First Grade Numeracy Board Activities

Quarter 4

2010-2011

Each student is highly educated, prepared for leadership and service, and empowered for success as a citizen in a global community.

Numeracy Board
Grading Period __4__ Week __1__

Materials:

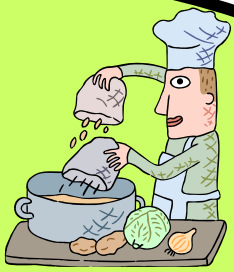
- Picture "Hoops"
- Hundred chart
- Index cards
- Number line 0-30; 1 for each student
- Base ten blocks; rods and units
- Logic puzzle Bean Salad
- 2 clear plastic bags
- Cubes/centimeter blocks
- Unifix® cubes
- Blank "Number of the Day" sheet
- Dot array cards
- Sentence strips

Extra Questions for "Hoops":

1. If the basketballs were divided equally, how many balls would each person get? (*1*) How many would be left over? (*1*)
2. Find the tallest blue building. How many windows are there? (*10*) What are different ways to count all of the windows? (*by 1's, 2's, 5's, 10's – looks like one full ten frame*)
3. Write a number sentence to show how many players are on the basketball courts. (*4 + 1 = 5*)
4. If two players can sit on a bench, how many more benches are needed for every player to have a seat? (*1*)
5. What season is it in the picture? How do you know? (*Answers will vary.*)
6. Write a repeated addition sentence to show how many flowers are in the picture. (*3 + 3 + 3 = 9 or 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 9*)
7. If there were two more pots of flowers and each pot has 3 flowers in it, how many flowers would there be in all? (*15*)
8. What shapes do you see in the picture? (*rectangles, circles, etc.*)
9. If you add the numbers on the jerseys, what would the total be? (*33*)

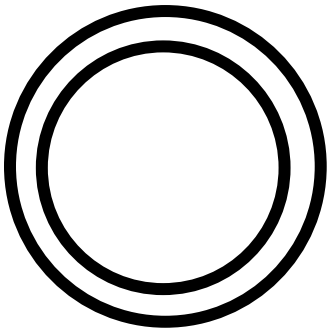
Hoops

Bean Salad

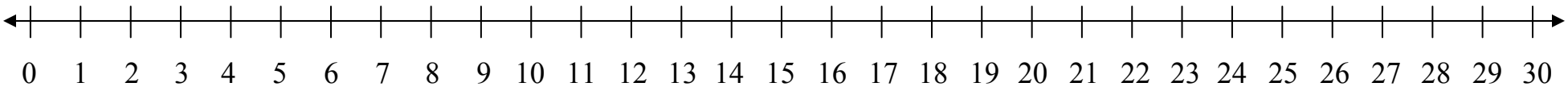


There are 37 beans.
Seven are red beans.
The rest are black, white and pinto beans.
There is an equal number of each of these beans.
How many black beans are there?
How many white beans are there?
How many pinto beans are there?

Number of the Day



0 – 30 Number Line



Numeracy Board
Grading Period __4__ Week __1__

Monday

Daily Sign-In:
Create the following sign-in:
Write a number on the chart that has more than 2 tens but less than 8 tens.

Ask students:

1. Do all of the numbers fit the rule? Why or why not? (*Answers will vary.*)
2. Is there something we could do to make it easier to talk about the numbers? (*Organize them in some way. Take suggestions for how to organize the numbers and then show how they could be organized. For example, a t-chart could be made with numbers less than or equal to 50 and numbers greater than 50 or columns could be made for the numbers based on the number in the tens place.*)
3. What is the biggest number on our sign-in? What is the smallest? How do you know? (*Answers will vary.*)
4. Could we make a number in the hundreds that follows our rule? (*Yes, an example would be 143. It has more than 2 tens but less than 8 tens.*)
5. If we didn't want to include numbers in the hundreds, how could we change our rule? (*Write a number less than 100 that has more than 2 tens but less than 8 tens.*)

Math Talk:
Display the picture "Hoops".
Ask students:

1. What can we skip count in this picture? (*legs, flower pots, windows, shoes, etc.*)
2. Choose some of the student responses from question 1 and skip count those items.

Number of the Day:

12

Give students 12 color tiles and ask them to divide 12 into equal sized groups. Share the groups that students found. As each solution is shared, draw it on chart paper. Ask if all of the possible groups have been shared. Have students prove that they have all been shown. Discuss how the number of groups created affects how many will be in each group. (*The more groups, the fewer there are in each group.*)

Number Relationships:
Ask students to look at the drawings on the chart paper that show the different equal sized groups that can make 12. Have each student choose two of the drawings and write the repeated addition sentence that represents the picture. (*1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 12, 2 + 2 + 2 + 2 + 2 + 2 = 12, 3 + 3 + 3 + 3 = 12, 4 + 4 + 4 = 12, 6 + 6 = 12*) Share the number sentences.

