Kindergarten Math Curriculum

Appendix

Unit 1

Lesson 1-3 Gotcha Game. This is a game in which children catch" you making counting mistakes, such as,

- Saying the number words in the wrong order.
- Not saying one number word for each object you point to.
- Saying the wrong number for the total of a set.

Have the students signal with a "thumbs up" if the teacher is counting correctly, and switch to a "thumbs down" when a mistake is made. Have the child explain your mistake and model the correct way to count. Repeat with different counting errors and different numbers of objects. If children seem ready, vary whether the objects are lined up or scattered.

Lesson 1-9 Number Stations. This activity will be completed in two days. You will put 4 different manipulatives out on four tables. Students will travel to 2 tables each day. The teacher will walk around, observe and facilitate discussions.

Table 1- two different colors of unifix cubes

Table 2 five frames with 2 different colors of Ellison small circles

Table 3 toothpicks, glue, and squares of black construction paper

Table 4 pattern blocks

Show the children the number stations you have set up and assign or have them choose a station. Direct the students to use the material to show 5 in different ways. Encourage the students to describe their creations and to make sure one another's creations show 5 items by pointing and counting them aloud. As the teacher walks around encourage the students to discuss their representations. Invite the students to describe, count, and compare their creations. Use these discussion prompts:

- How do you know that this creation shows 5?
- Wow! I see you put 3 red and 2 blue together to make 5. Can you describe another creation using the number of colors?
- How are these two ways of showing 5 alike? How are they different?
- How can these look different but still be 5? How do we know? How can we check?
- Is this still 5 if I spread them out? Push them together? Take them apart? How do you know?

Lesson 1-11 Five Frames

Copy one five frame for every child on cardstock and laminate. Remind the students of the many different ways they showed 5 in the previous number stations. Today they will show numbers in different ways using a five frame. Give each child a five frame and five counters. Ask: *Why do you call this a five frame?* Tell the students that they can show different numbers on their five frames by placing no more than 1 counter per square. Have the children show you five on the frame. Ask: *How do you know you have 5?* Emphasize that when the frame is full, they know there is five. Have the students clear their five frames and show the number 4. If most children make similar representations, encourage them to show 4 in different ways. If necessary, show and discuss other groupings. Invite children to show and compare their representations and model your own thinking and observations. Support children's descriptions by modeling or providing sentence frames. For example: *I see_____ here and_____ here and that makes_____.*

Possible questions to ask:

- How do you know it is 4?
- How is this 4 different from your 4?
- What is the same about all our ways of showing 4 on a five frame?
- Why did you decide to make your 4 that way?

Conclude lesson with teaching the students how to play the following memory game. This game can be put in an independent math center once the students know how to play the game.

Make 5 Memory

Materials:

- One set of **Make 5 cards** (found in file on share drive)
- Counters (to support kids who might need to use the manipulatives)

Directions:

- Mix up the cards and lay them face down in a 3 by 4 array.

- Player 1 turns over two cards. If the cards make a 5, the player keeps the cards. If they don't make a 5, the players' turns the cards back face down in the same spot. Matching cards can be two numerals, two dot cards, or a numeral and a dot card–as long as they make 5.
- Play continues until all matches have been claimed.

Lesson 1-15 Shape explorations

Materials: square tiles

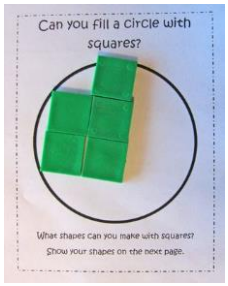
Pattern blocks

Black line masters

Day 1

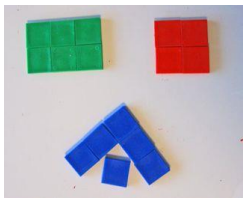
Can you fill a circle with squares?? What shape can you make with square tiles?

For this problem, give each student a blackline master of a circle and some colored square tiles. Challenge them to fill the circle completely with the square tiles. They cannot overlap the tiles and they must cover the circle completely--no white spaces left. They will try and try and try--but despite their best efforts, they are unable to complete the challenge.



The most important part of this problem is the discussion that occurs during and afterwards. *Why can't they fill the circle with the square tiles?* They will inevitably come to the conclusion that they cannot fill the circle with squares because squares have straight edges and circles have a round edge.

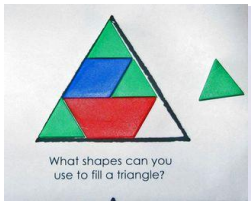
Then challenge the students to use the square tiles to see what shapes they are able to make. They quickly discover that they can make different sizes of rectangles and squares. And they try and try to make triangles...and some think they actually do.

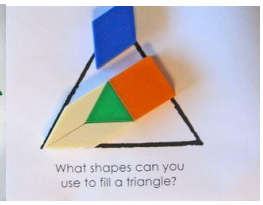


This leads to some more really good discussion...*Can you make a triangle? Why or why not?* Of course the answer is no--and the reasons are a little too complicated for kindergartners to understand. The purpose of this activity is for the kids to explore and wonder...they will start to see that the shape of a square's corners do not fit in a triangle's corners (unless it's a right triangle). They are building a schema upon which they will add to in the coming years as they learn more and more about geometry!

Day 2

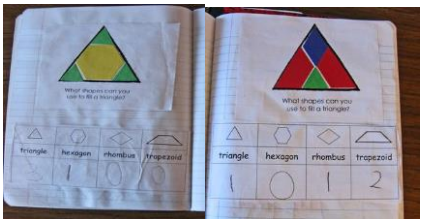
What shapes can you use to fill a triangle? Provide the students with a blackline master of a triangle and pattern blocks. Challenge them to fill the triangle. The same rules apply--you cannot overlap shapes and there can be no white spaces remaining.





Give them all the pattern blocks--even the orange squares and the skinny white parallelograms that won't fit. Let them try and try until they figure out that, because of the shape of the corners (the angles), they won't fit.

This lesson can be repeated during independent math group time with paper pattern blocks. The students can fill out a chart with the number of each shape they used.



Lesson 1-17 Ten Frame Explorations

Materials: five frames

Ten frames

Manipulatives

Show the students a five frame. Ask: What is this? How do you know it is a five frame. Have a student put 5 manipulatives on the frame. Then line up 2 five frames to make it look like a ten frame. Does anyone know what happens when there are two five frames? If you do not get a correct response, tell the students that two five frames make a ten frame because 5+5=10. Demonstrate this concept by putting manipulatives on and count the 10 objects. Show the students a ten frame. We can use a ten frame to make more numbers. Model different numbers, and focus on the group of 5 and some more. For example, 7 is five and 2 more. Give students individual ten frames. Ask them to build numbers up to and including 10, once again focusing on a group of 5 and additional blocks.

Lesson 1-18 Describing Shapes

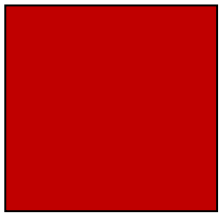
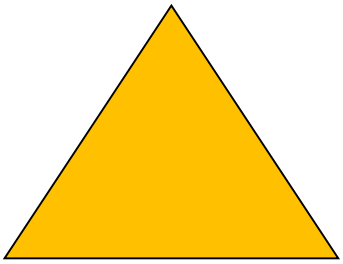
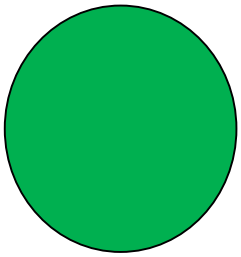
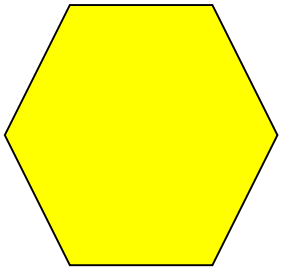
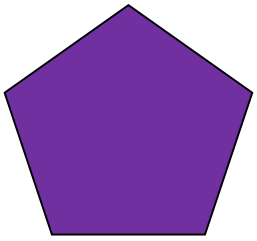
Materials: shape cards

Display shape cards for the students to see. Show card H and have them describe the shape. Have the students point to the part they are describing. If students cannot use words, encourage them to use their hands, bodies, or gestures.

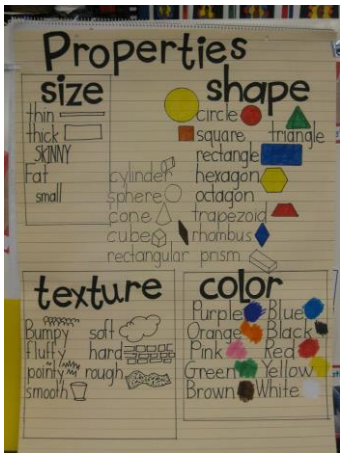
As the children share, make a list of the words they use to describe shapes. Probe to elicit terms such as curve/ curvy, round, straight, line, side, corner, pointy, fat wide, narrow, open, closed.

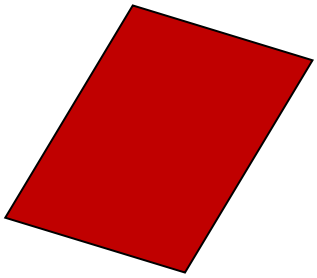
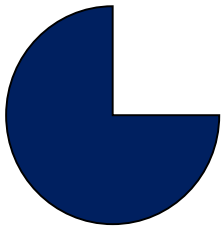
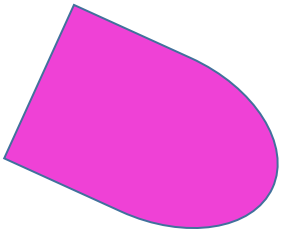
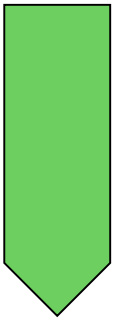
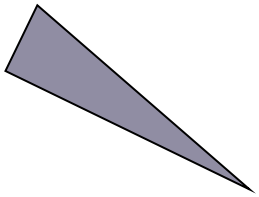
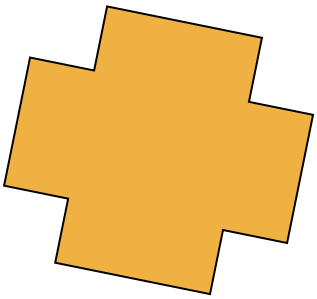
Allow each child in the group to choose one card. Take turns going around the group and allowing one student to use words to compare their shape. Questions to consider and discuss with the group:

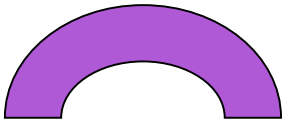
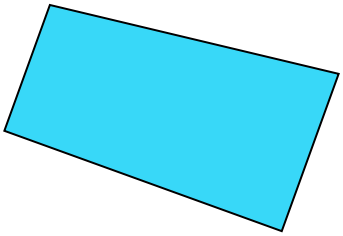
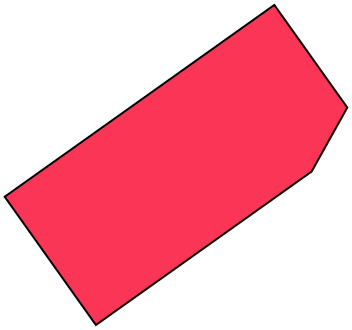
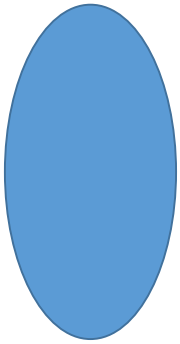
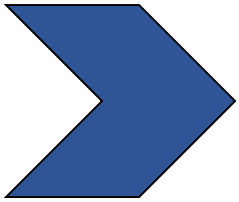
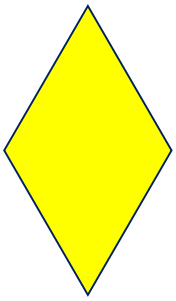
- Does your shape remind you of anything?
- Do you see anything in the classroom that reminds you of your shape?
- Why do you think that object looks like your shape? How are they alike? How are they different?

A 	**B** 
C 	**D** 
E 	**F** 

Conclude by having the class come together and create a Describing Words Anchor Chart. Be sure to include words that describe size, shape, and color. The following is an example that may be used. Do not include 3 dimensional shapes on this list. There is a mini book on share drive for a follow up independent math activity.



G 	**H** 
I 	**J** 
K 	**L** 

M 	**N** 
O 	**P** 
Q 	**R** 

UNIT 2

Lesson 2-2 Roll for 5 game

Materials:

- recording sheet for each player
- number cube with the 6 replaced by a 0 (put a small sticky dot with a 0 over the side of the number cube with a 6)
- Two different colors of pencils or crayons

Directions:

- Player 1 rolls the number cube and finds the row that uses that number to make 5. For example, if I roll a 2, I look for the 2 + __ = 5 row.
- Using one color, fill in dots on the 5-frame for the number rolled. In my example, I would color in 2 circles.
- Using the second color, fill in the rest of the dots.
- Complete the number sentence.
- Play passes to Player 2.
- If, on your turn, you roll a number you have already used (for example, if I roll another 2), you color in a smiley face at the bottom of the recording sheet. The object is to get as many combinations for 5 as you can before coloring in the three smiley faces.

For fast finishers, put blank 5-frames in the workstation with 2-color counters. After students play the game once, they can continue to practice combinations for 5 by rolling the number. Revisit this activity again during independent math stations.

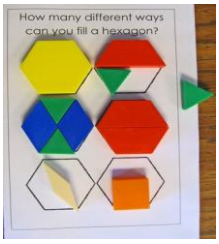
Name: _____ **Roll for 5**

	0 + __ = 5
	1 + __ = 5
	2 + __ = 5
	3 + __ = 5
	4 + __ = 5
	5 + __ = 5

Lesson 2-5 Composing Shapes

How many different ways can you fill a hexagon?

Give the students a blackline master with several hexagons on it and pattern blocks. Challenge them to fill the hexagons in as many ***different*** ways as they can. Let them figure out that the orange square and skinny white parallelogram aren't going to fit.



This is a challenging activity, because the kids must find ***different*** ways to fill the hexagons. They get 2 or 3 quickly, but then they get stuck. It pushes them to really think! You can create a class chart that shows all of the different ways to make a hexagon. You may also give this activity again as an independent math activity. Give student papers of the pattern block shapes and have them glue in the pattern blocks that will make a hexagon.

Lesson 2-6 Match Up with Dot Cards.

Materials: dot cards copied on card stock and laminated (found on share drive).

Use the dot cards. Begin with 12 cards or 6 pairs. This is a memory game, and the goal is to turn over two cards or a pair that have an equal, or the same number of dots. Show the students two different "three" cards. Ask the students to compare the cards. Point out that even though both cards may look different, each card has three dots, so they are equal and count as a match. Follow these rules:

1. Deal the cards face down in rows.
2. Turn over two cards. Say the number of dots on each card. Encourage the students to use sentences to describe their cards. For example, *I see 4 dots on this card. I see 3 dots on this card.*
3. If the number of dots are equal, take the matching pair. If the cards don't match, turn them face down in the same spots.
4. The next player turns over two cards, says the numbers and decides whether they are equal.
5. Play continues until all matching pairs are found.

Conclude by having the students explain to a partner how they can tell whether the cards have the same number of dots.

Lesson 2-7 Top It with Dot Cards

Materials: prepared dot cards

Today the students will play another game using dot cards. This game is called Top It.

Introduce top it by modelling the game with a child as your partner. Review the following rules:

1. One partner deals the cards into two facedown stacks.
2. Players turn over their top cards, and then say and compare the numbers of dots on both cards.
3. The player whose card has more dots takes both of the cards.
4. If the cards have an equal number of dots, both players turn over another card and the player with the greater number of dots takes all four cards.
5. Play continues until one partner has all of the cards, or time runs out.

As children are playing the game, ask the students: *"How do you know which card has more? How can you be sure?"* Discuss the students' strategies.

Lesson 2-8 Pocket Problems

Before you begin, prepare a "pocket" for counters; a pocket from old jeans mounted on cardstock, a cloth bag, or a small box decorated with a pocket. Make sure counters can easily slip in and out of the opening. It should be durable enough to use frequently in later lessons.

Show the children the pocket and give each child ten counters. Explain that they will use the counters to represent and solve pocket problems.

1. Show 3 counters and place them in the pocket.
2. Show another counter and place it in the pocket.
3. Direct the students to use their counters to show how many are in the pocket now.
4. Ask a child to take the counters out of the pocket and count them to see if he/she is correct.

Repeat several times, varying the staring number of objects in the pocket and the number added to or taken away from the pocket. Use five or fewer counters as your starting number and only add or take away one or two counters, at first. Each time, have the students use their own counters to show how many are in the pocket.

Divide the students into pairs and give each pair counters and an envelope to serve as the pocket. Have one partner begin by posing a pocket problem, and the other partner use counters to represent and solve the problem. Then have the partners reverse roles. Encourage them to show, rather than tell, what they are doing, just as you did when you modelled the problems.
Conclude by asking the following questions:

- Are there more or fewer counters in your pocket when you add counters to it?
- Are there more or fewer counters in your pocket when you take counters out of it?
- How does this help you think about whether your answers to the pocket problems make sense?

Lesson 2-11 Ten Frames

Materials: ten frames and counters

Remind students that a ten frame is 2 five frames put together. Give each student a ten frame and ten counters. Tell the students that just like five frames, you can represent numbers on a ten frame by placing counters in spaces, using no more than one counter per space. Have the students use their

counters to show the number ten on the ten frame. Ask: How do you know you have 10? Have the students clear their ten frame and show the number 5. Invite them to share their representations highlighting a variety of arrangements that show different ways to make 5 (ex. 2 and 3). Next ask the students to represent 6 in at least 2 different ways. Observe as they create representations of 6 and have volunteers share a variety of examples. Ask the following questions:

- How do we know it is 6?
- How can both of these representations show 6?
- How is this 6 different from your 6?
- How many spaces are always empty when 6 spaces are filled? If we filled those spaces, how many would we have? How do you know?

Conclude by showing a representation of 9 on the ten frame. Have the children discuss with partners two different ways to figure out the number of dots, such as counting by ones, counting back from 10, or seeing the dots in groups. Highlight the strategy of counting back 1 from 10.

Lesson 2-13 Counting Collections (Whole Group Activity)

Materials: *Ten Little Fish* by Audrey Wood, blue construction paper, and counters. You will need 6-15 counters in a bag for each group of partners and a piece of blue construction paper for each pair of students.

Begin by reading *Ten Little Fish.* Stop on each page to count the fish chorally as a class. Discuss the difference between counting fish that are **lined up** and counting fish that are **scattered** (not in a line or circle). Ask for students' ideas for keeping track when counting the scattered fish.

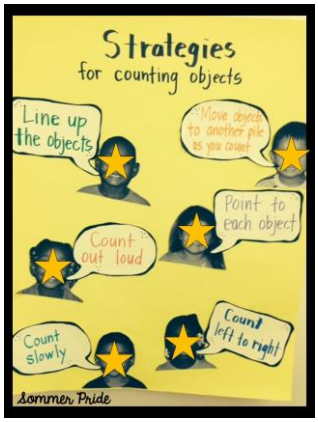
Gather the students in a circle to create a pretend "pond." Choose seven children to be the fish and have them sit in a row in the middle of the pond. Remind the children of "*Gotcha*," the game in which they show "thumbs up" if you count correctly and "thumbs down" if you make a counting mistake. Tell the students to use their thumbs to show whether you count the fish correctly. Count the children in the middle one at a time, gently tapping each child as you count. Ask: *How many fish are in the pond?*

Have the same seven children to sit in a small circle within the class circle. Count the children, intentionally miscounting by counting the first child a second time at the end. Ask a child who shows a

thumbs down to explain your counting error. Then ask*: Was it harder to count children when they are in a row or in a circle? Why?* Elicit the response that it is harder to count when students are in a circle because you might forget where to stop. Point out that although the seven children are sitting in a different arrangement, the number of children has not changed. There are still seven children. Discuss ways to keep track of where to begin and end counting, such as having the first child raise a hand to show where to start and stop or by moving children into a line. Count the group again with the class using the suggested strategies.

Next have the same seven children move so they are randomly scattered within the class circle. Have the class use their thumbs while you intentionally miscount the new arrangement in the pond. Ask a child to explain your error. Elicit strategies for keeping track of children while counting, such as having them stand when they are counted. Test children's strategies while re-counting the scattered group. Again, discuss why the total number does not change if the objects are simply moved around. Continue to help the class practice counting children in different arrangements if needed.

Distribute blue paper and a bag of counters to each pair of children. Demonstrate how to place the fish (counters) in the pond (blue paper) in different arrangements- scattered, in a circle, in rows, or in groups. Explain that one partner should arrange the fish in a pond and the other should count to see how many fish. Tell the partners to confirm each other's counts before trading roles.
Conclude by creating an anchor chart for counting strategies. The following is an example of a counting anchor chart, but you need to add mark each object on a paper off as you count.

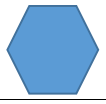


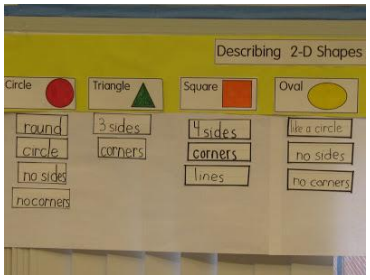
Lesson 2-13 Part 2. Estimation and One to One correspondence Model for students a systematic way to count objects. Review anchor chart. Use "I can count cards in small group to ensure that children are counting objects on a paper correctly. Students should mark each one as they count. This activity is found on share drive: "I can Count cards." Instruct students to cross out each one as it is counted.

Lesson 2-16 Classifying Shapes

Materials: pattern blocks, elmo, chart paper and sentence strips.

Using the elmo, project the shapes for the students to see. Have students name the shapes, and discuss how they are the same/ different. Tell the students that they are going to make a class chart to help them with the shapes. Then put up each shape one at a time, and ask children to name a characteristic of the shape. Put each characteristic on sentence strip paper, and create a tree diagram of the shapes for future reference. Use the following chart as a reference for the one you make with the students.

Triangle 	Square 	Hexagon 	Circle 	Rectangle 	Trapezoid 
3 sides Straight edges or lines 3 corners 3 angles	4 edges or lines All same length 4 corners 4 angles	6 sides Straight lines 6 corners 6 edges	Curved No sides or corners	4 sides or lines 2 long sides same length 2 small sides same length	4 sides No sides same length 4 corners



Lesson 2-17 Make 5 Go Fish

Commented [JW1]:

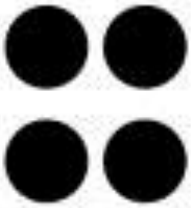
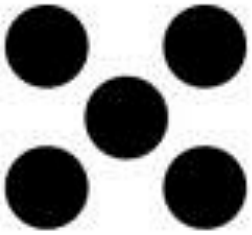
You will teach the students how to play the following game. This can be used in the future at independent math groups.

Materials:

- 2 sets of Make 5 cards (24 cards total for two players)
- Counters (to support kids who might need to use the manipulatives)

Directions:

- Mix up the cards and deal 5 cards to each player. The remaining cards are placed face down in the "pond".
- Players look for matches (combinations of 5) in their hands and lay down any matching pairs. As with the Memory game, pairs can be two numerals, two dot cards, or a numeral and a dot card.
- Players take turns asking the other player for a card that would match a card to make 5. For example, if I am holding a 2 in my hand, I might ask, "Do you have a 3?".
- If the asked player has the card, they must hand it over. The player receiving the card lays down the match and takes another turn.
- If the asked player asked does not have the card, he/she says, "Go fish", and the asking player takes a card from the pond.
- The game ends when one player runs out of cards. The player with the most cards wins.

