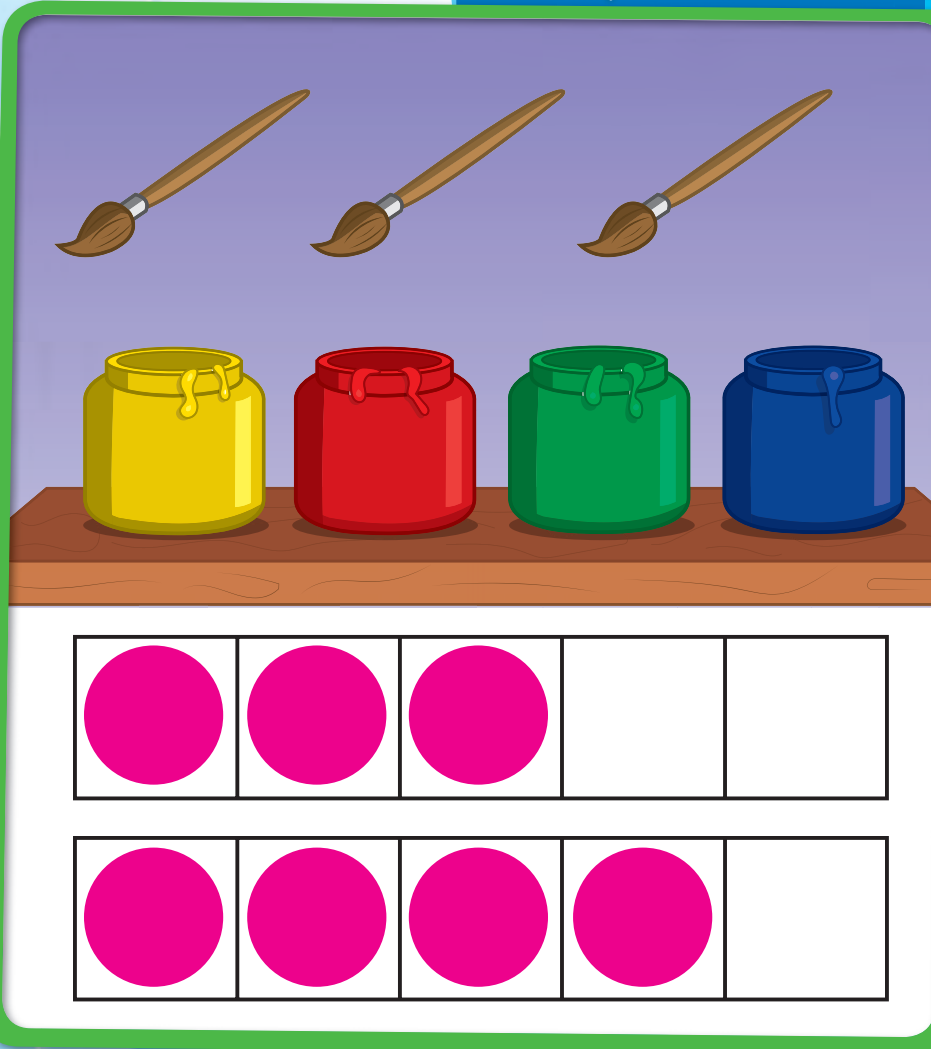
Directions: Use counters to show the number of paintbrushes. Use counters to show the number of paint jars. Is there a paintbrush for each paint jar? **no**

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fifty-nine 59

Explore and Grow

- Students count the number of paintbrushes and jars using counters. Use the red side of the counters to cover one group and the yellow side of the counters to cover the other group. Push red and yellow counters together to find partner

? Turn and Talk: "Is there a paintbrush for each jar of paint? How do you know?" Listen for how students are deciding that the quantities are not the same.

the same amount or a thumbs down signal when the groups are not the same amount.

5.2

Learning Target

Use number bonds to show the parts and the whole for numbers to 5.

Success Criteria

- Model putting together the parts to show the whole.
- Model taking apart the whole to show the parts.
- Use a number bond to show the parts and the whole.