0	1	2
3	4	5
		
		

UNIT 3

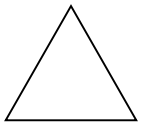
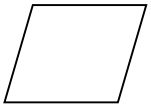
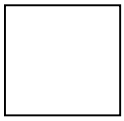
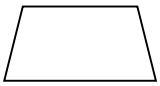
Lesson 3-1 Pattern Block Graph

Materials: handful of pattern blocks for each student, crayons, graph master

Place a handful of pattern blocks where the students can see them. Explain that you have removed the hexagons for this activity and you will return them to the set later. Have the students share ways they could sort the blocks. If no one mentions it, suggest sorting the blocks by shape and have the children help you do this. Ask*: How can we find out which shape is the most? The least or fewest?* Elicit the response of counting and comparing them. As you count each shape, line up the blocks to make it easier to compare them. Use think alouds to model comparisons and comparison language*: I see that there are more blue rhombuses than tan rhombuses. I see that there are fewer triangles than trapezoids.* Ask questions such as: *Which shape has the most/ fewest blocks? Are there more triangles or squares? How do you know?*

Explain that now the students will get their own handful of pattern blocks to graph. Show children the pattern block graph. Point out that the bottom row shows the shapes of the pattern blocks. Model how to organize the pattern blocks on the graph in the correct columns- one per box. Then demonstrate how to record the graph on paper by removing one pattern block at a time and coloring the box it was in with the color that matches the block. Direct the students to sort their blocks by shape, place the blocks on their graphing grids, and then color the boxes to create the graph. Have the students compare their graphs with a partner. Ask such questions as: *Which shape did you have the most/ fewest? How do you know? Who has more triangle? Who has fewer squares? How many more/ fewer? Do you and your partner have the same number of any shape?*

Conclude by asking why everyone's results were different. This activity can be used as an independent math center at a later date.

Lesson 3-2 Ten- Bean Spill

Materials: Laminated ten frames and ten frame recording sheet, two colored beans or counters, small cups, crayons

Display a blank ten frame and ask the students if they remember it. Count out a set of ten two colored beans or counters and point out the colors on each side. Reinforce the principal by asking*: How many beans do I have? How do you know? If I place ten beans on my ten frame, will there be empty spaces? Why or why not?* Place one bean on each space of the frame.

Place the beans in a cup, shake them, and pour them out. Sort the beans by color and count the beans in each group. Place the beans on the ten frame one group at a time, putting the beans of each color together. Ask: *How many (one color) beans do we have? How many of the other color beans do we have? How many beans do we have altogether? So, ___ and ___ make ten.*

Show the students how to record the combination by coloring the boxes on the ten frame recording sheet. Return the beans to the cup and repeat the procedure. Ask: *How is this combination different from the first one we did? How is it the same? How does the ten frame help us see and represent the combinations of ten?* Repeat the procedure a couple of times together as a group.

Give partners a blank ten frame, a cup of ten beans, a paper plate, crayons and two recording sheets. Direct partners to work together to spill, sort, and count the beans and to place them on the ten frame. After each spill, record the combinations on their recording sheet. Have the students repeat the procedure a couple of times. The teacher may write the numbers of the combinations down on the recording sheet as the student tells you them. Do not include any addition or equal signs at this point.

Conclude by asking students to share different combinations they found. Record these on the board. Help the students notice patterns in the combinations that add to ten. This can be repeated at independent math stations.

Ten frame recording sheets

Lesson 3-4 String and toothpick shapes

Materials: string cut at various lengths, toothpicks, construction paper

Refer to the anchor chart that was created with the two dimensional shapes. Review the describing characteristics of each shape. Provide the students with string, toothpicks, and construction paper. Encourage them to use the materials to create as many different shapes as they can. Ask the students to name and describe the shapes they create. Observe the students strategies.

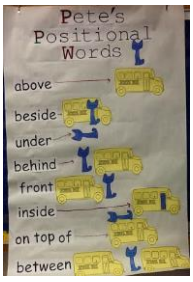
Conclude by asking: Could you use toothpicks to make every shape? Why or why not? How do you make a shape larger? Have the students glue their shapes to paper and dictate captions that name and describe the shape.

Lesson 3-7 Positional Words and Pete the Cat.

Materials: Story, *Pete the Cat: The Wheels on the Bus*, copies of Pete and the bus.

First, read book to my class so they could enjoy it. Or watch the accompanying video available on Teacher Tube. This may be done with the entire class. Next, use the illustrations in the book to discuss positional words. There is a list of questions found on the share drive that may be used. After this give students a copy of a Pete and bus to color (also found on share drive). Have the students color them and use them to demonstrate positional words.

Conclude by bringing the class together and create a positional words anchor chart. The following is an example you can use. There is also a positional words book on share drive for independent math groups.



Lesson 3-10 Comparing Representations

Materials: index cards showing different representations of 4, blank index cards, recording sheet, crayons

Prepare 4 index cards showing different representations of the number four. Display the cards for the class to see. The cards should be:

- Dot pattern showing four
- Ten frame showing four
- Picture of four fingers
- The numeral four

Ask: *What do you notice about all of these cards? What number do they all show?* Reinforce that the cards all show the number four in different ways. Ask: *How can these cards look so different but show the number 4?* After discussing the students' ideas, ask the students to come up with a different way to show four. Create new cards to illustrate the students' ideas. If a student suggests a representation that is identical to one on the display, create a card for it and discuss whether it is exactly the same or different from the others. Display all of the cards.

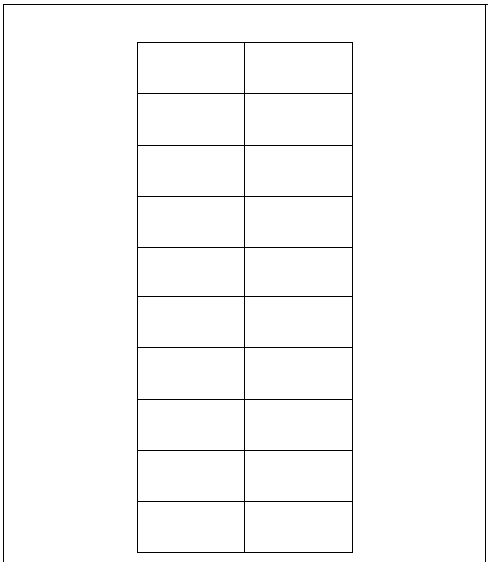
The students will work with a partner and create their own representations of a number. Show the recording sheet to the class. Explain that each student will show their assigned number four different ways- one representation in each section of their paper. A ten frame should be used for one of the representations. The students may choose to draw additional ten frames in other sections of the recording sheet.

Each partner will create four different representations of the same number and compare their work. Suggest that the students respond to the following questions together: *Do all representations show the same number? Are any different? Are any of the representations similar? How are they alike? How are they different?*

Assign each group a number between 5 and 10. Put the number on an index card. Walk around the room and observe as the children work. You may prompt discussions with the aforementioned questions.

Conclude by collecting the students' representations and discuss the activity. *Does anyone want to share something they did to represent their number?*

Number Representations Recording Sheet



Lesson 3-11 Comparing Representations

Materials: Student representations of different numbers from lesson 3-10.

This is an opportunity for students to reengage with the problem by analyzing and critiquing their own and other students' work in a class discussion.

Display students' work from the previous lesson. You could show each example to the whole class one at a time, or post around the room and visit each piece. Do not worry about any representations that are incorrect. They will be used as a learning tool. Use the following questions for a discussion:

- What number is shown here? How can you tell?
- How is this representation of the number similar to this one? How is it different?
- Which representation do you find the easiest to interpret? Why?
- Which representation is the hardest to interpret? Why?
- Are there any representations that do not match the number? How do you know? What would you have done to show this number?

Conclude by reviewing different ways to represent a number. You may wish to laminate and cut children's sheets into 4 sections to make representations cards for further explorations. Students can also use these cards to sort by number or type of representation. They can also use them to play: *Which number does not belong?* One player chooses three representations of the same number and one that is different: the other player decides which one does not match.

3-12 Spin a Number

Materials: spinner with numbers from 0-9, spin a number game board, game marker for each player,

In this activity, you will model how to play the spin a number game. This game can be utilized in independent math stations. The students will work in pairs. They take turns spinning the spinner and moving the correct number of spaces. The winner is the student who lands on the finish line with the exact count. Observe the students as they play, monitoring their ability to read the numbers on the spinner and to count and move the correct number of spaces.

Spin a Number Game board

Cut out and glue together to form a straight board. You may want to put this on a sentence strip and laminate.

START	**START**				
				FINISH	**FINISH**

Lesson 3-15 How Many More?

Materials: dice, ten frames, recording sheets.

This game is found on the share drive. You will teach a small group how to play the game, then observe partners playing the game. This game should be used at least twice a month until the end of the year during small group independent math stations.

One student is to roll a die, and count out that many objects onto a ten frame. The student will then count out how many more he/ she needs to make ten. In the beginning, some students may need to actually place another color manipulative on the ten frame to determine how many more are needed. Students can record their work on either blank ten frames, or the "I have" speech bubbles.

UNIT 4

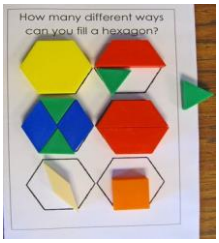
Lesson 4-1 Building Hexagons

Revisit lesson 2-5. Students will build hexagons with pattern blocks. Students will be able to build a hexagon at least 2 different ways without assistance.

Lesson 2-5 Composing Shapes

How many different ways can you fill a hexagon?

Give the students a blackline master with several hexagons on it and pattern blocks. Challenge them to fill the hexagons in as many ***different*** ways as they can. Let them figure out that the orange square and skinny white parallelogram aren't going to fit.



This is a challenging activity, because the kids must find ***different*** ways to fill the hexagons. They get 2 or 3 quickly, but then they get stuck. It pushes them to really think! You can create a class chart that shows all of the different ways to make a hexagon. You may also give this activity again as an independent math activity. Give student papers of the pattern block shapes and have them glue in the pattern blocks that will make a hexagon.

Lesson 4-3 Building Numbers

Materials: unifix cubes, crayons, recording sheet

Today the students will build numbers using unifix cubes. Show the group a stack of 5 red unifix cubes. Have the students count to confirm the number. Place a stack of 4 red cubes and one blue cube next to the 5-red stack. Ask: *Does each stack have 5 cubes altogether? How do you know?* Summarize by saying: *We found another way to make five cubes- this time with four red cubes and 1 blue cube.* Model how to record both stacks on the recording sheet. For the first stack, color all of the cubes red and write

"5" in red next to it. Also, write "0" in blue, making sure the students understand there are 0 blue cubes in that stack. For the second stack, color 4 red cubes and 1 blue cube, write "4" in red next to the red cubes and "1" in blue next to the blue cube.

Next, show a stack of 5 cubes in the opposite arrangement: 4 blues and 1 red. Line up the three stacks next to each other to confirm they are all 5. Ask: *How are these stacks the same? How are they different?* Record the third combination. Have the students find other ways to make 5 and record the ways on the sheet. Make sure you only use red and blue cubes. Note that one stack on the page is not colored because there are only six ways to make 5 with two colors.

Assign each student a number between 6-9 to build. Give the student that specific number of cubes in two different colors and the appropriate recording sheet. Tell them to keep the same colored cubes together to simplify recording and help them see the smaller groups they represent.

Conclude by having the students compare and discuss their results. Children may notice "opposites" or "turnarounds", such as 4 red and 2 blue, and 2 red and 4 blue. They may also notice that there is not an opposite for equal number combinations, such as 3 red and 3 blue. Finally, they may notice that some numbers have more combinations than other numbers.

5 Recording Sheet

6 Recording Sheet

7 Recording Sheet

8 Recording Sheet

9 Recording Sheet

Lesson 4-9 Pattern Block Puzzles

Materials: Pattern blocks, pattern block puzzle templates

Demonstrate how to combine pattern blocks in various ways to complete puzzles. As the students work, the teacher should use shape names and spatial language to describe and discuss student strategies. For example, you may say*: I noticed you flipped the trapezoid to make it fit. What happens if you turn or rotate the rhombus? I see that you used three triangles to fill the trapezoid.* This activity can be used as a center during math independent group time. All pattern block puzzle templates are found on the share drive.

Unit 5

Lesson 5-3 Teens on Double Ten Frames

Materials: double ten frame, teen spinners, class number cards 10-20, 20 counters per child.

Review the teen numbers. Flash the numbers to the group, so that they can recognize the name of the number. Distribute a blank double ten frame and discuss that this frame is made up of two ten frames. Hold up a number between 10-19 and ask the students to use counters to show the number on their double frame. Direct the students to fill in one ten frame first and then add counters to the second frame to illustrate the number. Discuss with the students that this is a way to show the number with "ten and some more." Highlight that each time they use ten and some additional ones. Repeat with a few more numbers between 10-19. Discuss how 10 is ten and no additional ones. You may also illustrate 20 and discuss how it is a ten and ten additional ones, or two tens.

Have the students work with a partner. Give each child a double ten frame, spinner, and 20 counters. One child spins the spinner and says the number. The other child uses counters to illustrate the number on the double ten frame. This child will then spin the spinner and say the number. Child number one builds the number on the double frame. The children then compare their frames. The child with the greatest number wins the round. Children then clear the frames and spin again. Encourage children to use terms *greater than, less than* and *equal* when comparing.

Conclude by giving each child a teens on double ten frame book to work on at independent group time. This book is found on the share drive.

Double Ten Frames

Lesson 5-4 Find and Draw Shapes

Materials: pictures from magazines, books, internet where children can find real world examples of shapes, recording sheet

Briefly review shapes from the shape anchor chart. Show the students the pictures you have chosen and have them find the shapes in the pictures. There are real life shape pictures on the share drive for this lesson. Prompt them to name and describe the shapes they find, as well as its position. Ask: *What shape do you see? What object does it represent? Where is the shape? How do you know the shape is a___?*

Have each student choose four shapes from the pictures and have them draw the shapes on the recording sheet. Model how to draw each shape. Narrate using words from the students' descriptions. For example, for a triangle you would say: *I need to draw three straight sides. I draw one long side. At the vertex, I turn and draw a short side. At the next vertex, I turn and draw a short side. At the next vertex, I turn again and connect to where I started.* If a student struggles provide a photocopy of the picture and allow them to trace the shapes with a pencil or marker.

Lesson 5-4 Drawing Shapes

Lesson 5-6 Number Bonds

This lesson is taken from Engage NY

Introduce with the following problem:

Materials: (S) Personal white board

MP.1 Julia went to the beach and found 3 seashells. Her sister Megan found 2 seashells. Draw the seashells the girls found. How many did they find in all? Talk to your partner about how you know.

Note: This problem anticipates the composition of numbers to 5 in today's lesson.

Then continue with the lesson:

Materials: (T) 3 hula hoops, colorful masking tape, graphic of birds (Template 1), (S) Number bond (Template 2), 5 cubes

Before the lesson begins, prepare a large number bond template on the classroom floor using hula hoops and tape, and place the template graphic of birds on the board.

T: We are going to play a game today! Student A, please come and stand in this hula hoop. (Direct the student to stand in one part of the "number bond.") Students B and C, please come stand in this hula hoop. (Direct students to stand in the other part.) What do you notice?

Please note that you do not have to use hula hoops- but you want to make sure you clearly illustrate a number bond.

S: There are two students in one hoop and one in the other. → There are three students standing up. → One hoop is still empty. → There are some lines on the floor, too!

T: Yes, there are some special paths on the floor connecting our hoops. I am going to make a picture to show our friends right now. (Construct visual of the number bond on the board showing two students in one part and one in the other.)

T: Let's pretend the students are all going to a party. Please walk along the tape paths to get to the party. Don't fall off the path! What do you notice now?

S: Now, all three of them are in one hoop!

T: So we started with one student in one hoop and two in the other. Now, we have all three students in one hoop! Let me put that in my picture. (Complete the pictorial number bond on the board.) 1 student and 2 students together makes…?

S: 3 students!

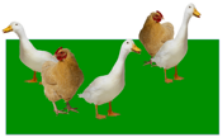
A NOTE ON MULTIPLE MEANS OF REPRESENTATION:

After you have introduced *number bonds* to the class, create a visual of a number bond and put it on your math word wall. Be sure that your visual shows number bonds in all orientations. The visual may help your English language learners remember what the term means and enable them to use it in partner talks.

Repeat the game three times with other students and combinations for 3, 4 and 5, recording the results in the pictorial number bond on the board each time.

T: Look at the picture of the birds on the board. What do you notice?

S: I see some geese. There are chickens, too.



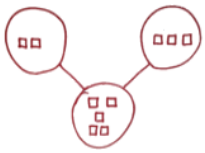
T: How many birds are there?

S: 5.

T: How many geese? (3.) How many hens? (2.) So, we have 5 birds. There are 3 geese and 2 hens. Repeat after me: 3 and 2 make 5. (Write the number sentence on the board.)

S: 3 and 2 make 5.

T: I can show that in a hoop picture like we did before! We call this sort of picture a **number bond**. It takes a long time to draw ducks and hens, so I will just draw squares instead.

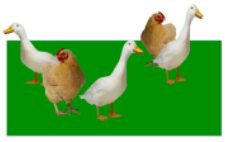


T: In my picture, I have 3 pretend geese and 2 pretend hens. I have 5 pretend birds in all. Look at my picture to see how this is like what we did with our students in the hoops. (Demonstrate and guide students to see that 3 and 2 make 5 in the number bond.)

T: In both stories two groups were **put together**. One is about students going to a party, and one is about geese and chickens, but the number bond is the same!

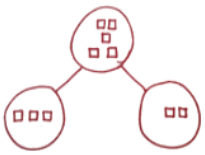
T: Turn and talk to your partner. Partner A, tell a put together story about apples and bananas that matches the same number bond. (Wait for Partner A to share.) Now, Partner B, tell a put together story about monkeys and lizards to match the number bond.

Listen as the students share their composition stories with each other, and give new ideas if they need more practice.



T: Great job putting bananas and apples together, and putting the monkeys and lizards together. Now, let's start with all the birds and put them into two groups. Look at the picture of the 5 birds. What would you tell me?

S: There are two different kinds of birds. → There are 5 birds in the picture. 3 are geese, and 2 are hens!



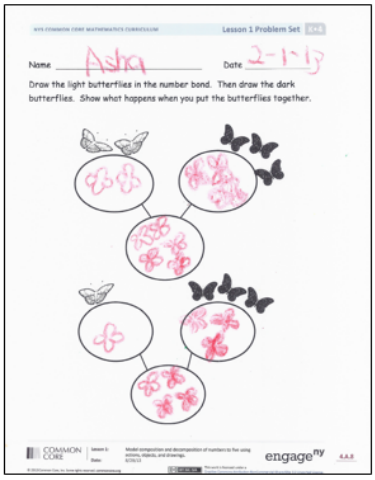
T: Yes, I could take my 5 birds and show that we have 3 geese and 2 hens. The number bond shows that, too, but I am going to switch it around! (Demonstrate with the bond on the board, this time putting the total on the top.)

T: Let's tell **take apart** stories to match the number bond, too. Turn and talk to your partner. Partner A, tell a take apart story about 5 animals in two groups: snakes and turtles. (Wait for Partner A to share.) Partner B, tell a take apart story about 5 balls in two groups: basketballs and tennis balls.

T: We're going to practice this some more in our Problem Set. You will get a chance to draw some put together and take apart number bond pictures yourself.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.


Lesson 1 Problem Set

Name Aisha Date 2-1-17

Draw the light butterflies in the number bond. Then draw the dark butterflies. Show what happens when you put the butterflies together.

engage^ny

Student Debrief (8 minutes)

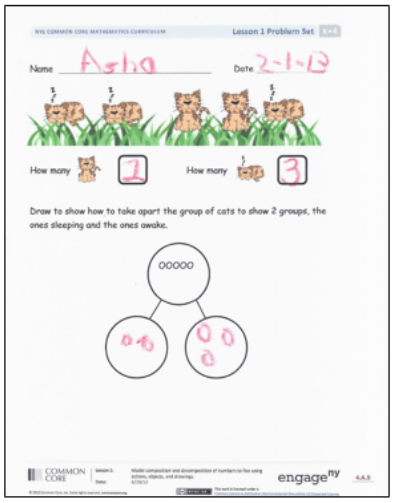
Lesson Objective: Model composition and decomposition of numbers to 5 using actions, objects, and drawings.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Lesson Closure:

Any combination of the questions below may be used to lead the discussion.

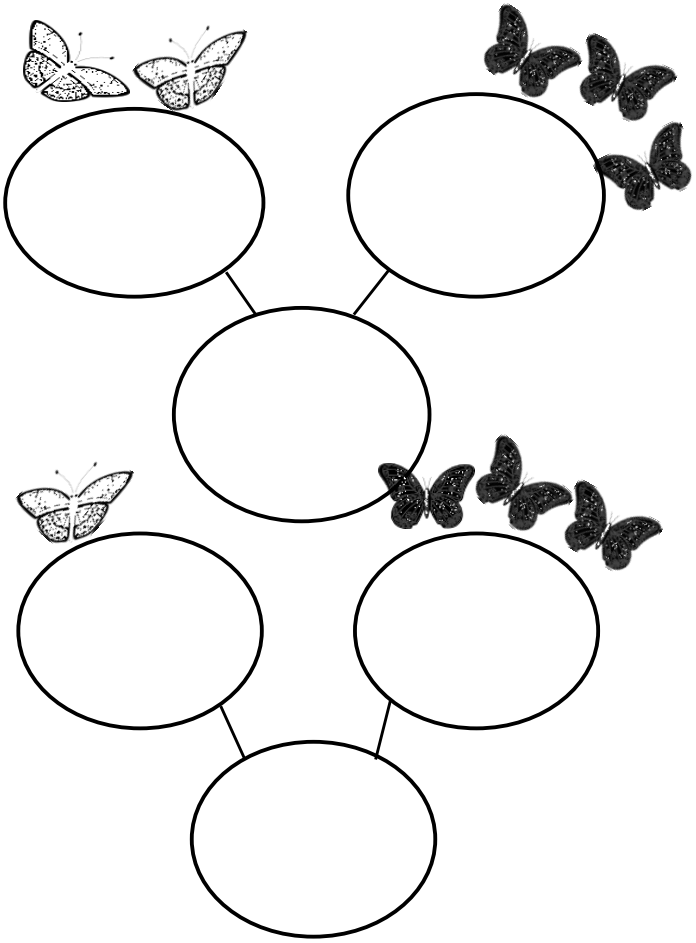


- What new type of drawing did we use today? (**Number bond.**)
- In the Problem Set, which story was about **putting together,** and which story was about **taking apart**?
- Did you notice that the number bond was different for the butterflies and cats? Why do you think I drew the number bond differently?
- Look at the butterflies on your Problem Set. Why did we draw all the butterflies in the bottom circle?
- We drew circles in the last number bond on our Problem Set. What do the three circles represent?
- What do the two circles you drew represent? How does drawing little circles instead of cats help us in math?
- What happened when we played the games with the hula hoops?
- How did you know what we should write in each of the hoops in our number bonds?
- Did our number bond look different when we worked backward, starting with the whole group of birds?

The follow up activities are on the following two pages. You may wish to give one sheet for homework. You want the students comfortable with using this model.

Name _____ Date _____

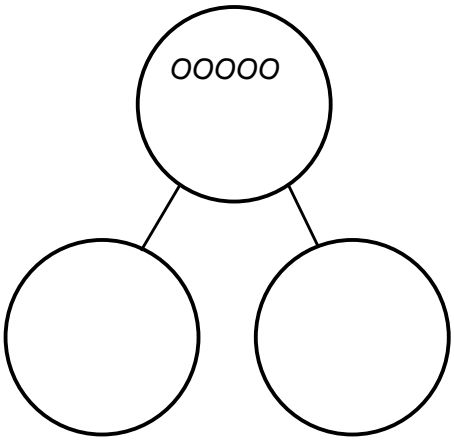
Draw the light butterflies in the number bond. Then, draw the dark butterflies. Show what happens when you put the butterflies together.



Name _____ Date _____

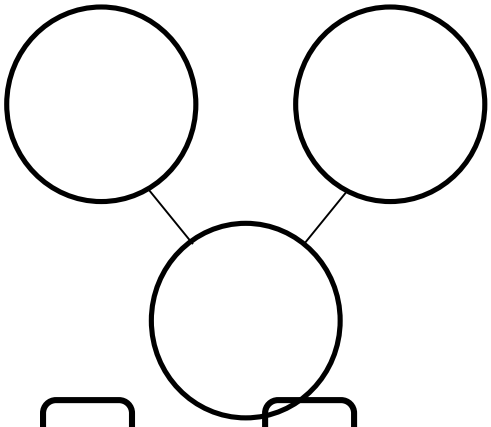
How many  ? ☐ How many  ? ☐

Draw to show how to take apart the group of cats to show 2 groups, the ones sleeping and the ones awake.



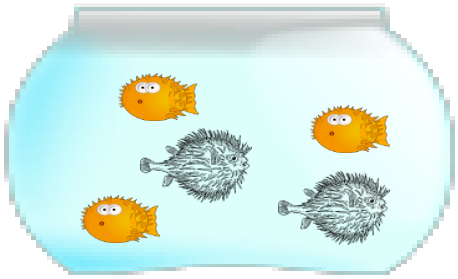
Name _____ Date _____

Draw the blue fish in the first circle on top. Draw the orange fish in the next circle on top. Draw all the fish in the bottom circle.



☐ and ☐ make ☐

Draw a square for each fish in the top circle. Draw a square for each goldfish in the bottom circle. In the last circle on the bottom, draw a square for each spiny fish.



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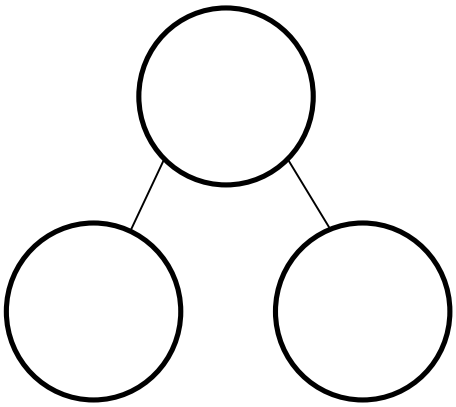
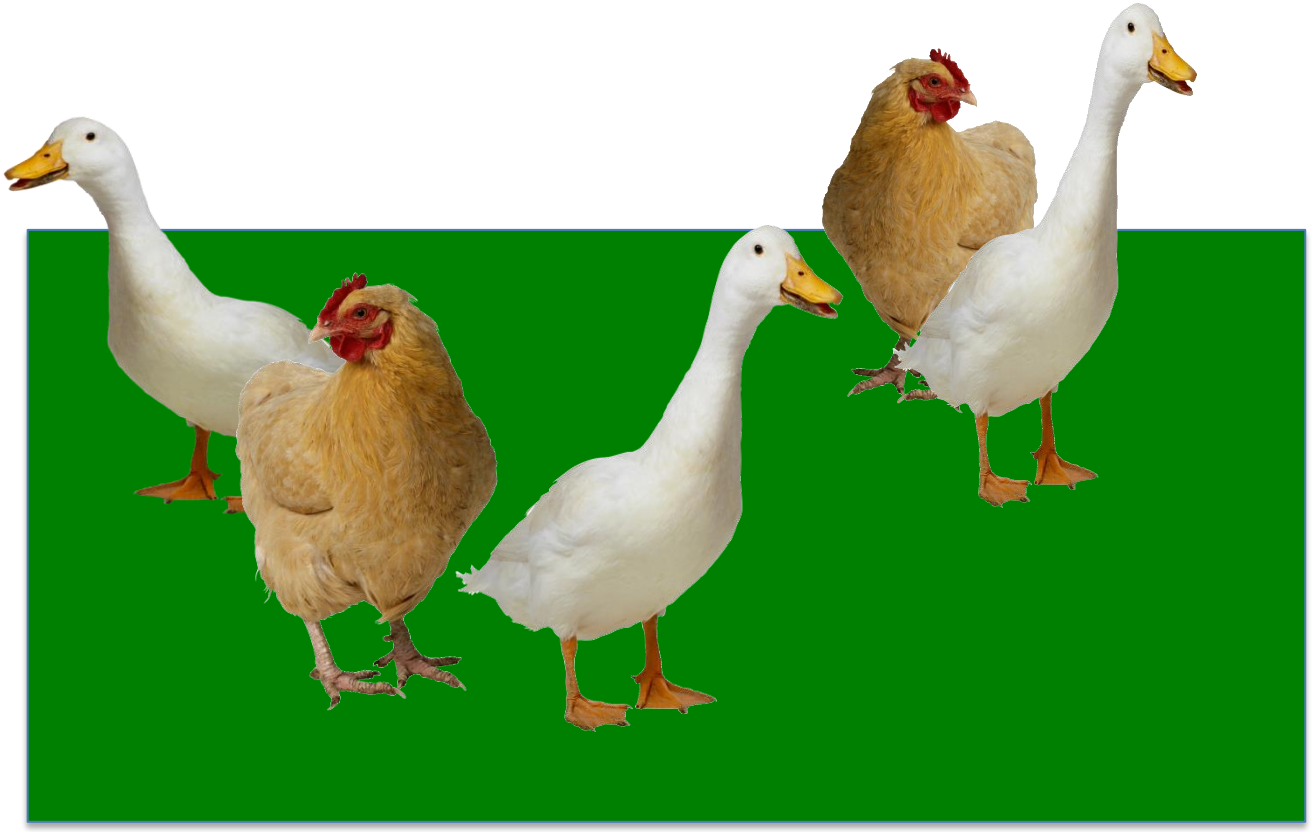
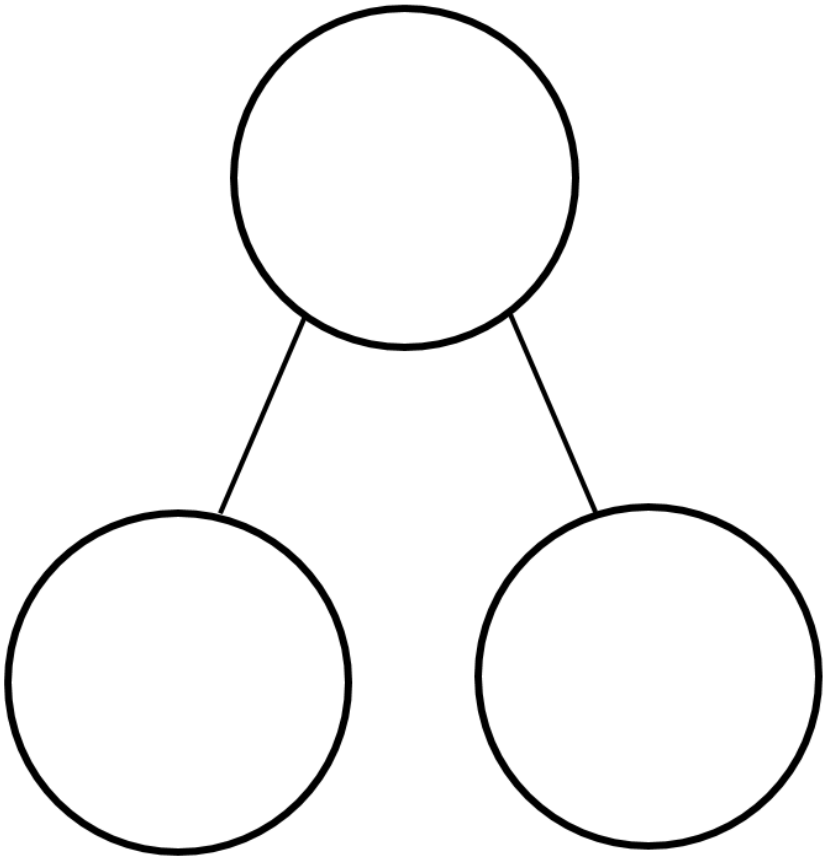




NUMBER BONDS



Lesson 5-8 Representing number bonds with numeric symbols.

Lesson adapted from Engage NY

Use the following problem to introduce the lesson. Give each student a dry erase board and a marker. Have them represent the problem using number bonds. They will attempt to make their own number bond on the board.

Chris had 3 baseball cards. Use your cubes to show his cards. Katharine had 2 baseball cards. Show her cards with your cubes. Now, with your cubes, show how many cards they have together.

Make a picture on your personal white board to show the story. Can you make a number bond picture about your story? Talk about your work with your partner.

Note: This problem sets the stage for compositions of numbers to 5 in today's lesson and is the first time students are making a number bond drawing without a template.

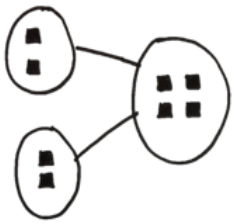
Follow with the lesson. Students are transitioning from using pictures to numbers.

T: Close your eyes and imagine this story. Two squirrels were playing in the park. Two more squirrels came to join them. Now, open your eyes. In one of your hoops, one of the **parts**, draw squares to show the squirrels that were first playing in the park. (Demonstrate.) In another hoop, the other **part**, draw squares to show the squirrels that joined them. (Demonstrate.) Where would we draw the squares to show all of the squirrels together? (Allow time for discussion.)

When introducing the terms *part* and *whole*, ensure English language learners clearly understand that the word is *whole* and not *hole*. Teach them the difference between the two words by showing them a picture of a hole and a picture of a whole apple cut into parts. Post the pictures and the written words on your word wall.

S: In the hoop with two paths! → We would draw 4 squares there.

T: Yes, we would draw cubes for all of the squirrels together in the **whole.** (Demonstrate.) Finish your number bond on your personal white board and hold it up.



T: What would happen if we turned our number bond around so the whole is on the left? Try it. Does it change our story?

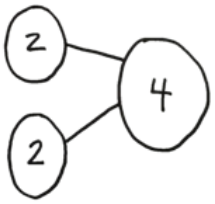
S: No. → It just looks different. → The squirrels are the same. → To me, it makes the story start with the 4 squirrels. I saw 4 squirrels. 2 were in the park, and 2 more came to play.

T: Sometimes I get so tired of drawing squares! Would it be fair to use a secret shortcut? How many squares are in this part?

S: 2.

T: Can we erase the squares in that part and write a 2 instead? Would that be fair?

S: Yes! You could put a number for the squares! → You could use numbers instead of the pictures.



T: Let me replace my squares with numbers. (Demonstrate.) Have I changed anything about the story?

S: No. It just looks different. → You just used numbers instead.

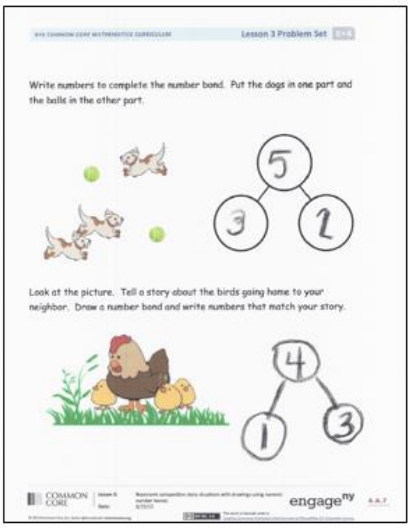
T: Count the squares in each of your hoops, erase them, and write the numbers instead. Turn and talk to your partner about the secret shortcut. (Allow time for discussion.)

T: Erase your boards. Listen to my next story and draw a picture on your personal white boards to show what happens.

T: John read 3 picture books one night. Draw his books. (Pause to allow time for drawing.) The next night, he read 2 more picture books. Draw his new books. (Pause to allow time for drawing.) How many books did John read?

Closure for the lesson with follow up activities:

- Look at the smiley faces on your Problem Set. Did your neighbor put the red (gray) faces and the white faces in the same parts as you did? Does it matter where we draw the smiley faces that are in the parts?
- What is the fastest way to tell about the triangles and squares in a number bond? Drawing the shapes or writing the numbers?
- Does it make a difference where I write the numbers in the number bond?



Lesson Objective: Represent composition story situations with drawings using numeric number bonds.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

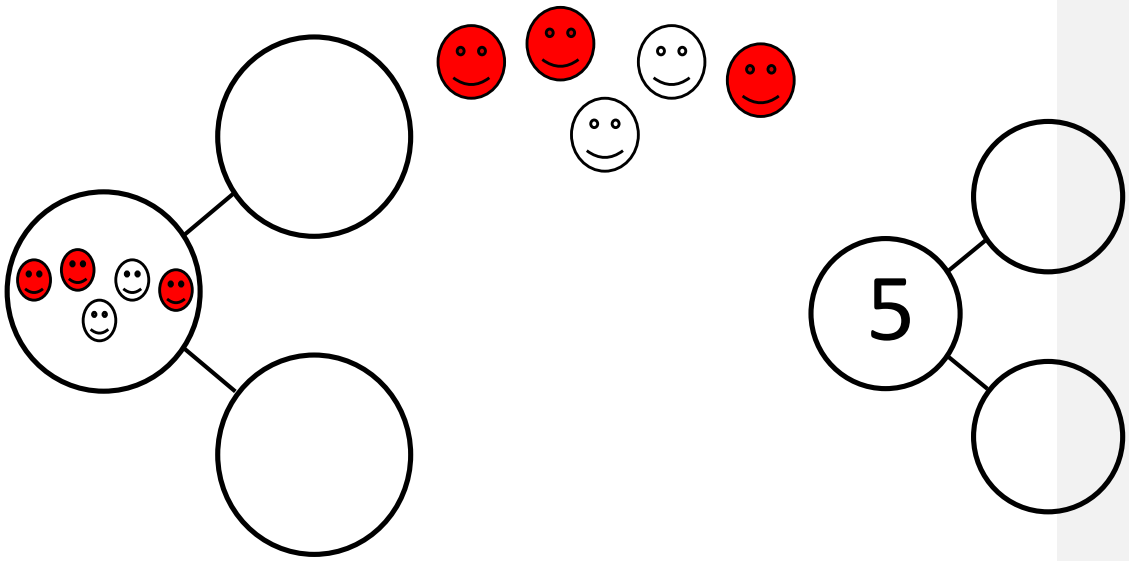
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

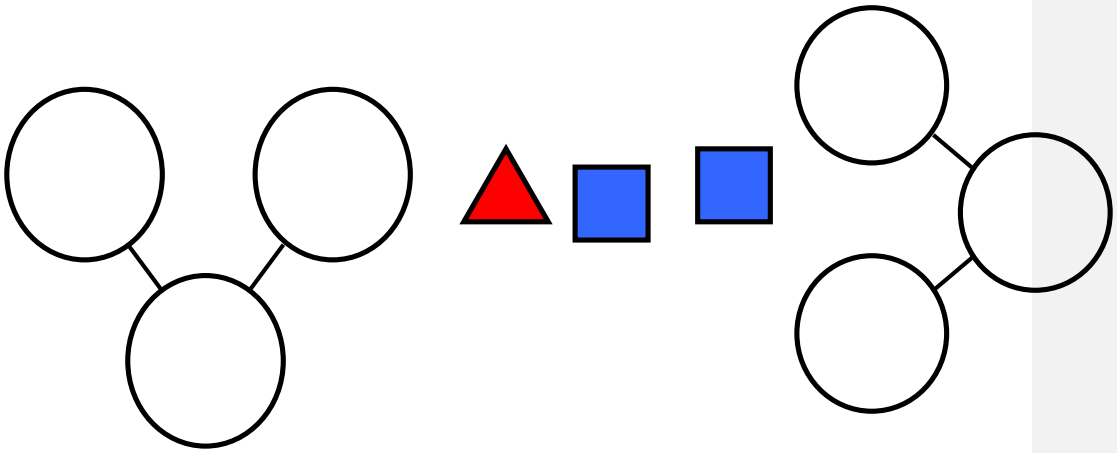
Any combination of the questions below may be used to lead the discussion.

- What is a **part**? What is the **whole**? How do they work together?
- Does it matter if we use pictures or numbers to show a story? Does it matter if we use pictures or numbers in our number bond? Why or why not?

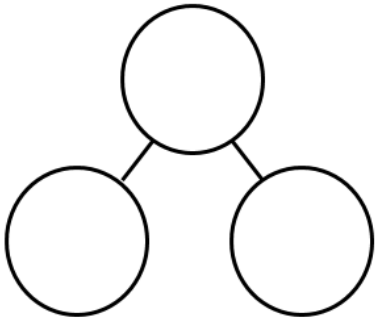
Name _____ Date _____

Draw and write the numbers to complete the number bonds.





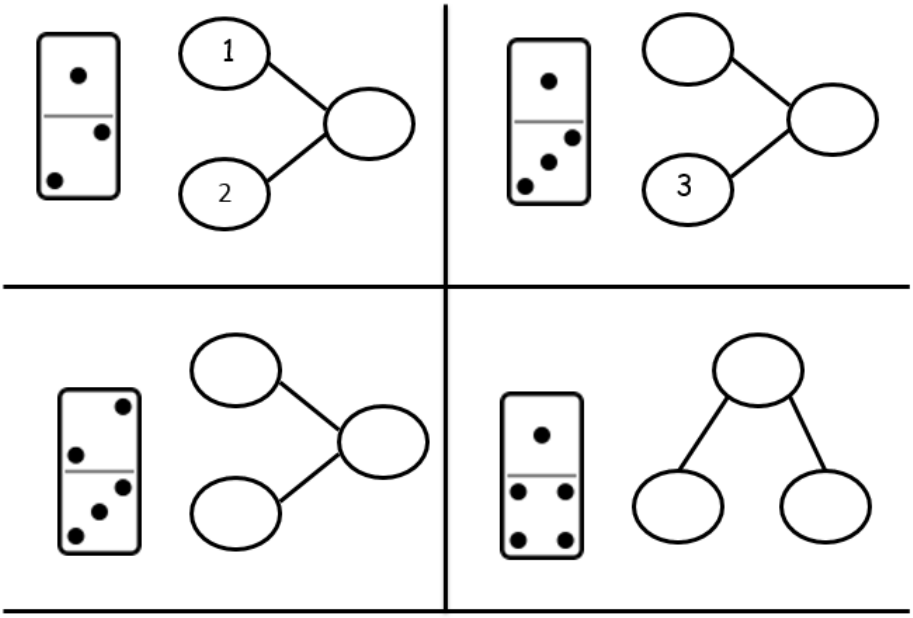
Write numbers to complete the number bond. Put the dogs in one part and the balls in the other part.



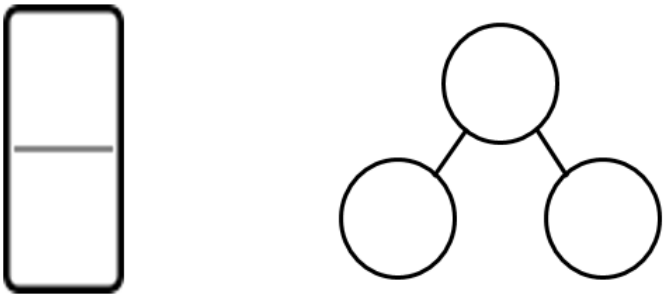
Look at the picture. Tell a story about the birds going home to your neighbor. Draw a number bond and write numbers that match your story.

Name _____ Date _____

Fill in the number bond to match the domino.



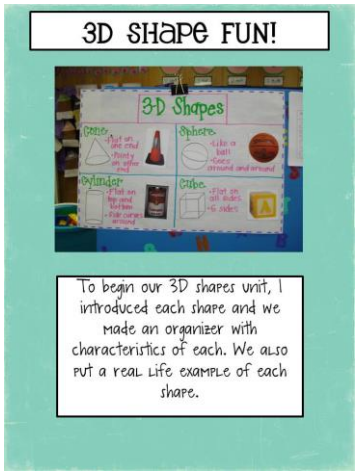
Fill in the domino with dots, and fill in the number bond to match.



Lesson 5-11. 3-D Shape Identification

Materials: examples of solids: cube, sphere, cylinder, and cone, sorting cards

Review the shapes. Then show a picture of a triangle, and a picture of a cube. Are these two shapes the same? How are they different? Stress that three dimensional shapes are solids and can stand up, whereas two dimensional shapes are flat. Use the three dimensional real life pictures on the share drive. Have the students sort these shapes together as a small group. When you have finished with small group instruction on three dimensional shapes, create a class anchor chart listing the attributes of each shape. The following is a sample that you can use.

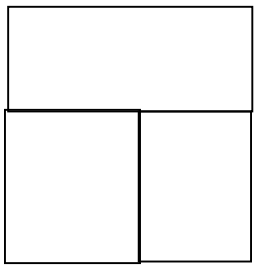


Conclude with a sorting worksheet found on the share drive. Students will sort two dimensional and three dimensional shapes. There is also a follow up mini booklet that can be used at independent math groups for use after this lesson.

Lesson 5-12. Decomposition Game

Materials: pipe cleaners and bead numbers, recording sheet

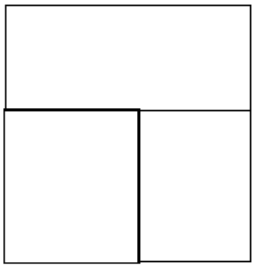
Students need to make the connection between the number bonds, and the boxes that are on the mid-year benchmark. Show children a bead pipe cleaner that has 6 beads on it. Demonstrate how to decompose 6 with this manipulative. On a dry erase board, draw and record a number bond for the combination of 6. Then show children the box. Say: *We can show a number combination using this box, as well.* Demonstrate how to record the combination in the box.

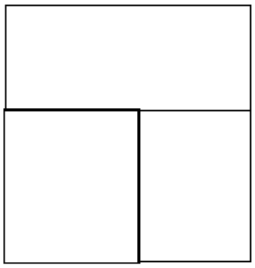


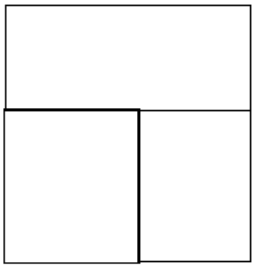
Give each student a pipe cleaner with 6 beads. Have them find two combinations of six, and record their findings in the boxes. Observe and give assistance where needed.