Warm-Up

Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*

- Daily skills
- Vocabulary
- Prerequisite skills

ELL Support

Explain that *to bond* means "to connect more than one thing." A bond is a type of connection that links things. A line is used for a number bond. Number bonds connect the numbers that represent parts of a group to the numbers that represent their whole group.

Laurie's Notes

STATE STANDARDS
K.OA.A.1, K.OA.A.3

Preparing to Teach

We introduce students to a number bond to show how to put together and take apart the parts and the whole. A number bond is an organizational tool that shows the relationship between the whole and its parts and corresponds to the additive relationship of composing.

The number bonds in this lesson will be oriented with two circles at the top (parts) and one circle below (whole). New orientations for the number bond are introduced in later lessons.

Materials
- two-color counters
- linking cubes

Dig In (Circle Time)

The circle time today models identifying partner numbers and the whole. You want to *put together* (compose) the partner numbers to make the whole, and *take apart* (decompose) the whole into the partner numbers. As you model with linking cubes, students can use their fingers.

? Show a group of 1 and a group of 3 linking cubes. "If I *put together* these parts, what is the whole?" 4 "Use your fingers to put 3 and 1 together."

? "If I *take apart* the number 4, what partner numbers could be hidden?" Have volunteers model their thinking with the linking cubes. When the parts 3 and 1 are demonstrated, say "So we can put together the parts 3 and 1 to make the whole 4, and we can take apart the whole 4 to make the parts 3 and 1." You are drawing attention to the inverse relationship of putting together and taking apart.
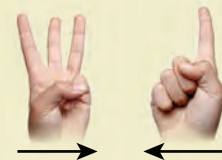
- Use an anchor chart to review the different sets of partner numbers for numbers within 5 as students model each set using their fingers.
- **Supporting Learners:** Students develop their conceptual subitizing skills by using counters to show each set of partner numbers for 5 on a five frame.
- **Supporting Learners:** Students draw a linear array of dots up to 5 on their whiteboard. Use a pencil to review the different sets of partner
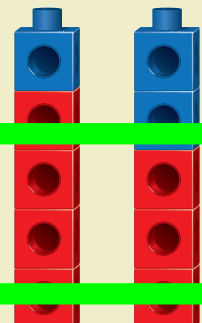
? **Supporting Learners:** Show students the two linking cube towers. "How are the towers similar? How are they different?"

Laurie's Notes

Think and Grow

Getting Started

- The example at the top shows a ten frame and a number path that model a particular addition sentence for a sum of 10. The students have seen the linking cube model for partner numbers for 10. You want them to also be familiar with the ten frame model.
- Display the anchor chart made earlier that shows number pairs for 10.

Teaching Notes

- **?** **Model:** "What number is shown in the ten frame? What number do you add on to 6 to make 10?" Have students talk with their partner. "Color four more counters to show you have 10. Complete the addition sentence."
- Ask questions about the number path. The start is 6. When we add on 4 we end at 10. The partner numbers 6 and 4 make 10.
- ◉ Have students try the next two problems. Remind them that they are going to write an addition sentence about partner numbers for 10. Start by looking at the ten frame. How many more are needed to make 10?
- Circulate as students complete the two problems. Are students writing the missing part before they color the additional

- **?** "How do you know what you need to add on to make 10?" Listen for students to mention the boxes in the ten frame that are empty. Listen for students to say the partner number for 10. Watch for students who look at their fingers to decide how many more to make 10. All of these are responses you may hear so continue to ask if there are different ways they think about how to make 10.

- **Extension:** Ask students to think of a word problem to go with any of the addition sentences. You can give them counting bears or other small objects to act out their word problem.
- ◉ Have students use their thumb signals to show how well they are doing with the learning target.

Indicator 2g.ii - The Teaching Edition encourages teachers to ask probing questions to engage students in using what they have learned to construct a logical argument.

9.3

Learning Target

When told a number, count that many objects.

Success Criteria

- Name each number to 20.
- Identify a group with a given number of objects.
- Draw a given number of objects.

Warm-Up

Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*

- Daily skills
- Vocabulary
- Prerequisite skills

ELL Support

Review counting to twenty by asking students to count aloud. Have the first student start with the number one, then each subsequent student state the following number. When they reach twenty, have the following student start again with one.