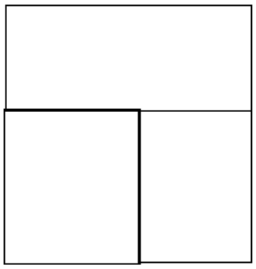
Independent practice: Give all students in the group a pipe cleaner with 7 beads on it. Have them find and record 4 different combinations of 7. Have students share their results with the group. Ask: *How do you know that this makes 7? Does anyone have a different combination? How can we have different combinations, yet still have 7? How can you check your work?*

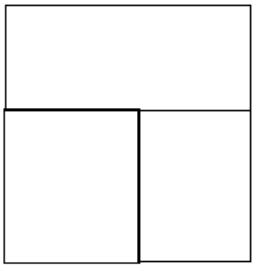
Decomposition Recording Sheet

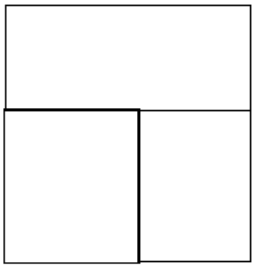










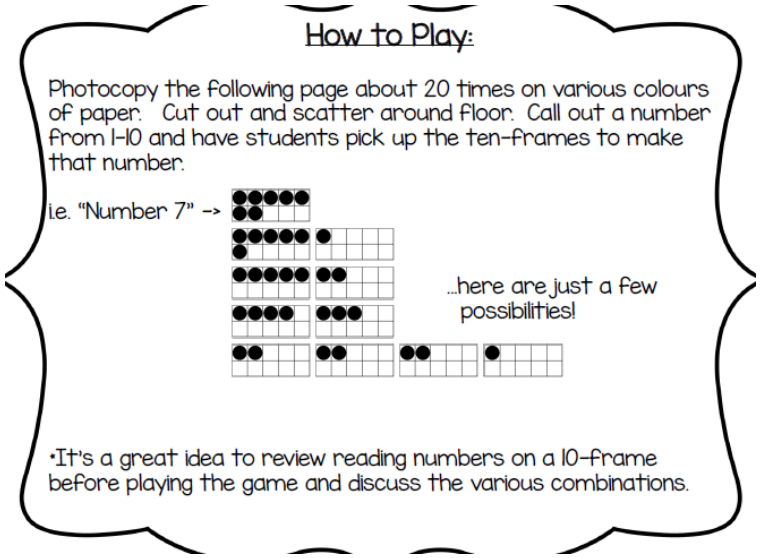


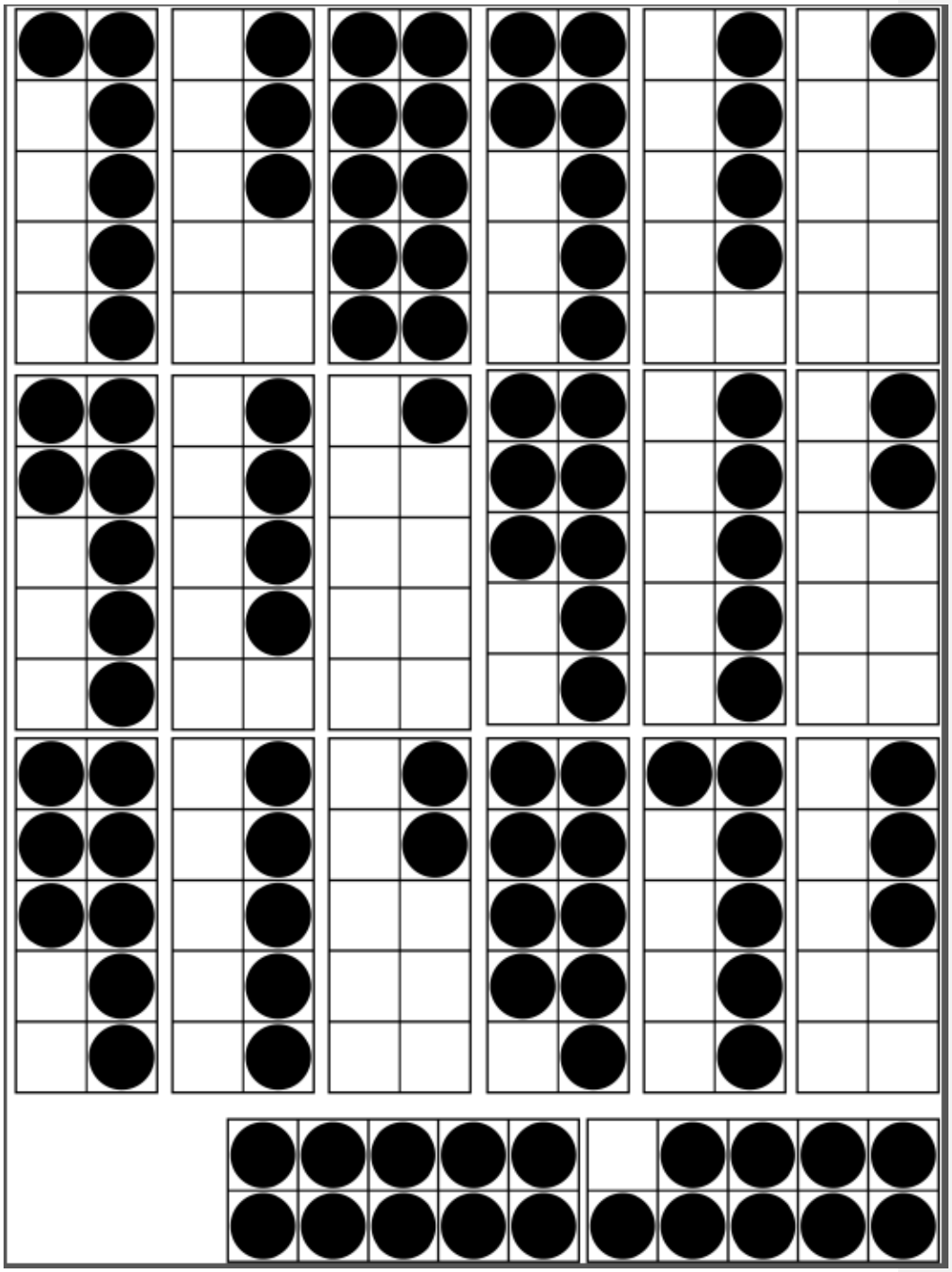
UNIT 6

Lesson 6-1 Ten Frame Drop

Materials: photocopied ten frames (20 sheets in different colors), recording sheet

Begin by reviewing reading numbers on ten frames. Students should be proficient with this because it is a daily part of morning routines. Additionally, discuss the different combinations that one can make from ten frames. Ask the students: *If I wanted to make the number 7, what different combinations of ten frames could I use?* Spread out all of the ten frames on the floor, so that the students can see them. Explain the rules of the game: The teacher will call out a specific number. Students are to search through the ten frames and find as many combinations as they can. Students can use 1 ten frame, 2 frames or more than 2 frames. After a couple of minutes, tell the students that the time is up. Have students share the different combinations they have found. Students can record their combinations on the recording sheet.





Lesson 6-2

Adapted from Engage NY

Count 10 objects within counts of 10 to 20 objects, and describe as 10 ones and __ ones.

Materials: 10 bags with different items in each, 1 egg carton cut to have 10 compartments for each pair of students

T: Count to find out how many slots there are in your egg carton. Wait for the signal to tell me.

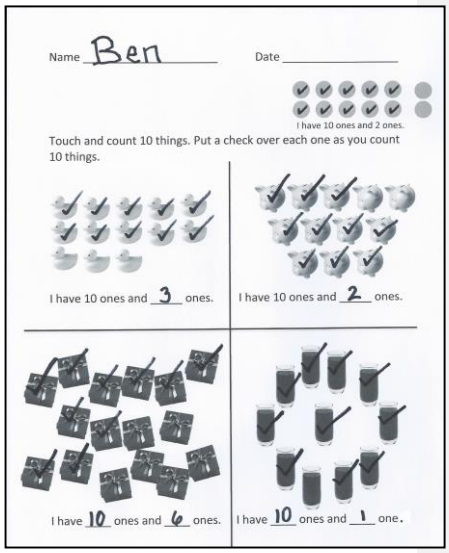
T: (Pause. When all are ready, give the signal.)

S: 10.

T: Each team will count the objects in ten bags. To count the objects in your bag, start by placing the objects in the egg carton, and then put any extra objects next to the carton.

T: Tell your partner, "I have 10 ones and ____ ones."

T: We'll do one together first. (Demonstrate.)



Have pairs of students count out the given **teen number**, decomposing it as 10 ones and some more ones. After counting the objects, have pairs trade bags and count the new objects.

T: (Allow students time to count all 10 bags.) Let's see what you discovered! Count the clothespins with me.

S: (Show each one using the egg carton.) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18.

T: How many clothespins are there?

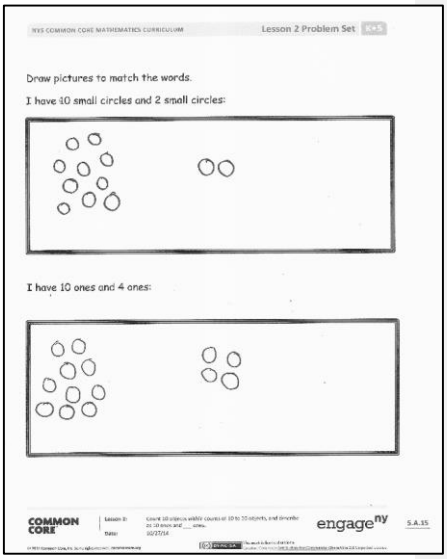
S: 18.

T: (Write 10 ones and ___ ones.) Let's complete this sentence.

S: 10 ones and 8 ones.

T: Yes!

Have students, in pairs, count and then decompose the other quantities in the other bags using their egg cartons, allowing them to recognize and internalize the structure of teen numbers as 10 ones and some more ones. Continue to encourage statements following the pattern "12 is 10 ones and 2 ones."



NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 2 Problem Set

Draw pictures to match the words.

I have 10 small circles and 2 small circles:

I have 10 ones and 4 ones:

COMMON CORE | engage^ny | S.A.35

Conclude the lesson with the follow up activities. One page can be sent home as homework.

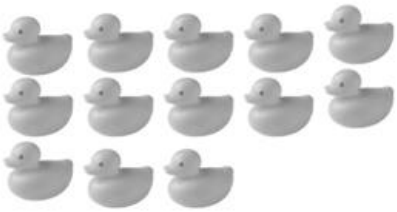
Ask students to look at the picture of the ducks. Guide students in a conversation. Any combination of the questions below may be used to lead the discussion.

- Is it easy to see 10 ones in this picture? Why?
- How is this picture the same and different from counting using the egg carton?
- Which was easier to count, the ducks or the glasses of juice? Why? Show your friend how you counted the glasses of juice.
- Write the number 17 on the board. Can someone come up and draw 17 squares on the board? Can someone come up and circle 10? Fill in this sentence for me: 17 is 10 ones and ____ ones.
- 14 is 10 ones and ____ ones. Fourteen is a **teen number**. What is another teen number?
- Eleven and twelve don't have *teen,* but most grown-ups call them teen numbers. What have you noticed today about teen numbers?

Name _____ Date _____

I have 10 ones and 2 ones.

Touch and count 10 things. Put a check over each one as you count 10 things.



I have 10 ones and ___ ones.

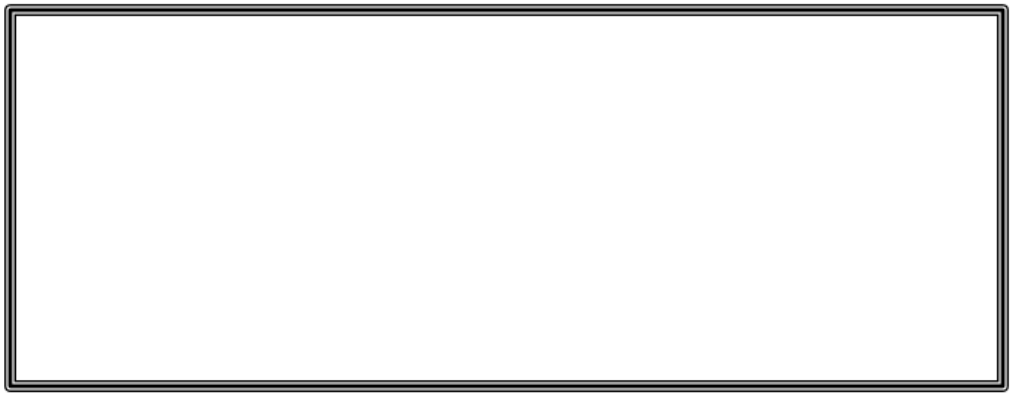
I have 10 ones and ___ ones.

I have ___ ones and ___ ones.

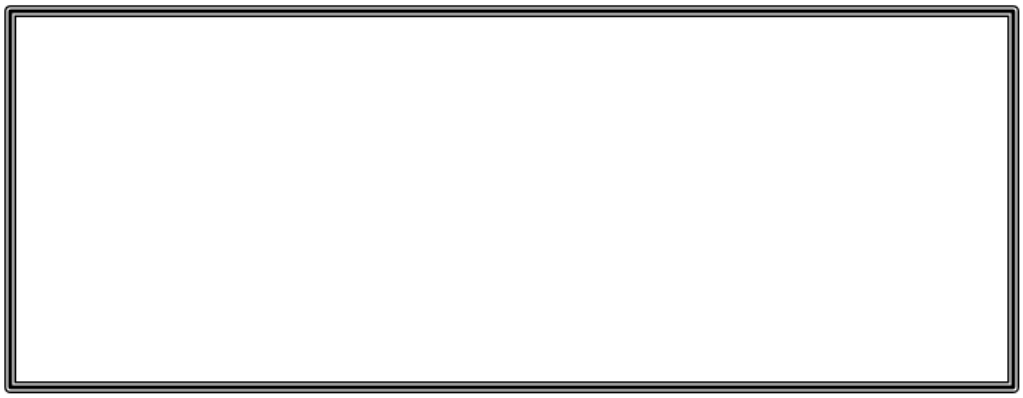
I have ___ ones and ___ ones.

Draw pictures to match the words.

I have 10 small circles and 2 small circles:



I have 10 ones and 4 ones:



Homework

Name _____ Date _____

10 ones and 3 ones

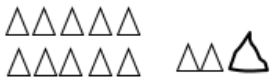
10 ones and 1 one

Circle the correct numbers that describe the pictures.

	10 ones and 3 ones 10 ones and 7 ones
	10 ones and 8 ones 10 ones and 5 ones
	10 ones and 10 ones 10 ones and 8 ones
	10 ones and 4 ones 10 ones and 2 ones

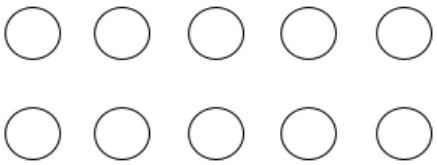
Homework

Name _____ Date _____



10 ones and 3 ones

Draw more to show the number.



10 ones and 2 ones

10 ones and 5 ones

10 ones and 7 ones

10 ones and 4 ones

Lesson 6-3 Say Ten Way

Adapted from Engage NY

Objective: Count straws the Say Ten Way to 19; make a pile for each ten.

Materials: (T) 19 linking cubes (S) 19 straws per pair of students, a bag of 19 small counting objects such as pennies or beans per student

Whole Group Activity

T: Come sit with me on the carpet. (Choose a student helper to sit next to you on the left.)
T: (Place a linking cube on each of your fingers.) How many cubes do you see?
S: 10.
T: (Ask your helper to place a cube on her right pinky finger.) Now, how many cubes do you see?
S: Eleven! → I see 10 and 1.
T: You're all correct! Eleven is 10 and 1. I'm going to teach you to count the Say Ten Way!
T: (With a linking cube on each finger, raise your hands again.) How many linking cubes is this?
S: Ten.
T: Every time Lucy adds another cube to her fingers, we'll Say Ten (show your hands) and the number of ones you see on her fingers. Ready?
S: (Have helper add cubes on her fingers from right to left in sequential order up to 19.) Ten one, ten two, ten three, ten four, ten five, ten six, ten seven, ten eight, ten nine.
T: Excellent! Now, go back to your seats, and we'll practice counting the Say Ten Way using straws.

Small Group Activity

T: (Pass out 19 straws to each pair of students.) One student, Partner A, will count out 10 straws into a pile. The other student, Partner B, will place one straw next to the pile, and we'll say, "ten one." Ready?
S: (Show a pile of 10 straws and 1 more straw.) Ten one.
T: Partner B, place another straw next to the pile of 10. How many straws now?
S: Ten two, ten three, ten four...(continue to ten nine).
T: Put all the straws back into one pile, and switch roles. Partner B, count out 10 straws into a pile. Partner A, place 1 straw next to the pile, and let's practice counting again the Say Ten Way.
S: (Count up to ten nine.)

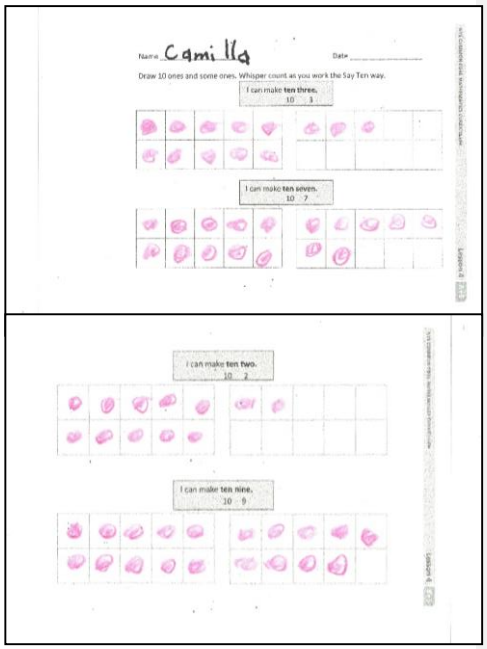
Follow up Activity

Begin by having the students use concrete materials on the ten-frames of the Problem Set. Have them count the Say Ten Way as they work. Direct students to fill the ten-frame on the left, first with one row of 5 from left to right, and then the row below from left to right. Remind them that these are like their egg cartons. After doing some examples with materials, have the students then draw and count the specified amounts while they count the Say Ten Way.

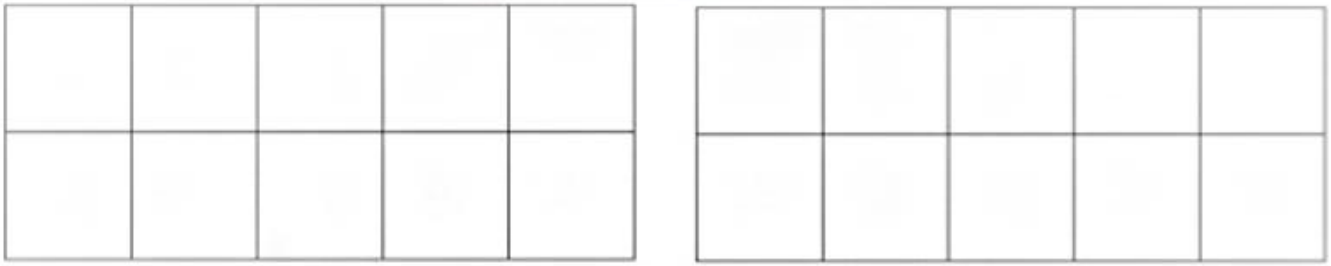
The following is a suggested list of questions to invite reflection and active processing of the total lesson experience. Use what will best support students' ability to articulate the focus of the lesson.

Suggestions for the Discussion:

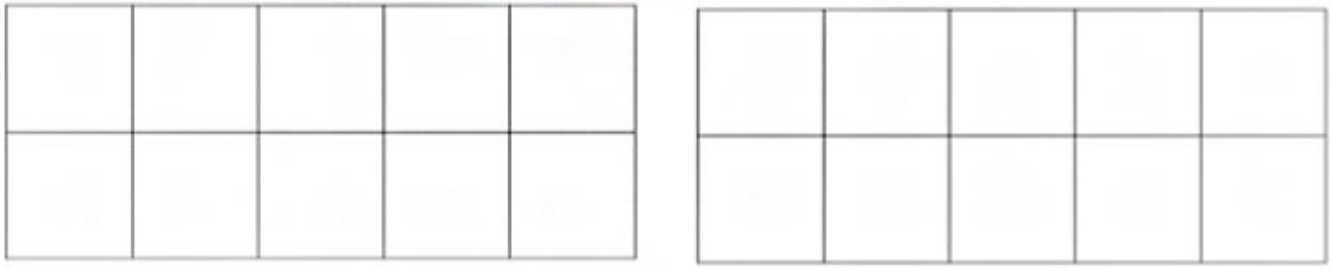
- Look at your circle 10 template. Can you say the numbers the Say Ten Way?
- Did your friend circle 10 objects the same way you did?
- Were both of your answers correct? Why?
- How do we say ten nine as one number?
- How do we say 16 the Say Ten Way?
- Which pictures were the easiest for you to count? Why?
- What do all the pictures have in common?



I can make **ten two.**
10 2



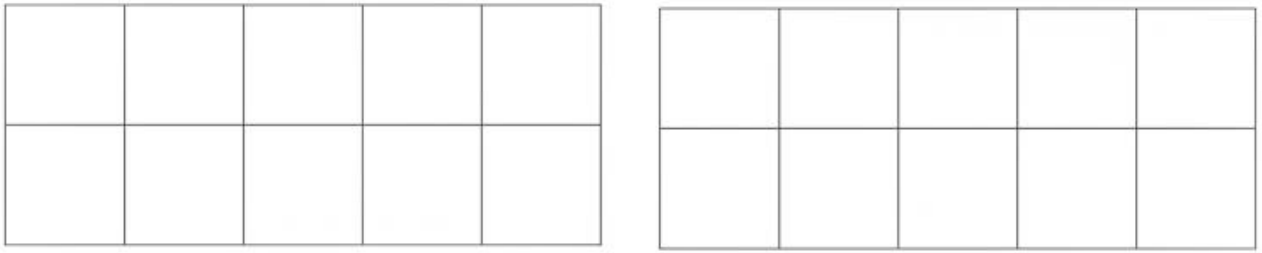
I can make **ten nine.**
10 9



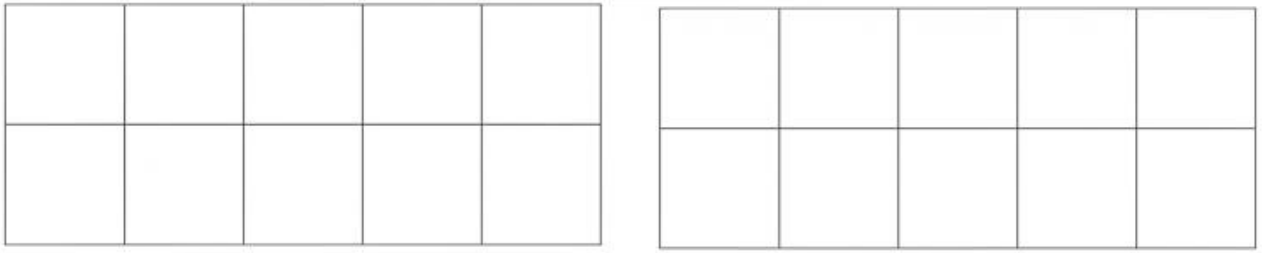
Name _____ Date_____

Draw 10 ones and some ones. Whisper count as you work the Say Ten Way.

I can make **ten three.**
10 3



I can make **ten seven.**
10 7



Homework

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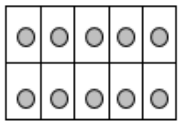
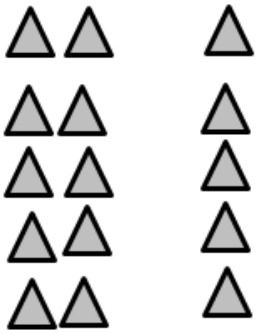


10 3

Count and write how many the Say Ten Way.

10 _____

10 _____



_____ _____

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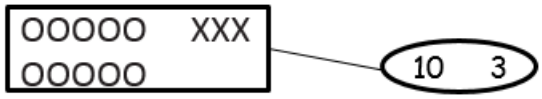
Homework

Name _____ Date _____



Draw a line to match each picture with the numbers the Say Ten Way.

OOOOO X OOOOO	10 1
OOOOO XX OOOOO	10 6
OOOOO XXX OOOOO	10 10
OOOOO XXXXX OOOOO X	10 2
OOOOO XXXXX OOOOO XXXXX	10 3

Lesson 6-4 Hiding Bears

Materials: 10 bear counters in a cup for each pair of children in a group, hiding bears recording sheet.

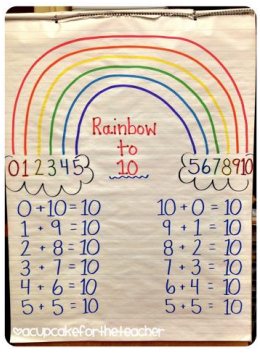
Model counting out 10 bears in front of the group. Place them under an inverted plastic cup, explaining that the cup is a cave that the bears sometimes hide in. Ask*: How many bears are hiding in the cave?* Remove all the bears from the cup and ask: *How many bears are hiding in the cave now?*

Demonstrate the game with a child as the group watches.

1. Close your eyes and have the student hide some of the bears in the cave (inverted cup).
2. Ask: *How can we figure out how many bears are hiding?* Model different ways to figure out how many bears are hiding in the cave.
3. State or restate how many bears you think are hiding. Then have the students count the bears under the cup to confirm.
4. Model how to record the round on the "Bears I see" and "Bears Hiding" chart.
5. Summarize the round by pointing out the combination of ten. For example: *There are 7 bears outside the cave and three bears in the cave. 7 plus 3 equals 10.*
6. Switch roles and play again.

Distribute materials for the students to play in pairs. Have the students write their findings in the columns to record the different combinations of ten. Remind the students to vary how many bears they hide, including 0 and 10 bears.

To conclude, bring the group back together and have them share combinations from their recording sheet. You can create a class anchor chart on combinations of 10. Here are 2 samples of the anchor chart:



Hiding Bears

Name:_____

Bears I see	Bears Hiding

Lesson 6-8 Representing Numbers with Place Value Cards

Adapted from Engage NY

Objective: Model with objects and represent numbers 10 to 20 with place value or Hide Zero cards.

Materials: (T) Hide Zero cards: one 10 card and numerals 1–9 (Template) (S) Hide Zero cards: one 10 card and numerals 1–9 for each pair of students (Template), two sets of 10 linking cubes (10 in one color and 10 in another color), personal white board for each pair of students

T: Have one color of your cubes represent the boys and another one the girls from the story in the Application Problem. Show me the boys and girls that were in school. When you are done, check your partner's work to be sure you agree.

T: (Allow students time to finish.) Everyone hold up the stick that represents the girls. (Students do so.) Hold up the stick that represents the boys. (Students do so.)

T: How many girls are there?

S: 10 girls.

T: Show the girls. (Students show again.) Here is the number 10. (Show the 10 card.)

T: How many boys are there?

S: 8 boys.

T: Show the boys. (Students show again.) Here is the number 8. (Show the 8 card.)

T: Put the boys together with the girls. Count with your partner the Say Ten Way to see how many students you have.

S: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, ten one, ten two, ten three, ten four, ten five, ten six, ten seven, ten eight. (Have early finishers count down to 1 from 18.)

T: How do we say the number of students the Say Ten Way?

S: Ten eight!

T: Watch this magic. Here is my 10. Here is my 8. I push them together, and I have ten eight! This is how we write ten eight. (Pull the cards apart, and push them together a few times.)

T: Talk to your partner. What happened to the 0 of the 10 ones?

S: It went under the 8. → It disappeared. → It isn't there anymore. → It is hiding.

T: Yes! It is hiding. I'm going to write the number without the cards. (Write 18.) It is like there is a 0 hiding under this 8.

T: I want each student to write this number on their personal white board. When I say to show me your board, show me.

S: (Write 18 on personal white board.)

T: Here is a bag with a set of these cards for you. Partner A, open the bag, and put all the numbers on your work mat. With your partner, put them in order from 1 to 10. (Wait.)

T: Partner B, show me ten eight with your cards. Be sure to hide the zero!

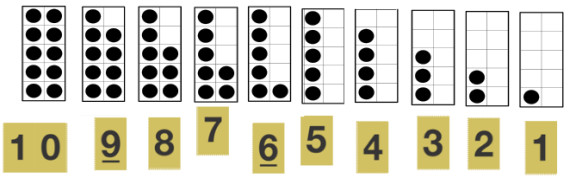
T: Partner A, on this first turn, you will use the cubes. Partner B, you will use the cards and write the number on your personal white board.

: Partners, show me ten one.

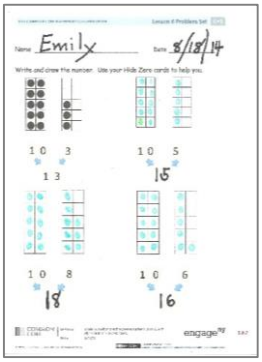
T: Partner B, use the cubes, and Partner A, use the cards. Show me ten five.

Continue the activity using other numbers. Different groups might work at varying speeds.

After about four different numbers, change the mode of representation from linking cubes to ten-frame cards, the same cards used during fluency practice. Have them place the cards in decreasing order from 10 to 1 for variety and repeat the process with about four more numbers.



Independent Practice



Students should do their personal best to complete the Problem Set .

Have students use their Hide Zero cards while doing the Problem Set, drawing the number represented and then writing the teen number.

Early finishers can be given another number to represent both pictorially and with cards on the back.

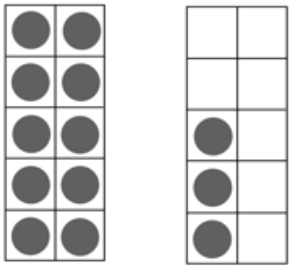
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class.

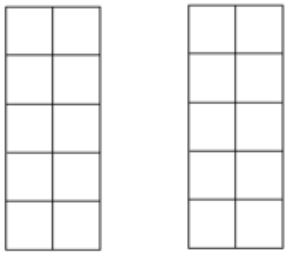
Introduce the cards as **Hide Zero cards**. Then, possibly discuss:

- Why do you think we call these cards Hide Zero cards?
- How is the number made by the Hide Zero cards different from and the same as the number written with pencil?
- How do the cards help you to understand the number 13? 18?
- If you didn't know the 0 was hiding, you might think the 1 in 13 was equal to 1 instead of 10. Then, the total value would be 4 because 1 + 3 is 4.

Name _____ Date _____

Write and draw the number. Use your Hide Zero cards to help you.

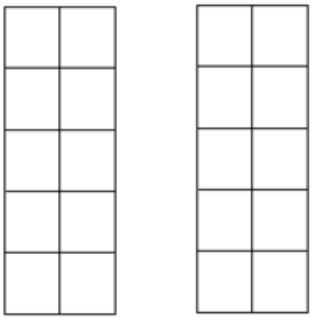


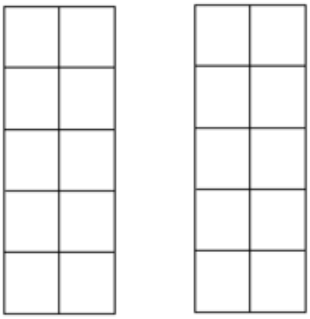


10 3

13

10 5





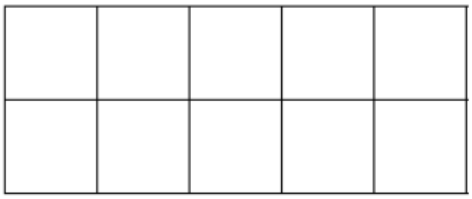
10 8

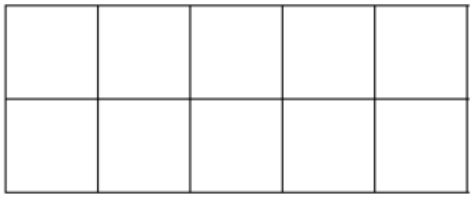
10 6

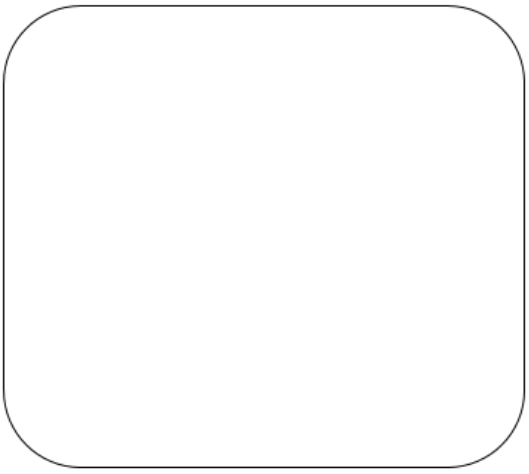
Name _____ Date _____

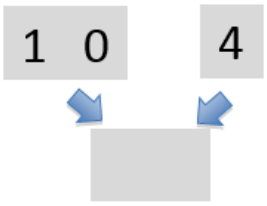
Draw the number shown on the Hide Zero cards with a drawing in the ten-frame. Write the number below after the 0 is hidden.

Show the number again on the right with a count of 10 ones and 4 ones. Circle the 10 ones.





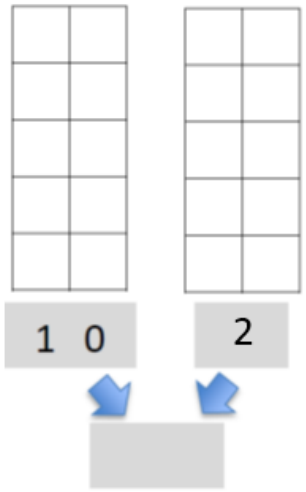


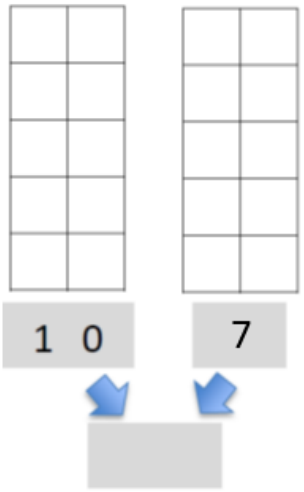


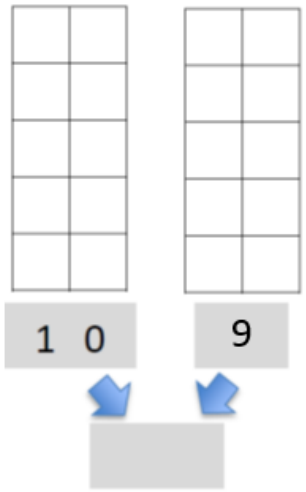
Homework

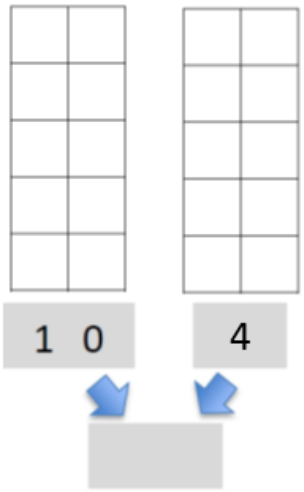
Name _____ Date _____

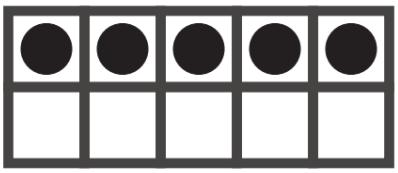
Write and draw the number. Use your Hide Zero cards to help you.

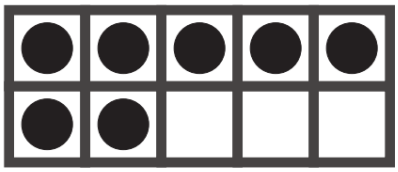


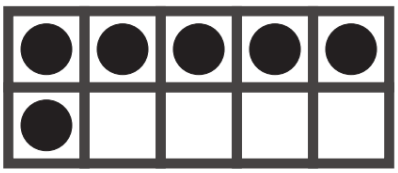


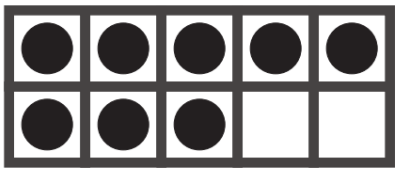


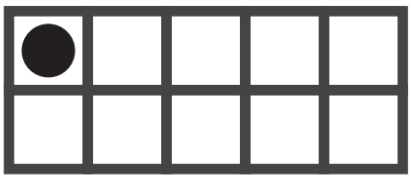


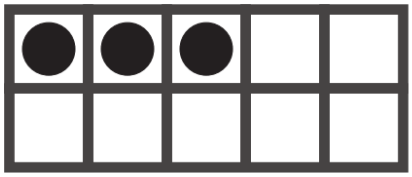


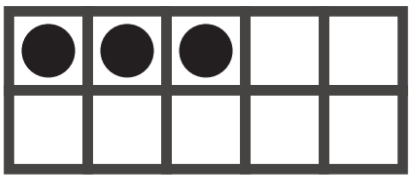


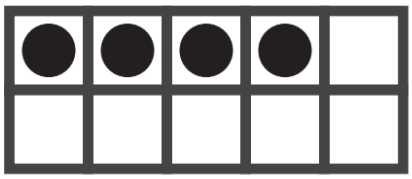


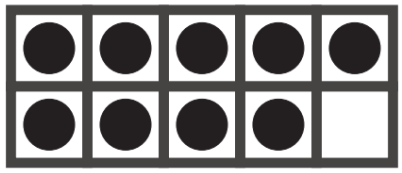


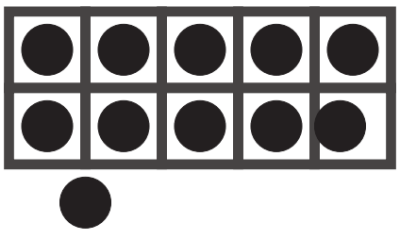


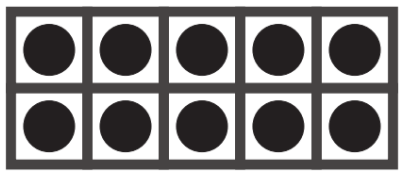


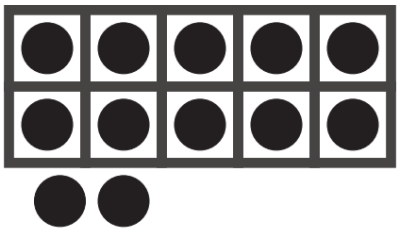












6-10 Comparing Numbers

Materials: set of number cards, greater and less than symbols made out of oak tag.

In this lesson, you will introduce the greater than/ less than symbols in the form of the alligator faces. Tell the students that the alligator always wants to eat the biggest amount. Demonstrate this concept. Turn over two cards. Show the students that the mouth will face the greatest number. Show the following you tube video to illustrate:

https://www.youtube.com/watch?v=M6Efzu2slaI

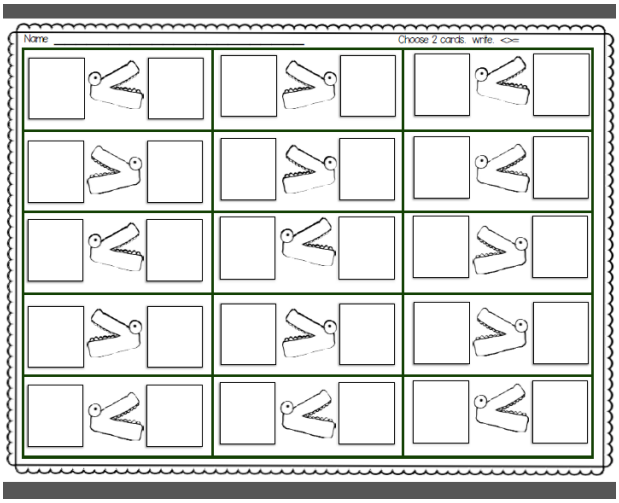
Have students work in pairs. Each child picks a color and gets those colored number cards. The game is exactly like top it, but children will use the greater than, less than symbol to illustrate which is more. The student that has the greater number gets both cards.

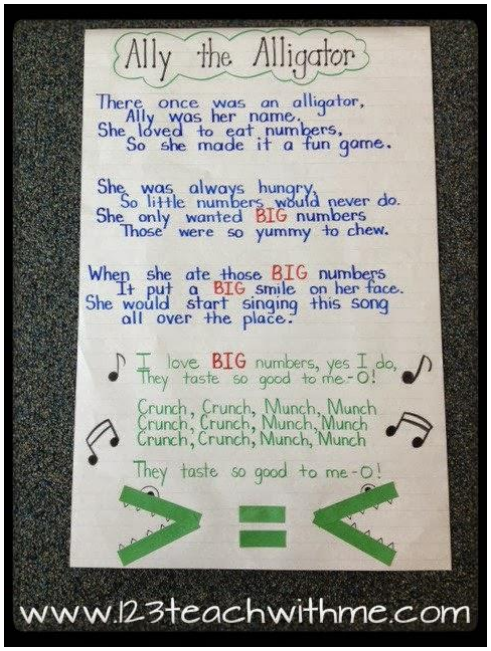
The number cards are in additional resources on the share drive (pg 4-12). You can use the alligator faces or make your own symbols for the students to use.

6-13 Comparing Numbers Day 2

Materials, one or two dice per child, recording sheet

Students will compare numbers and record their finding using the correct symbol. Students will work with a partner. Each child rolls a dice. The children decide which number is bigger. Then the students transfer the numbers to the recording sheet, putting the numbers in the correct boxes to show which number is greater than the other number. Students who grasp this concept easily may be given 2 dice to roll at one time. The teacher should observe and model how to play the game. This game can later be placed in a math center for reinforcement.





6-14 Growing and Disappearing Train Game

The students have played this game with addition back in Unit 3. Today, you are going to add the minus sign to the game.

▷ In the *Growing and Disappearing Train Game* (adding and subtracting) players start with a train of 10 cubes. They take turns rolling the mixed red and green die and either subtracting cubes from or adding cubes to their trains. For example, if a red 2 is rolled, the child removes two counters from the train. If a green 2 is rolled, two counters are added to the train. The first child whose train disappears is the winner. Players must roll the exact number of cubes to remove in order to win.

One die will have plus and minus symbols on it. The other die will have numbers 0-5 on it.

Unit 7

Lesson 7-1 Domino Addition

Materials: real or paper dominoes, number cards 0 -12.

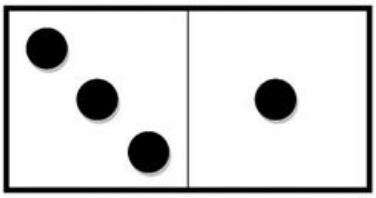
Show the students a domino and point out that it is divided into two parts. Explain that in this activity, all of the dots from both parts should be counted or added together to find the total.

Have the students arrange the number cards in numerical order from 0-12, allowing enough space to place several domino cards under each number. Choose two dominoes that have an equal total number of dots to use as examples. Hold up the first domino and ask: *How many dots are on this domino altogether?* Have the students share different strategies for finding the total, such as counting all of the dots, counting on from the number of dots on one side of the domino, or mentally adding the numbers on the two parts. Place the domino under the number card that matches its total. Repeat with the second domino. Then ask*: How are these two dominoes the same? How are they different?* Highlight that the two dominoes show different ways of making the same number.

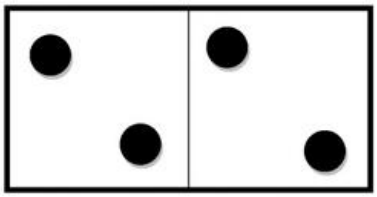
Mix up the remaining dominoes and place them facedown. Have the students one at a time choose a domino, place it under the correct number and explain their strategy for finding the total. Then give pairs of students a set number of domino cards and number cards. Have them work together to put the numbers in order, and match up the dominoes.

Conclude by asking the students to recall strategies that were used to figure out the number of dots on the cards. Show the students how to make number sentences with the dominoes, in order to record their findings. Model the number sentence highlighting how it matches the domino. You may want to complete the following activity with the students. Revisit this activity in math centers. A set of domino cards is found on the share drive.

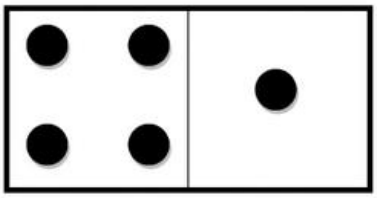
Count the number of dots on each domino and fill in the total.



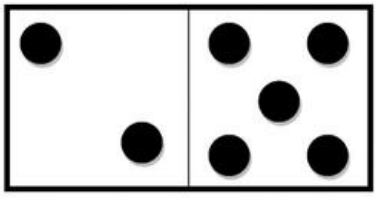
How many spots? _____



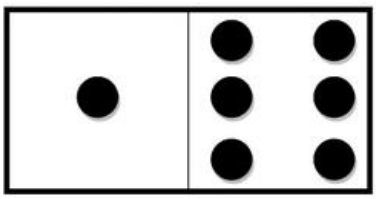
How many spots? _____



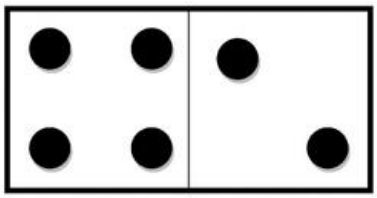
How many spots? _____



How many spots? _____

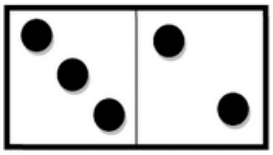


How many spots? _____



How many spots? _____

Count the number of dots on each domino and fill in the total.



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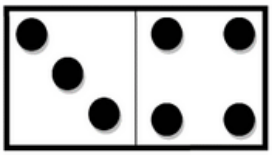

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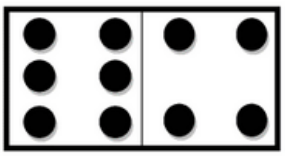

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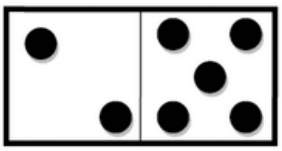

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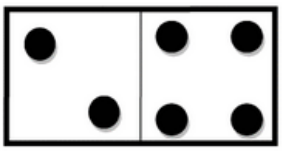

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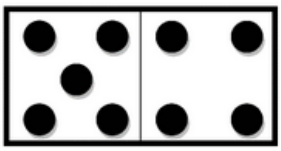

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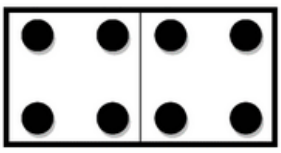

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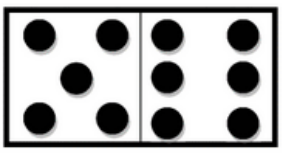

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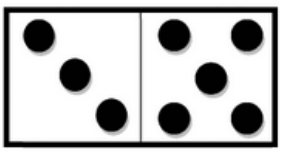

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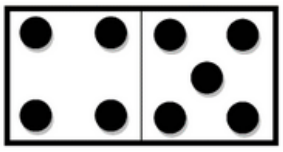

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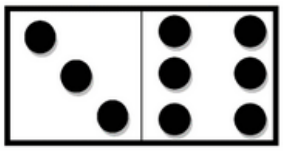

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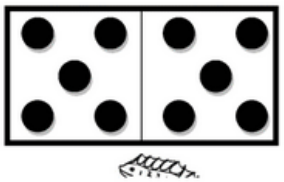


_____ + _____ = _____

Lesson 7-2 Model and write numbers 10 to 20 as number bonds.

Adapted from Engage NY

Materials: Hide Zero Cards: one 10 and numerals 1–9 both for the teacher and for each pair of students, at least 20 two-sided counters for each pair of students in a clear plastic bag (white beans spray painted red on one side, commercial two-sided counters, etc.), laminated number bond, so that the students can reuse.

Introduce lesson with the following activity:

Decompose Teen Numbers

Materials: Hide Zero cards

Note: Breaking apart teen numbers with the Hide Zero cards prepares students to work with number bonds in today's lesson.

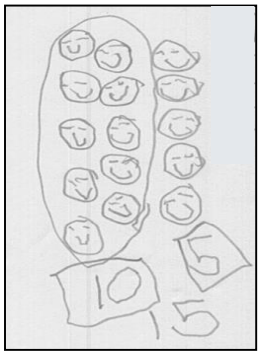
T: (Show 12.) Say the number the regular way.
S: 12.
T: (Separate the cards.) Say 12 the Say Ten Way.
S: Ten two.

Continue with the following possible sequence: 13, 14, 19, 11, 10, 15, 17, 16, 18.

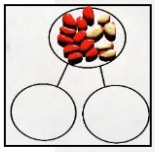
Pose this problem to the students:

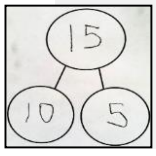
Gregory drew 10 smiley faces and 5 smiley faces. He put them together and had 15 smiley faces. Draw the 15 smiley faces as 10 smiley faces and 5 smiley faces. Then, draw 15 with Hide Zero cards when the zero is hiding and when the zero is not hiding.

Note: Word problems involving quantities above 10 begin in Grade 1. Many of the application problems in Module 5 are simply decomposition and composition experiences (**K.NBT.1**). Note that the problems do not ask, "How many in all?" or "How many?" Also note that there is no unknown in problems of this type.



T: Here is Gregory's number with my Hide Zero cards.
T: Show Gregory's number with your 2-sided counters in the "total place" of your number bond. Make 10 ones a different color from the other ones.
S: (Students do so.)
T: Our number bond is not complete! We haven't shown the parts!
T: What number parts are made by the two colors?
S: 10 ones and 5 ones.
T: Show those 2 parts with your own Hide Zero cards.
T: (See the picture at the right.) Is 15 beans the same number as 10 and 5?
S: (Give the students time to recount.) Yes.
T: Now, our number bond is correct!
T: Let's switch it. Slide your counters down to be the two parts: 10 ones in a part and 5 ones in a part.
T: Show fifteen with your Hide Zero cards in the total place of your number bond.
T: Does 15 tell us the total number of beans in the 2 parts?
S: (Give students time to count.) Yes.
T: Now, our number bond is correct again!
T: Let's replace the Hide Zero cards with a written number. Slide the cards off the total place. What number will you write?
S: 15.
T: Slide off your beans from the parts. What numbers will you write to take their place?
S: 10 and 5.
T: Is 15 the same as 10 and 5?
S: Yes.
T: What is the total?
S: 15 (or ten five).
T: What are the parts?





S: 10 and 5.

T: 15 is the same as ten five! Our number bond is correct again!

T: Use your beans and Hide Zero cards to make number bonds that are correct.