Laurie's Notes

STATE STANDARDS
K.CC.B.4a, K.CC.B.4b, K.CC.B.4c, K.CC.B.5

Preparing to Teach

To prepare for ordering and comparing numbers, students first demonstrate their understanding of counting a collection of objects and determining how many there are. Also, can students look at two or three arrangements of objects and decide which group has a given number of objects? Continue to discuss that the order in which we count objects, or the way objects are arranged, does not change the number of objects in the group.

Materials

- collection of objects
- linking cubes

Dig In (Circle Time)

Prepare collections of 11–20 items that can be counted by a group of students. Objects can include books, spoons and forks, linking cubes, or pencils. Include a large number of something small (19 paper clips) and a small collection of something big (11 paper cups). Distribute the items in a box with low sides or even a cookie sheet. Note how students arrange and count the items.

- Arrange students in small groups so that each group has items to count.
- "You have a group of items to count. Talk with your group about different strategies you can use to count how many items you have. How will you know your count is correct?"
- **?** **MP4 Model with Mathematics:** There are different arrangements students might use. They might remove the items from the box as they count. Each student might take 2–3 item and then decide
- **?** Ask each group to announce how many items they have, what their strategy was, and how they know they are correct.
- Focus on the arrangement of paper clips and paper cups. "Which group has more? How do you know?" You want to make sure the size of the items doesn't influence the count. Students should be able to distinguish between a group of 11 and a group of 19.
- If time permits, rotate the boxes and repeat the counting.
- **⊙** "Counting tells us how many there are in the group. If we arrange them in different ways, does the amount change?" no "Does the order we count them in matter?" no "We are going to identify groups with a certain number of items, like find the box that has 19 items."

? Teaching Prompt   **⊙** Learning Target

13.3

Check out the **Dynamic Classroom.**
BigIdeasMath.com

Laurie's Notes

STATE STANDARDS
K.MD.A.1, K.MD.A.2

Learning Target

Compare the lengths of two objects using numbers.

Success Criteria

- Use linking cubes to compare lengths.
- Use numbers to compare the lengths of two objects.

Warm-Up

Practice opportunities for the following are available in the Resources by Chapter or at *BigIdeasMath.com.*

- Daily skills
- Vocabulary
- Prerequisite skills

ELL Support

Teach the words toothbrush, bow, dental floss, and brush by pointing to each and saying its name. Have students repeat. Explain that they will compare the length of each to a linking cube train made from four linking cubes.

Preparing to Teach

This lesson is very similar to the last in that students are comparing the length of 2 objects. The difference is that the lengths are associated with a number. In this case, the number of linking cubes in a train. Alternately, they could use blocks.

Materials

- linking cubes
- crayons

Dig In (Circle Time)

Students compare the shoe cut-outs from yesterday to a linking cube train of 10. They find objects in the room that are longer/shorter than 10 cubes long.

- ❓ "Make a linking cube train that has 10 cubes in it." Pause. "Is your shoe cut-out longer, shorter, or the same length as your 10-cube train?" Observe how students are comparing.
- ◉ "Find something nearby that has a length that is longer than your 10-cube train. Stand next to it." Ask several students how they know their object is longer than a 10-cube train. Repeat for an object shorter than a 10-cube train.
- Return to the circle.
- "Make a linking cube train that is the same length as your shoe cut-out." Some students will add cubes, some will remove cubes, and some have others about length.
- ❓ "Compare the length of your linking cube train with your partner's." Observe how students compare lengths. "Who has the longer/shorter linking cube train?" Answers will vary; they could be the same length.
- ❓ **MP2 Reason Abstractly and Quantitatively:** Now, have them compare their shoe cut-out. "If your linking cube train is longer than your partners, what else do you know?" The same relationship (longer/shorter) should be true for the shoe cut-outs. Prompt with leading questions if necessary.
- ◉ "Explain how you use linking cube trains to compare lengths of 2 objects." Listen for making trains that are the same length as the 2 objects.

❓ Teaching Prompt   ◉ Learning Target