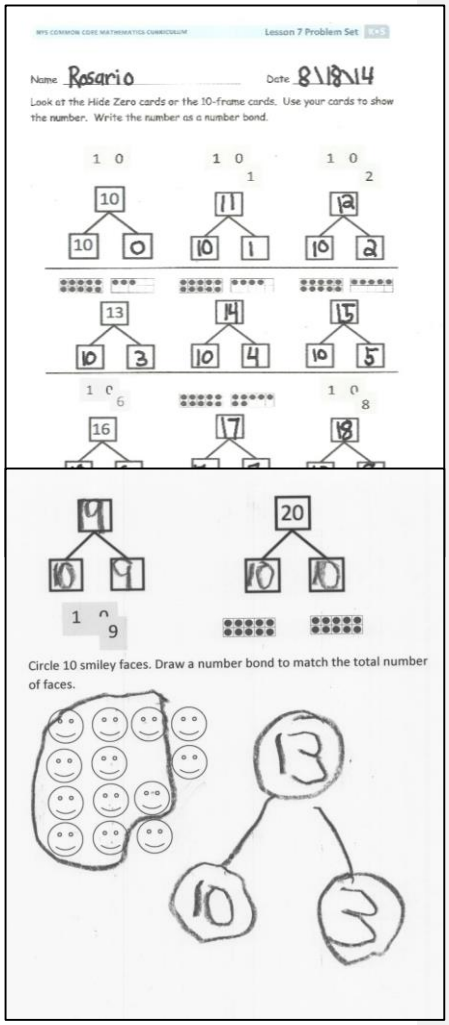
Repeat the sequence with different numbers of beans. Let the students go to work independently as they are able while guiding a smaller group that still needs guided practice. Do not let the equality be unresolved. For example, their number bond is not correct if they have 10 beans and 5 beans but nothing in the total place. The parts must always be equal to the total. Students may realize they can switch the order of the 10 ones and extra ones. That is good!

Lesson Follow Up

Students should do their personal best to complete the Problem Set within the allotted time.

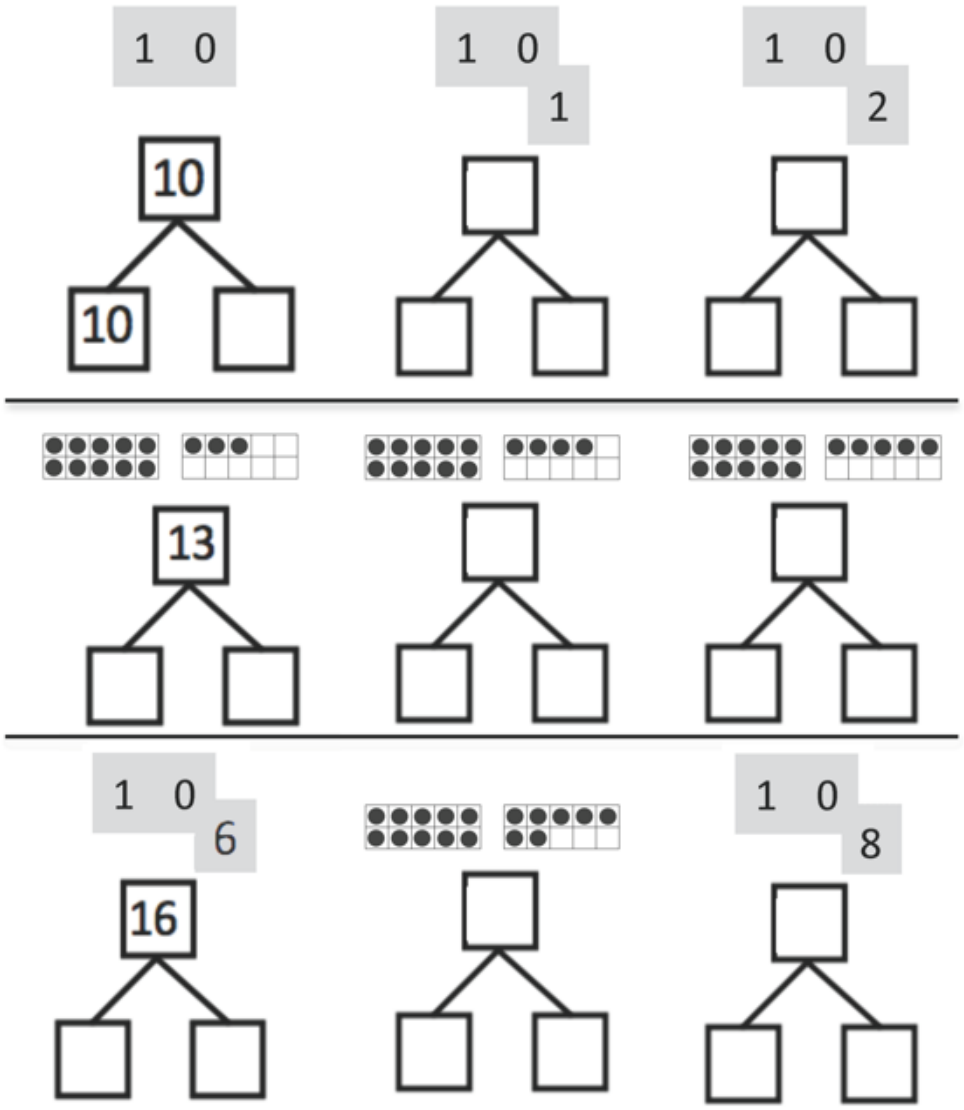
Be sure that students whisper speak as they work. For example, when saying "ten two," they write the 1 and then the 2. By saying "ten two" simultaneously, they internalize the meaning of the 1 as standing for 10 ones. After the students have completed the follow up activities, end the lesson with a discussion.

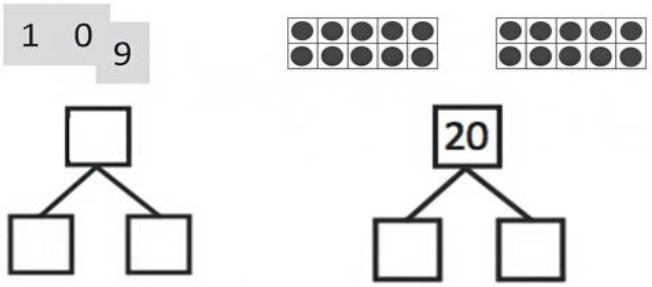
- How are the number bonds and Hide Zero cards helping you to understand the numbers from eleven to twenty?
- How does counting the Say Ten Way help you understand?
- How is this 1 in thirteen the same as this 1 in 19? When you made your number bonds, what stayed the same and what changed?
- When you see the number eleven, how are those two 1s different?



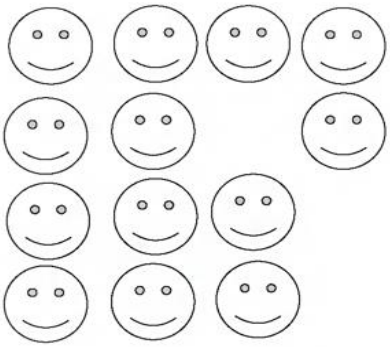
Name _____ Date _____

Look at the Hide Zero cards or the 10-frame cards. Use your cards to show the number. Write the number as a number bond.

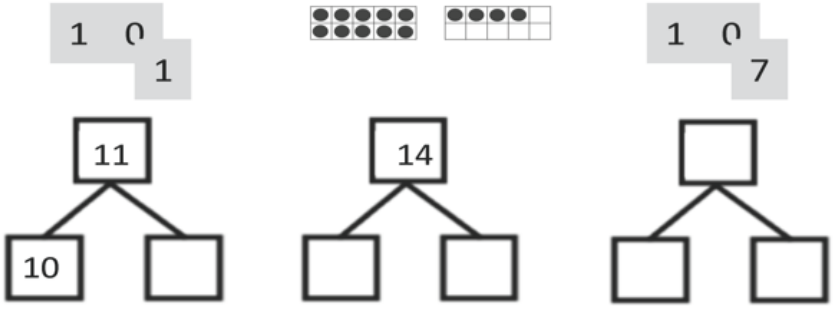




Circle 10 smiley faces. Draw a number bond to match the total number of faces.



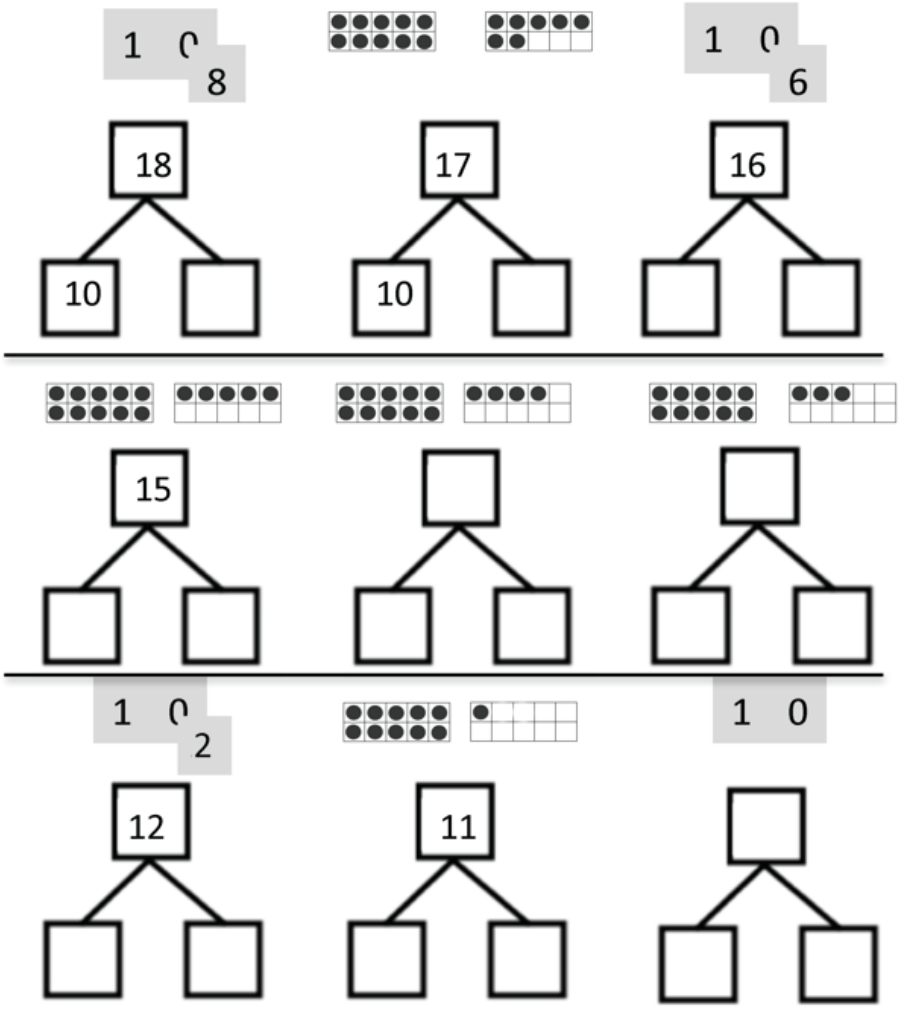
Look at the Hide Zero cards or the 10-frame cards. Use your cards to show the number. Write the number as a number bond.

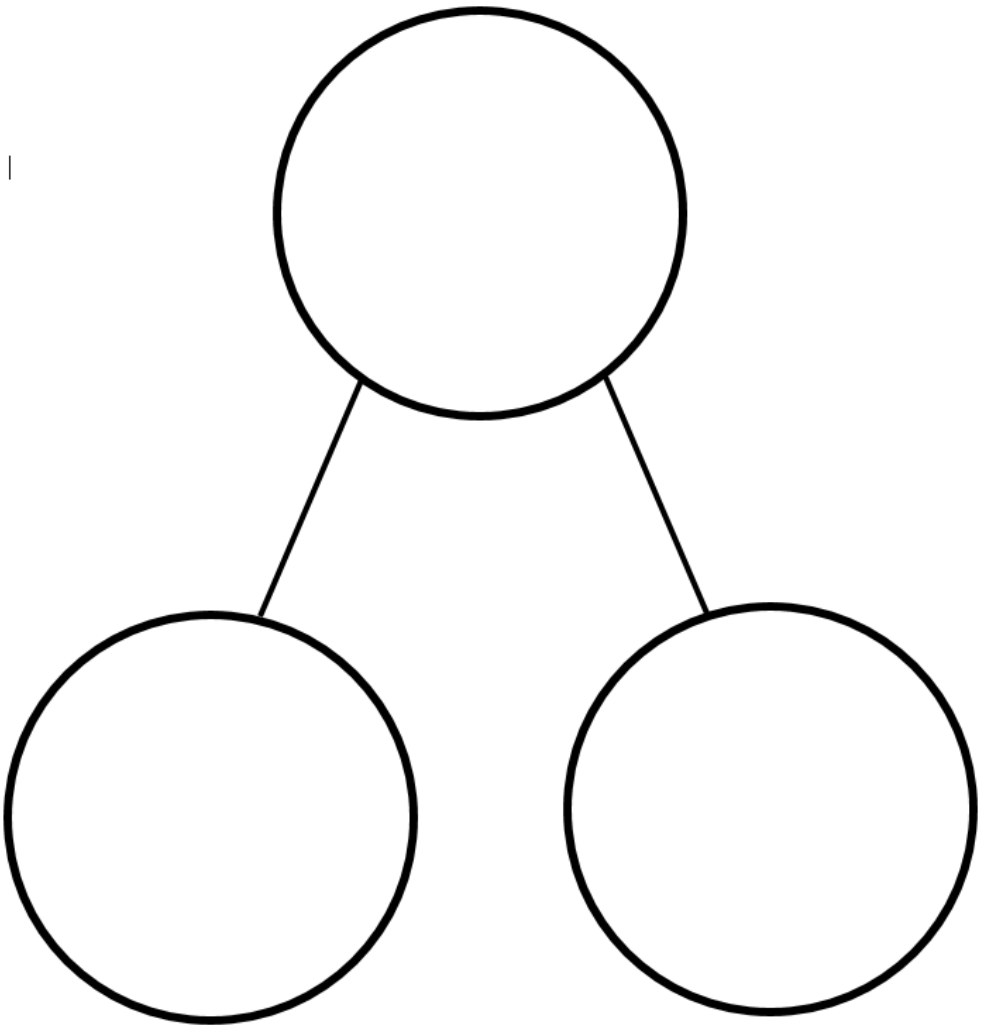


Homework

Name _____ Date _____

Look at the Hide Zero cards or the 10-frame cards. Use your cards to show the number. Write the number as a number bond.



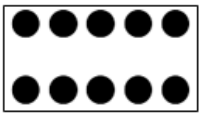
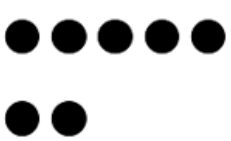
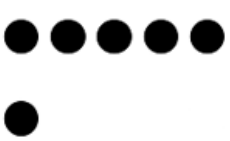
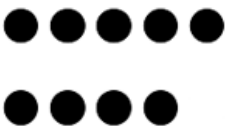
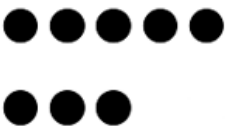


Hide Zero cards. Copy double-sided.
Numerals.

1	0		
0	1	2	3
4	5	6	7
8	9		

Hide Zero cards. Copy double-sided.

5-groups

7-3 Model teen numbers with materials from abstract to concrete.

Materials: Per pair of students: a bag of Hide Zero cards (1 ten and numerals 1–9), 2 sets of 10 linking cubes with 10 in one color and 10 in another color, a bag of ten-frame cards), and a personal white board for each student

Begin the lesson with this activity:

Teen Number Bonds

Materials: (T) Number bond cards

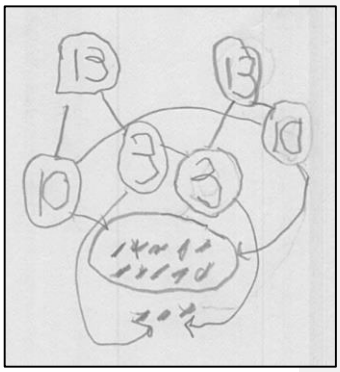
Note: This activity advances the work with teen numbers by allowing students to see that the parts of a number bond can be switched around, and the total remains the same.

T: (Show a number bond with 10 and 5 as parts.) Say the number sentence starting with 10.
S: 10 and 5 makes 15.
T: Flip it.
S: 5 and 10 makes 15.

Continue with 10 and 1, 10 and 9, 10 and 4, 10 and 8, 10 and 2, 10 and 6, 10 and 3, 10 and 7.

Then pose the following problem to the students:

Peter drew a number bond of 13 as 10 and 3. Bill drew a number bond, too, but he switched around the 10 and 3. Show both Bill's and Peter's number bonds. Draw a picture of thirteen things as 10 ones and 3 ones. Explain your thinking to your partner about what you notice about the two number bonds.



Materials: (S) Per pair of students: a bag of Hide Zero cards (1 ten and numerals 1–9) 2 sets of 10 linking cubes with 10 in one color and 10 in another color, a bag of ten-frame cards, and a personal white board for each student

Part 1: Modeling Teen Numbers 11–20 with Linking Cubes and Hide Zero cards.

T: Partner A, open the bag with the Hide Zero cards, and put them on your work mat. With your partner, put them in order from 10 to 1. (Wait.)
T: Partner B, open the bag with the linking cubes, and put them on your work mat. Work with your partner to put the cubes above the matching Hide Zero cards. (Wait.)
T: (Write 11 on the board.) What number is this?
S: Eleven!

T: How would you say it the Say Ten way?

S: Ten one.

T: Please write the number 11 on your personal white board. When I ask you to show me your board, show me.

T: Now, I want you to work with your partner to show the number. Partner A, show the number with the Hide Zero cards, and remember to hide the zero!

T: Partner B, show the number with the linking cubes. Use one color to show 10 ones and the other color to show the other ones.

T: Check each other's work. Explain why you're both showing 11.

Repeat the process with the numbers 12–19.

Part 2: Modeling Teen Numbers 11–20 with Ten-Frame Cards and Hide Zero cards.

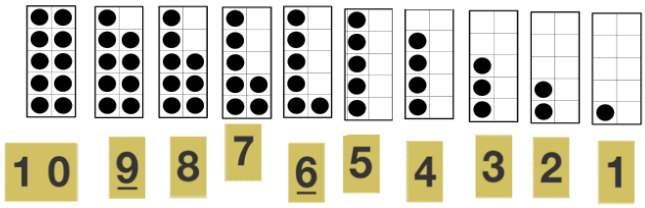
T: (Write 15 on the board.) What is the number?

S: Fifteen!

T: The Say Ten Way?

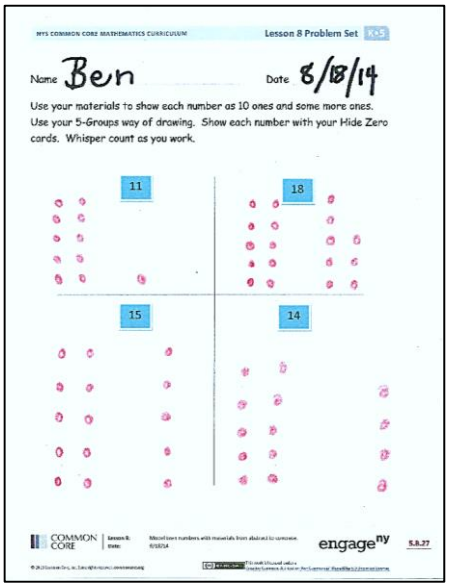
S: Ten five!

T: Write 15 on your personal white board, and then show me.



T: This time, Partner A is going to show the number with ten-frame cards and Partner B is going to show the number with the Hide Zero cards. After you check each other's work, you'll switch.

Repeat the process above with numbers 11–19.



NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 8 Problem Set K•5

Name Ben Date 8/18/14

Use your materials to show each number as 10 ones and some more ones. Use your 5-Groups way of drawing. Show each number with your Hide Zero cards. Whisper count as you work.

11

18

15

14

COMMON CORE | engage^ny | 8.8.27

Closure:

Students should then independently complete the follow up activity. After the activity is complete use the following questions for discussion.

- How can you prove 20 is the same as 2 ten?
- When you write the number 18 on your personal white board, how is it the same and different from the number 18 when you show it with Hide Zero cards or 5-group cards?
- Which is your favorite way to show a number—with linking cubes, the Hide Zero cards, the 5-group cards, or just writing the number? Why?
- Count up to 20 in standard form, and count back to 0 the Say Ten Way.
- Who can prove that the 1 in 14 is 10 ones, not 1 one?

Name _____ Date _____

Use your materials to show each number as 10 ones and some more ones. Use your 5-groups way of drawing. Show each number with your Hide Zero cards. Whisper count as you work.

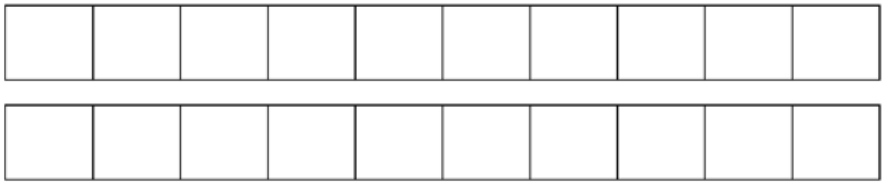
Name _____ Date _____

Use your materials to show the number as 10 ones and some more ones.

1 6

Use your cubes to show the number. Then, color in the cubes to match the number.

1 2



Homework

Name _____ Date _____

Draw a picture to show each number as 10 ones and some more ones.

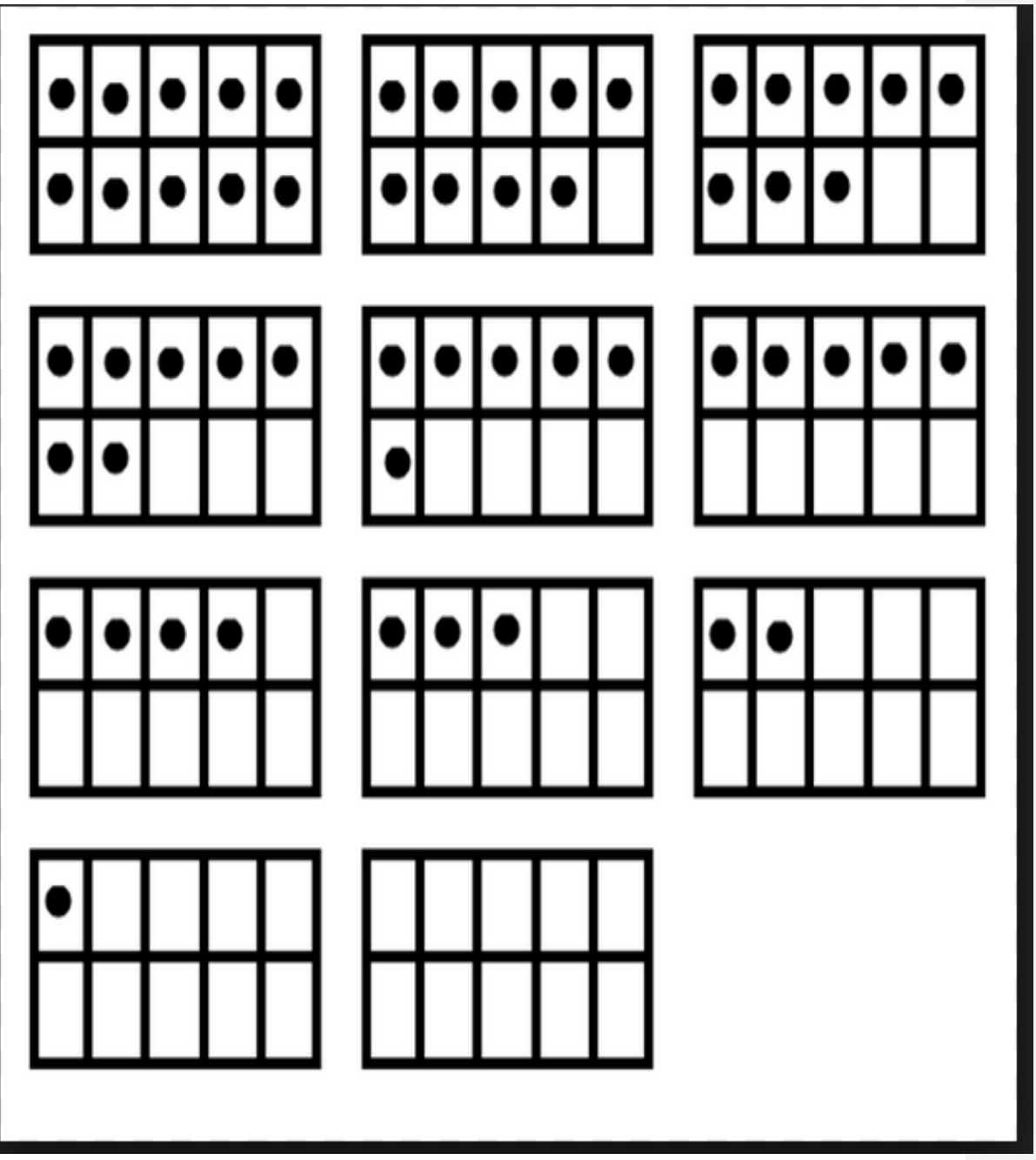
15	13
Ten seven	Ten one

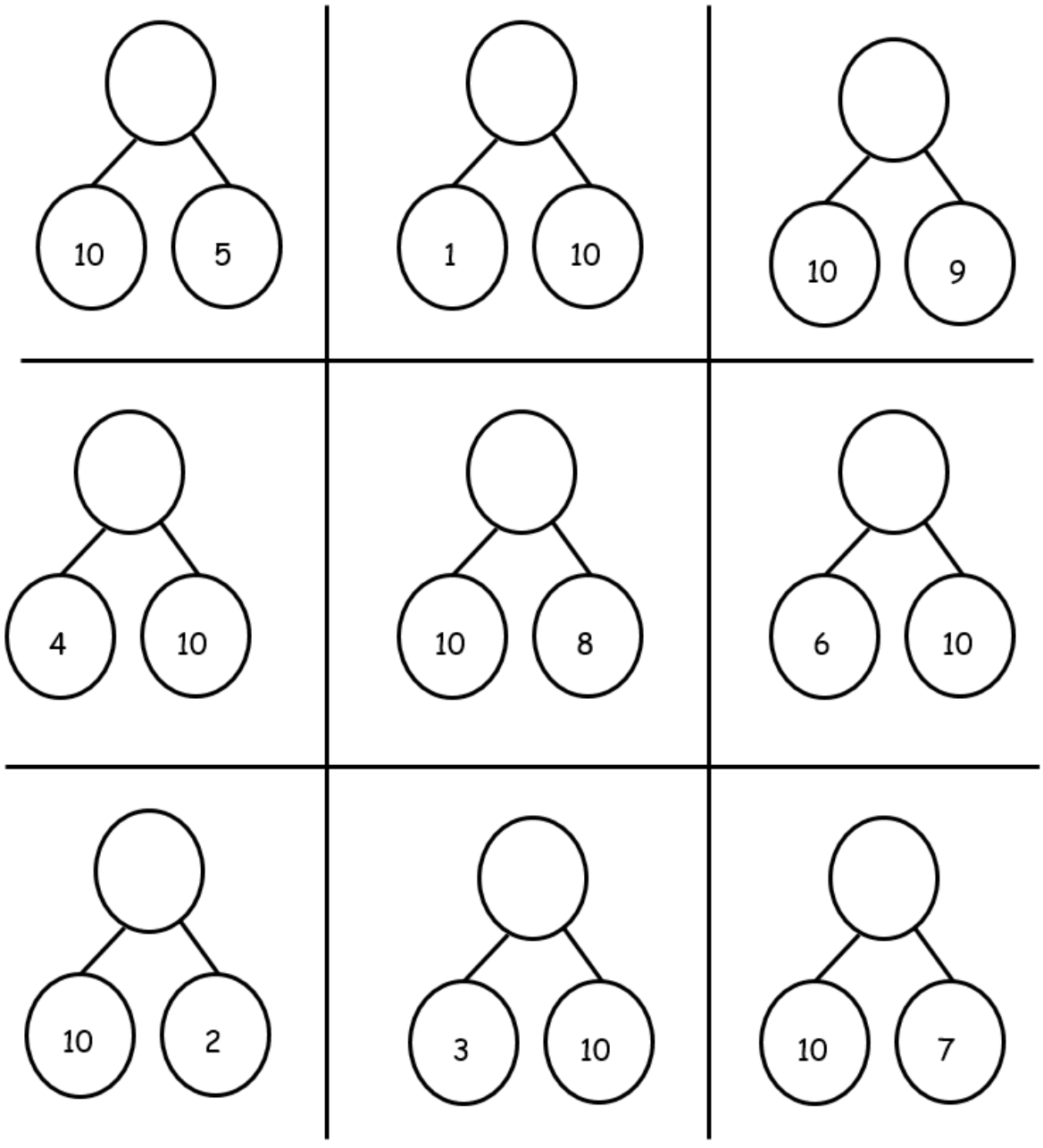
1 2

1 6

2 ten

Ten four





number bond cards

Lesson 7-5 Sorting

Whole Group Lesson

Begin this lesson with the entire class. Ask the students what does it mean to sort. Show them the attribute blocks. Place them on the elmo, so the class can see. Have a student come up and demonstrate one way to sort the blocks. Ask the student how the blocks were sorted. Create an anchor chart for sorting. Put the first way to sort the attribute blocks on the chart. Follow the procedure two more times, so that the students have sorted by size, shape, and color. Each time the students come up with a way to sort, add that to the anchor chart. The following is an example of an anchor chart that can be used in the classroom.

Once the chart is complete, show the students the different sorting mats they can use in a math center. Put out the mats and either pattern blocks or attribute blocks. Have them work with a partner to sort the blocks three different ways. The sorting mats are found on the share drive.

Lesson 7-8 Decomposing Numbers and Exploring Number Bonds to 10.

Materials: ten frames, number strips, die, and recording sheets

For this lesson, you will teach the students how to play the "Rolling 10 with Friends" game. A copy of this game is found on the share drive.

Rolling 10 with Friends

This hands on activity, is a fun way for students to 'count on' and explore number bonds to ten. It is an ideal activity for a math station or early finisher.

Before playing the game:

- Cut out the number strips and ten frames

**(for best results laminate the number strips and ten frame)

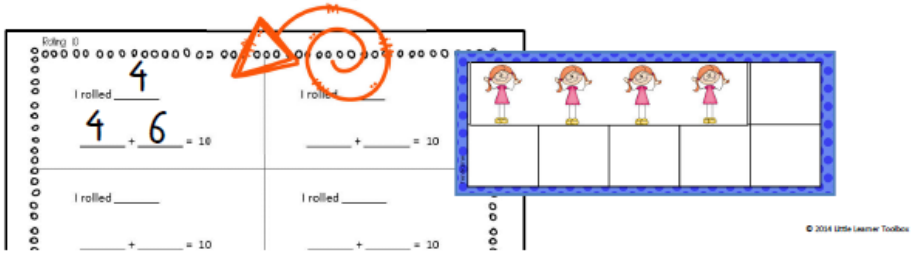
- Print out Rolling 10 Recording Sheets for each player
- Make and select one game die (1-6 or 4-9)

Rolling 10 with Friends

How to play:

- This activity can be used with one or more players. Each player needs a ten frame.
- The player rolls the die and records the number they have rolled on their recording sheet.
- Using the 'Friend' number strips they cover the number of spaces that they have rolled on the ten frame.
- They then count the remaining spaces in the ten square to solve - How many more to make 10? They record their answer on their recording sheet to compete the number sentence ___ + ___ = 10.

e.g. The player rolls 4. They record the number on their recording sheet. They cover 4 spaces on the ten frame. The player counts on to solve 'how many more do I need to make 10'? They record their answer



Rolling 10

I rolled _____

_____ + _____ = 10

I rolled _____

_____ + _____ = 10

I rolled _____

_____ + _____ = 10

I rolled _____

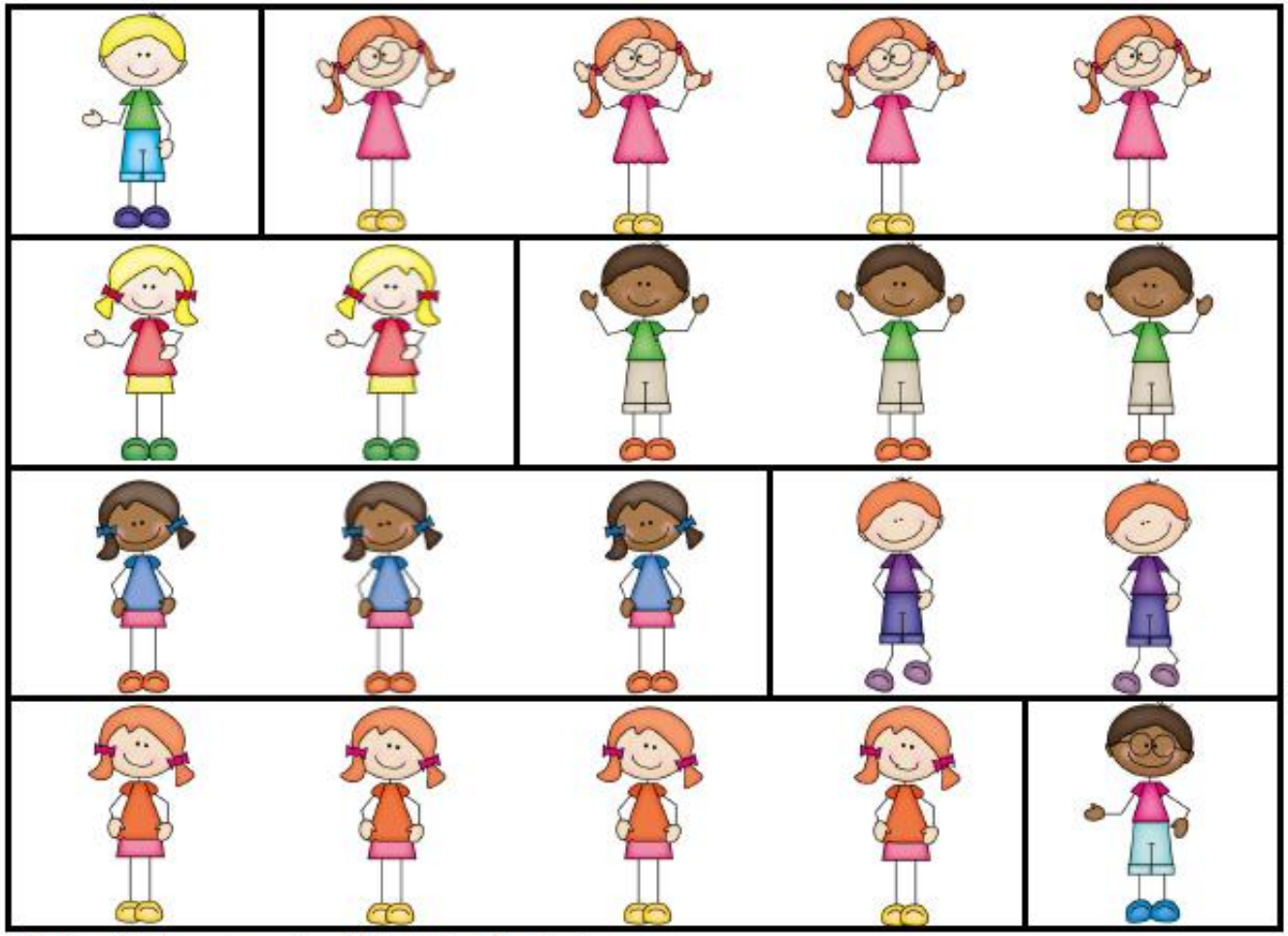
_____ + _____ = 10

I rolled _____

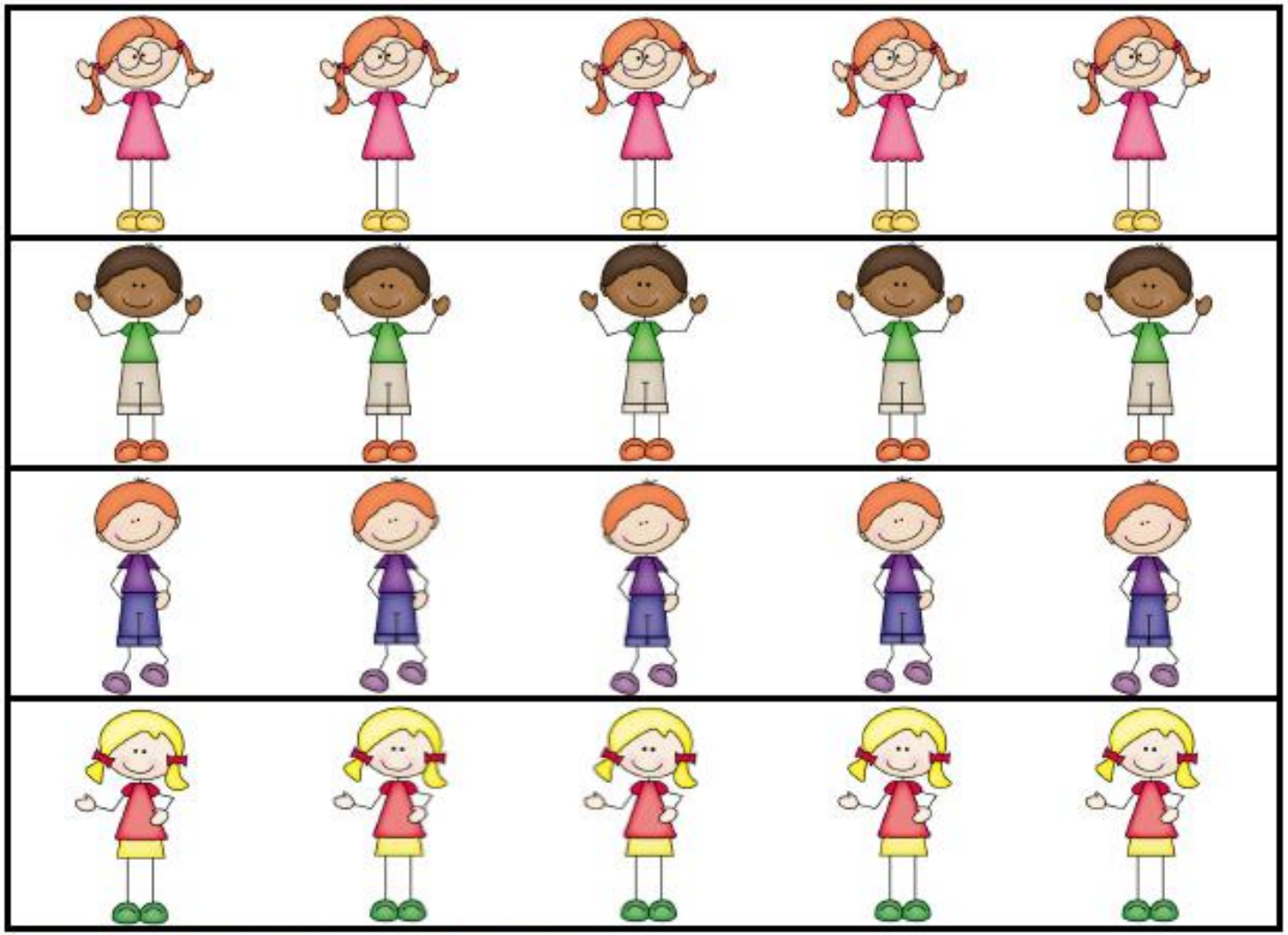
_____ + _____ = 10

I rolled _____

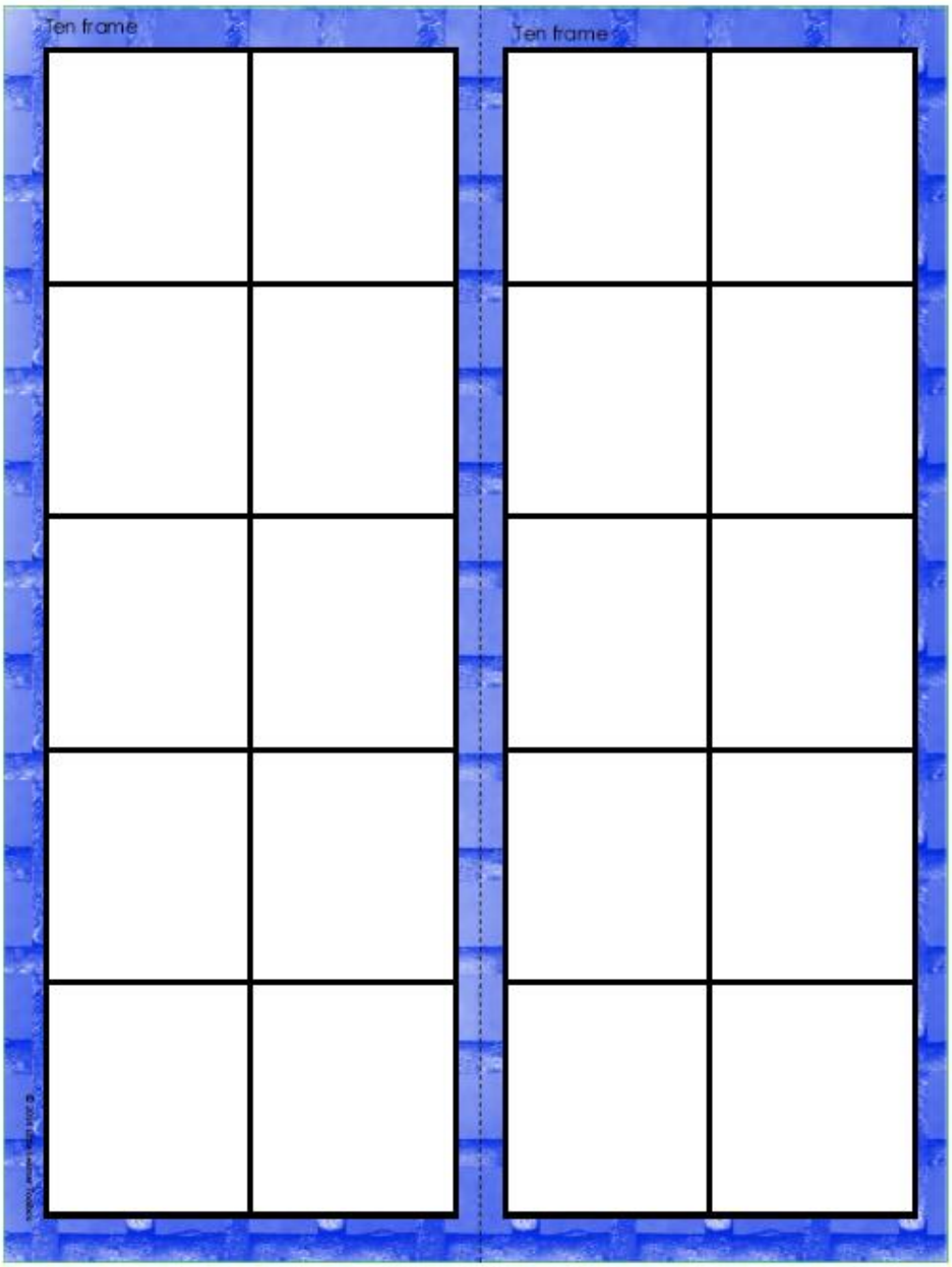
_____ + _____ = 10



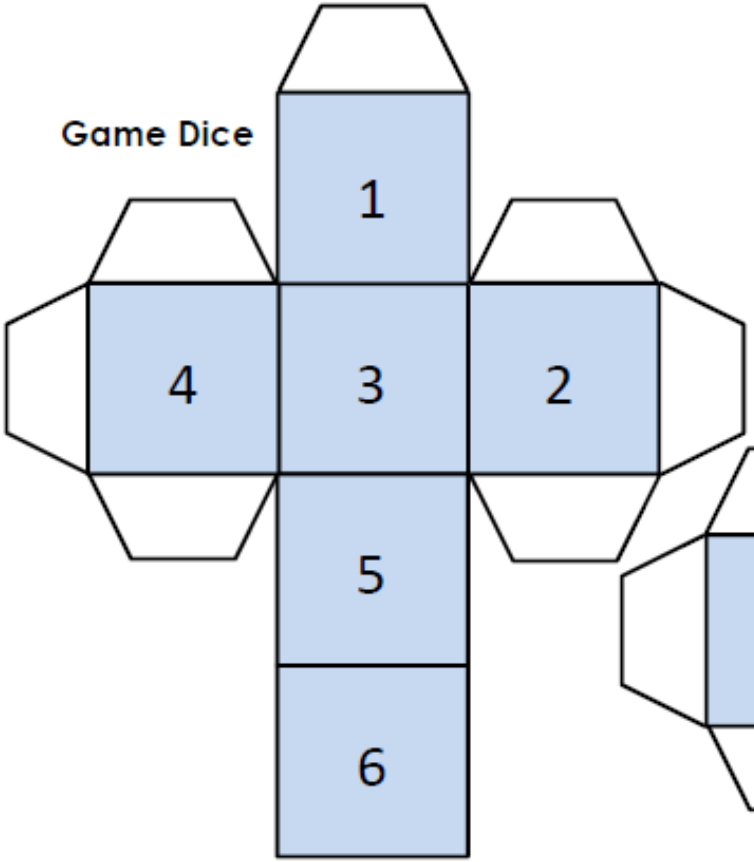
Making friends number strips 1-4 to explore the ten frame

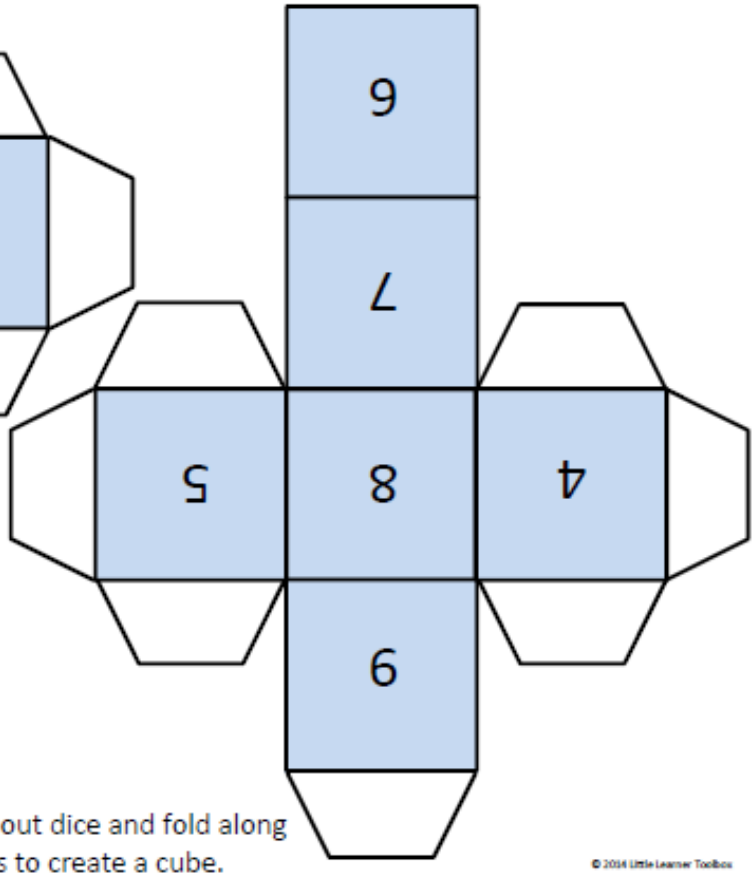


Making friends number 5 strips to explore the ten frame


Ten frame
Ten frame

Game Dice





Cut out dice and fold along lines to create a cube.

Rolling 10

I rolled _____

_____ + _____ = 10

I rolled _____

_____ + _____ = 10

I rolled _____

_____ + _____ = 10

I rolled _____

_____ + _____ = 10

I rolled _____

_____ + _____ = 10

I rolled _____

_____ + _____ = 10

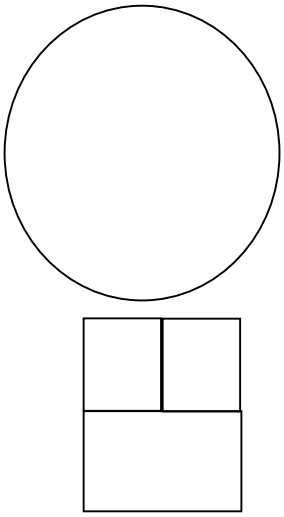
Lesson 7-9 Bead Collections

Materials: beads and pipe cleaners for each student to make a ring, recording sheet

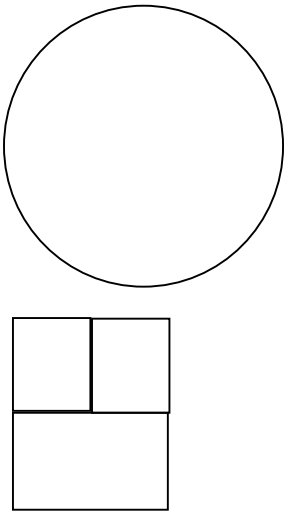
Place 7 objects, such as 7 pencils or 7 blocks, where everyone can see and count them. Ask a volunteer to separate the pile of objects into 2 piles and to count how many are in each pile (4 and 3, for example). Ask another child to separate the pile in a different way (5 and 2, for example). Keep separating the pile in different ways until all possibilities have been tried. Don't forget that one pile can have 0 objects. Have each child make a counting loop of 8 to 10 beads on a string or pipe cleaner. Be sure the loop is securely fastened. Demonstrate how to move the beads around the loop and group them to show different combinations. For example, on a 10 bead loop, children can move 8 to one side and 2 to the other, or have groups of 5 and 5, or groups of 6 and 2 and 2. Children should record the total number of beads on their loops on the recording sheet. Students will draw the beads on the loops, write the number bond, then the number sentence for each combination. They should draw at least 3 different ways they grouped the beads on the loops. Children can add more combinations by drawing more loops and beads on the writing. Have children take their bead loops home to show their families how to make different combinations. You may also want to make a set of beads for a math center.

Name_____

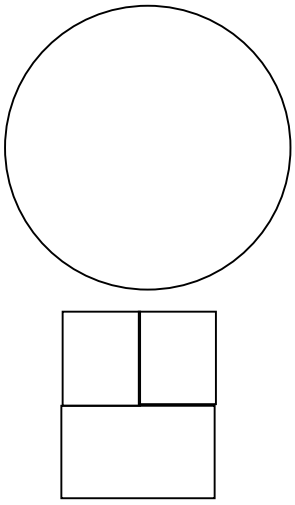
Bead Collection Recording Sheet



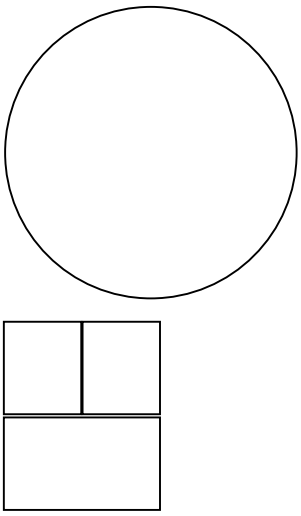
_____+_____=_____



_____+_____=_____



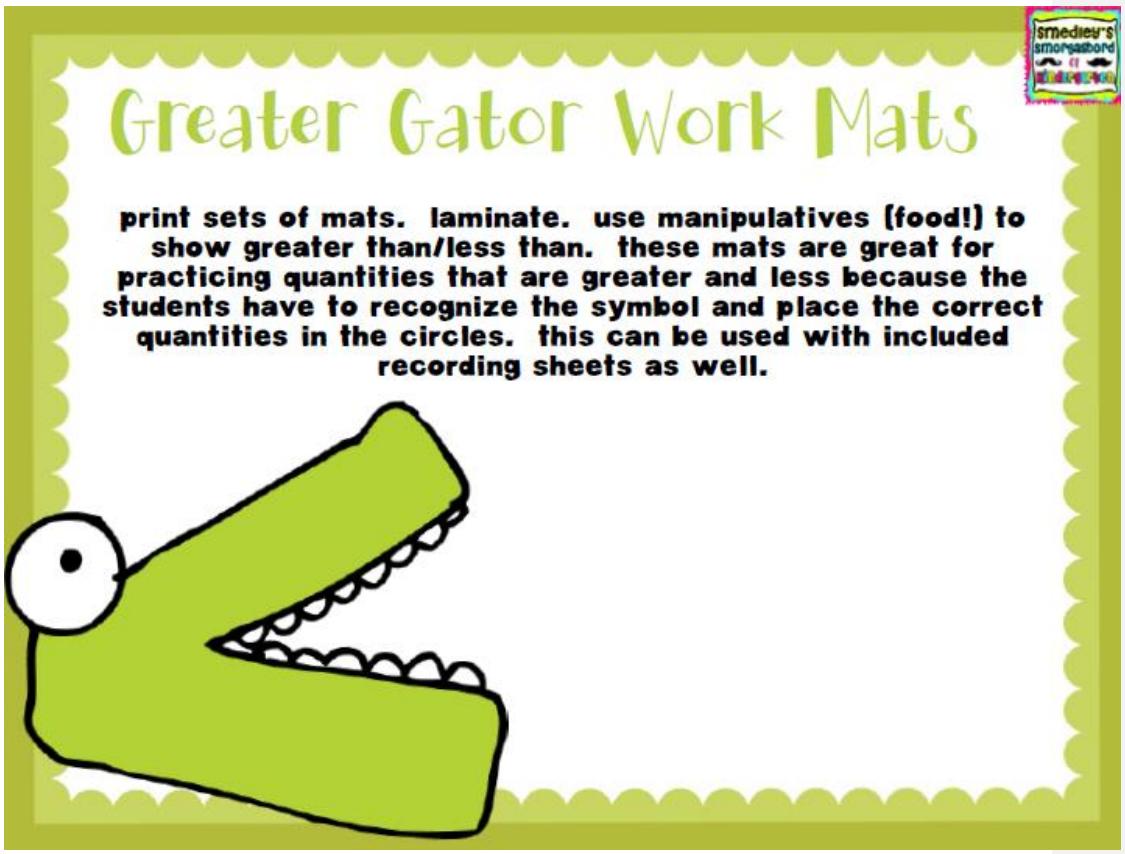
_____+_____=_____

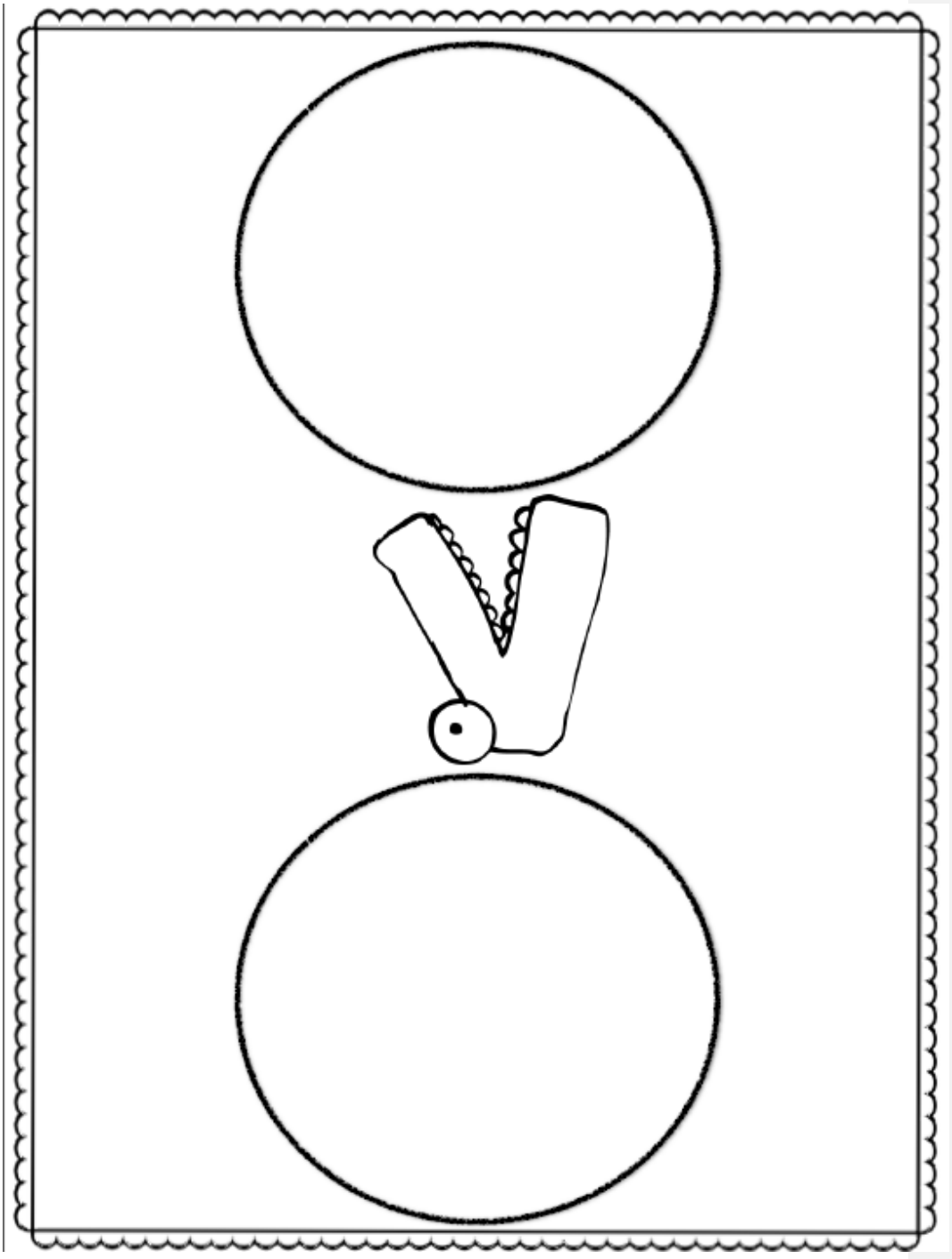


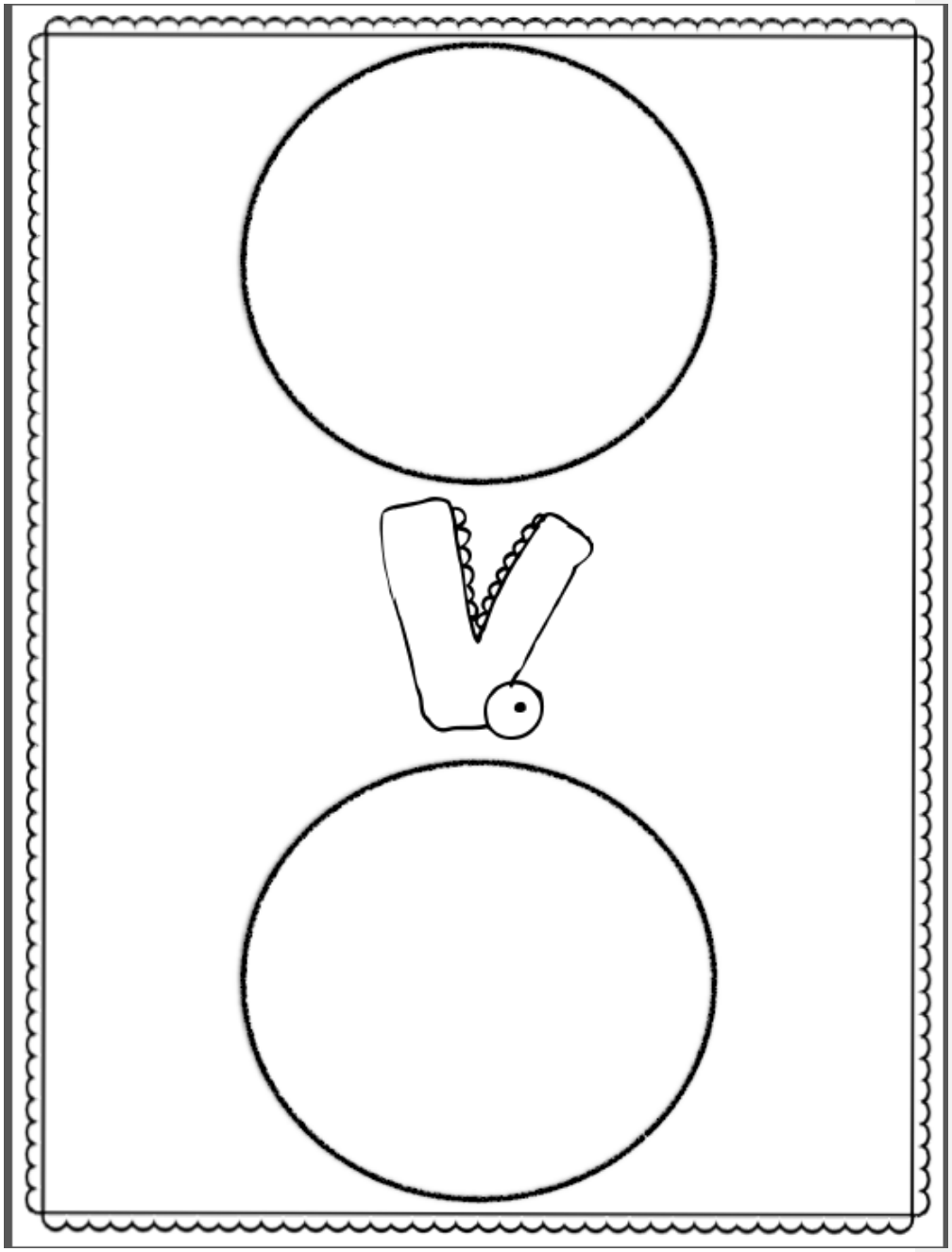
_____+_____=_____

Lesson 7-10 Greater Than/Less Than/ Equal to

Materials: greater than/ less than mats, small manipulatives

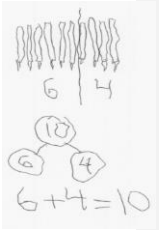






Lesson 7-16 Represent teen number compositions and decompositions as addition sentences.

Adapted from Engage NY



Each student was given 6 colored pencils and 4 regular pencils. How many pencils did each student get? Draw a picture, a number bond, and write a number sentence, too.

Materials: (S) Bag of twenty 2-color beans, personal white board with blank number bond (Lesson 7 Template) inside

T: Put 10 red beans in one part of the number bond. Put 3 white beans in the other part.

T: What is 10 ones and 3 ones?

S: 13 ones.

T: Say the number the Say Ten Way.

S: Ten 3.

T: Now, count 13 beans into the place where we show the total or whole amount.

T: So, we have 13 in two parts. What are the parts?

S: 10 and 3.

T: Talk to your partner. When we solved our story problem today, we had two parts. What is another way you already know to show a number in two parts?

S: We can show a number in two parts by making piles of things, like 10 things and 3 things. → We can show the number with a number bond. → We can make a picture. → We can show it with our Hide Zero cards. → We can show it with a plus sign.

T: Lots of good ideas. We can show the same idea in so many ways. When we are thinking about 13, what do you think is the clearest way to show the two parts of 10 and 3. Talk to your partner.

S: The number bond. It's so easy to see. → I like to see how big the number is, so counters are my favorite. → I feel big girls and boys do addition, so that's how I want to show it.

T: Each way we show a number in two parts helps us understand our number better. Addition is another way to do that.

T: (Write 10 + 3 = ____ on the board.)

T: What is 10 + 3? Give me a complete number sentence.

S: 10 + 3 = 13.

T: (Write 13 on the board to complete the equation.) Look at your number bond. How many beans do you have in the whole amount?

S: 13.

T: (Write 13 = ____ + ____ on the board.)

T: How many beans are in this part? Let's count.

S: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

T: How many beans are in this part?

S: 3.

T: Look at the parts. Complete this number sentence. (Point to 13 = ____ + ____.)

S: 13 = 10 + 3.

T: We started with the whole amount with our beans, so our number sentence also starts with the whole amount.

T: Clear your boards. Show 10 red beans and 5 white beans in the two parts.

T: Now, count to find out how many beans you will put to show the total. It needs to match the amount in the parts.

S: (After counting.) 15.

T: Count that many beans into the place where you put your total.

T: (After counting.) What is another way to show the two parts and the total?

S: 10 + 5 = 15.

T: (Write 10 + 5 = 15 on the board.)

T: Do you have the same number of beans in the parts as you have in the place for the total?

S: Yes!

T: When 15 is split into two parts, is it the same as 10 and 5? Then, your number bond is true!

T: Clear your boards. This time, use your marker to write 19 where we show the whole. Let's put this number in two parts.

T: Show 10 red beans as one part. (Pause while students place the beans.)

T: Count out the beans you need to put in the other part to get to 19.

S: (After counting.) 9.

T: What is one number sentence that tells about this number bond?

S: 10 + 9 = 19.

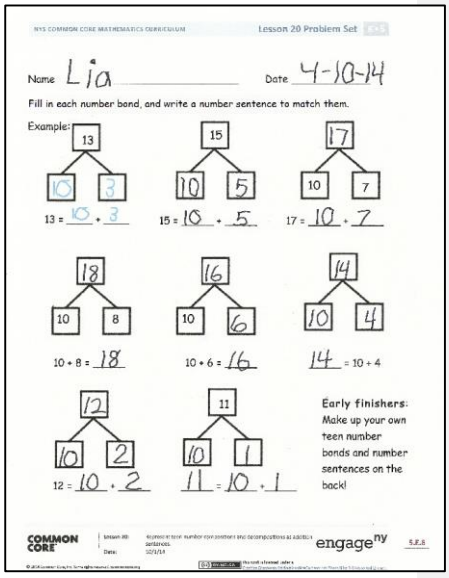
T: This time, start with the total, so we really feel that big number splitting into two parts.

S: 19 = 10 + 9.

Continue in this manner with students creating and talking about other teen number bonds and their matching addition sentences

Students are then to complete the independent practice for this activity.

Lesson Objective: Represent teen number compositions and decompositions as addition sentences.


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 20 Problem Set

Name Lia Date 4-10-14

Fill in each number bond, and write a number sentence to match them.

Example:

13 = 10 + 3

15 = 10 + 5

17 = 10 + 7

18 = 10 + 8

16 = 10 + 6

14 = 10 + 4

12 = 10 + 2

11 = 10 + 1

Early finishers: Make up your own teen number bonds and number sentences on the back!

COMMON CORE engage^ny

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

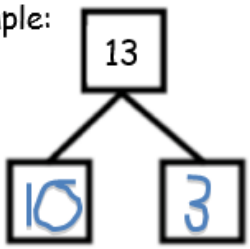
Any combination of the questions below may be used to lead the discussion.

- In a number bond, which number is larger—the whole or a part?
- Explain how the teen numbers are 10 ones and some more ones.
- Look at each number bond as I say the whole. You read the number the Say Ten Way; for example, I say 13, and you say ten 3.
- Mental math: I say 16; you say 10 + 6. I say 17; you say…? I say 19; you say…?
- What are we doing with the parts when we add? Are we putting them together or taking them apart?

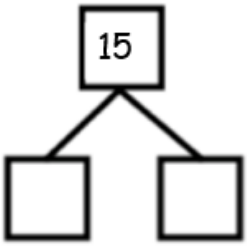
Name _____ Date _____

Fill in each number bond, and write a number sentence to match them.

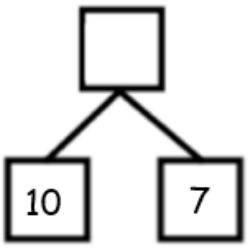
Example:



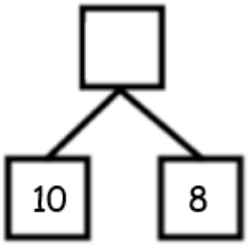
13 = 10 + 3



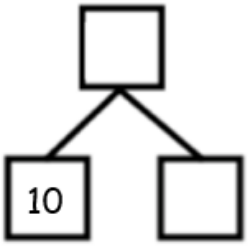
15 = _____ + _____



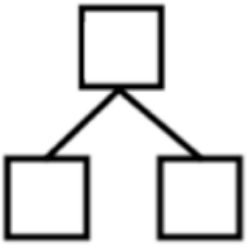
17 = _____ + _____



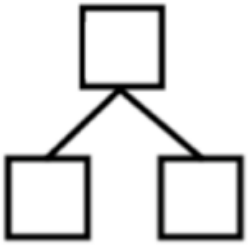
10 + 8 = _____



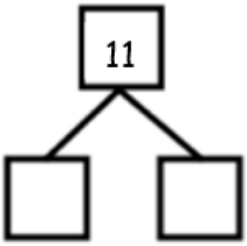
10 + 6 = _____



_____ = 10 + 4



12 = _____ + _____

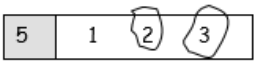


_____ = _____ +_____

Early finishers: Make up your own teen number bonds and number sentences on the back!

Name _____ Date _____

The first number is the whole. Circle its parts.

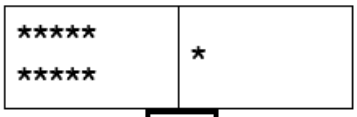


12	10	6	2
11	1	10	8
14	4	2	10
18	1	10	8
10	10	1	0
20	10	2	10

HOMEWORK

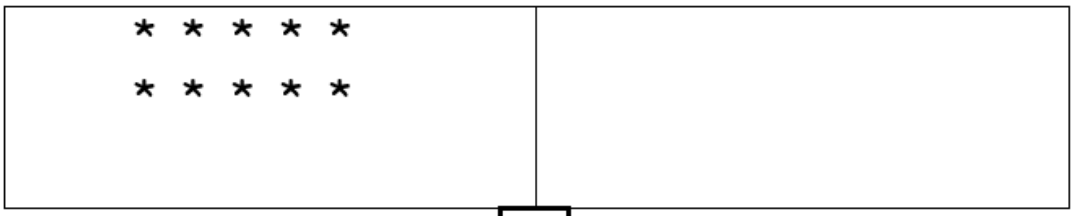
Name _____ Date _____

Draw stars to show the number as a number bond of 10 ones and some ones. Show each example as two addition sentences of 10 ones and some ones.

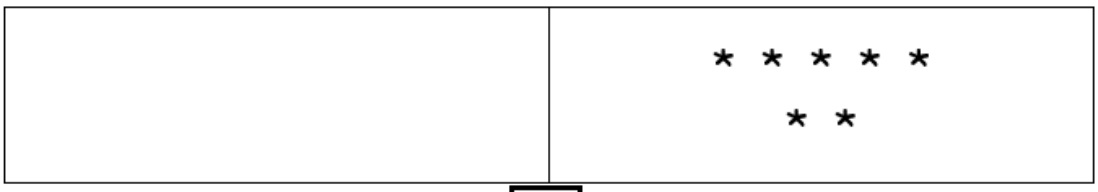


11

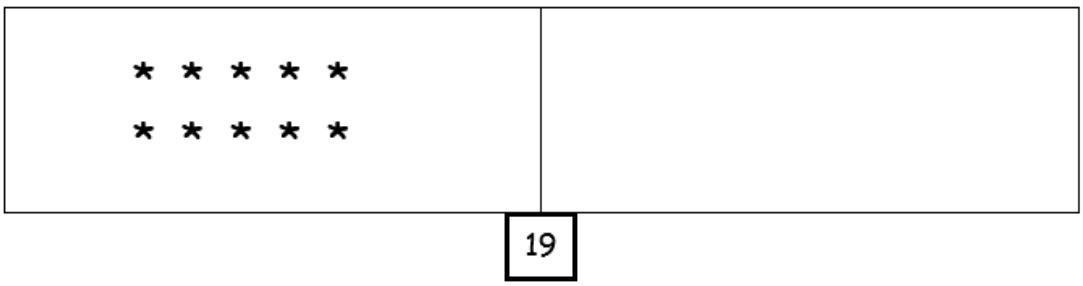
10 + 1 = 11
11 = 10 + 1



15



17



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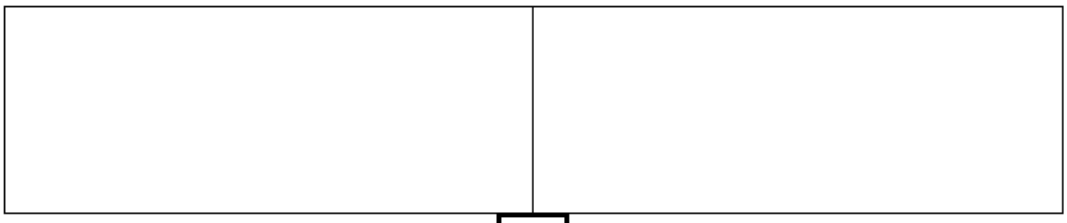

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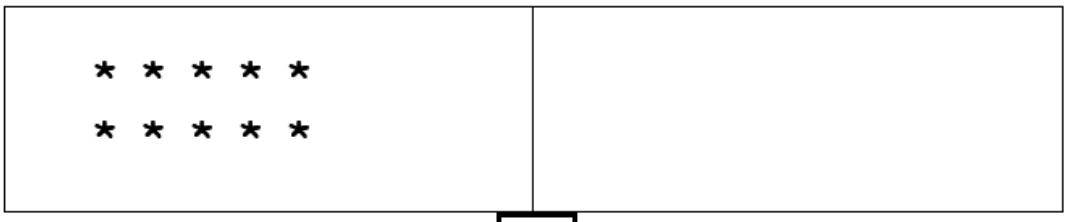

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