Visual Representation: Equal Jumps on a Number Line
Give each student their own number line 0 to 30. Model how to start at 0 and make jumps of 1 to get to12. Show students how the actions on the number line model the repeated addition sentence 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 = 12. Ask students to work with a partner to model the other repeated addition number sentences for 12. Allow time for different pairs to share their jumps and the equation that their jumps represent until all of the possibilities have been shared. Then have partners discuss what happened when they made equal jumps of different sizes to get to 12. (*The larger the jump, the faster you got to 12. The bigger the number you are counting by the bigger the jump and the fewer jumps it takes to get to 12.*)

Problem of the Day/Logic Puzzle: none

Numeracy Board
Grading Period __4__ Week __1__

Tuesday

Daily Sign-In:
Display a clear plastic bag filled with and labeled 100 cubes. Put out another bag that is the same size, but has fewer than 100 cubes in it.

Create the following sign-in:
There are 100 cubes in the first bag. Write your estimate of the number of cubes you think are in the second bag.

Ask students:

1. Look at the estimates and discuss whether all of the estimates make sense. Did anyone guess more than 100? Why? (*Answers will vary.*)
2. Ask 2-3 students to explain how they got their answers. (*Answers will vary.*)
3. Ask students the fastest way to count the cubes in the second bag. (*by 2's, 5's, 10's*) Choose the way that most students suggest. Ask a pair of students to use that way to count the cubes in the second bag and determine who had the closest estimate.

Math Talk: none

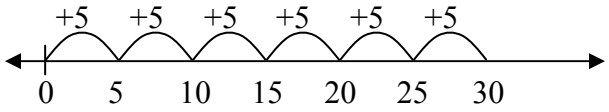
Number of the Day:

30

Play Guess my Number. Ask each student to write down one question that they feel would help eliminate numbers that could not be the number of the day. Randomly call on a student to read his/her question. Ask other students who had the same question written down to raise their hands and then ask them to think of another question that could be asked. Based on the question asked, eliminate numbers that are not possible on a hundred chart. Continue until 5 questions have been asked and answered. If the number of the day was not discovered, brainstorm as a group some other questions that could have been asked.

Number Relationships:
Divide students into groups of 4. Give each group rods and units. Ask students to represent 30 using base ten blocks. Tell students you want them to find the number that 30 is the double of (*15*) and also the number that is double 30. (*60*) Ask different groups to share their thinking.

Visual Representation: Equal Jumps on a Number Line
Remind students of the equal jumps that were made on a number line yesterday. Ask each student to draw a blank number line on a piece of paper and label the left end 0. Explain that today they are going to make equal jumps of 5 and then label only the number they land on. Model how to make the first three jumps. Point out that the loops made by the jumps are the same size and the numbers written under the jumps should be 5, 10 and 15, so three jumps of 5 from 0 means you are at 15 or 5 + 5 + 5 = 15. Have students make equal jumps of 5 to 30. How many equal jumps of 5 does it take to get from 0 to 30? (*6*) What is the repeated addition sentence? (*5 + 5 + 5 + 5 + 5 + 5 = 30*) Share some of the number lines. Show how + 5 could be written above each loop. Ask students to draw another number line and label the left end 10. Instruct them to make three jumps of 5 from 10 and label their number line.



Share the number lines. Ask students what number sentence they think is represented by the number line. (*10 + 5 + 5 + 5 = 25 or 10 + 15 = 25*)

Problem of the Day/Logic Puzzle: Logic Puzzle
There are 37 beans. Seven are red beans. The rest are black, white and pinto beans.
There is an equal number of each of these beans. How many black beans are there? (*10*) How many white beans are there? (*10*) How many pinto beans are there? (*10*)
Allow time for students to justify their answer to a partner.

Numeracy Board
Grading Period __4__ Week __1__

Wednesday

Daily Sign-In:
Create the following sign-in:
Estimate how many Unifix® cubes it would take to measure each of the items on the chart. Write your estimate in the column under each item. Put your initials next to each estimate you write on the chart.

Length of a Desktop	Width of Computer Screen	Height of a Chair Leg	Width of a Storytown Book

Place ten individual Unifix® cubes on the table for students to use as a reference. Do not allow students to take the cubes away from the table and measure the items. Save this sign-in for Thursday.

Ask students:

1. What strategy did you use to decide the length of each item in Unifix® cubes? (*Answers will vary.*)
2. How did you use the Unifix® cubes that were on the table to help with your estimate? (*Answers will vary. Could have put 5 or 10 together to see how long it was and then compared that length to the items. Could have imagined how long 5 or 10 of them would be and used that to estimate the length of the items by counting by 5's or 10's. Could have looked at the length of one and decided how many of that length it would take to measure the items.*)
3. Would knowing the exact length of one of the items help you estimate the length or width of the others? (*Yes, you know whether each item is longer or shorter that the item given so you should be able to determine a closer estimate.*)

Math Talk:
Display the picture "Hoops".
Ask students:

1. Estimate if there are more or less than 20 windows. Explain your thinking. (*Answers will vary. There are more than 20 windows.*)
2. If each water bottle costs 10¢, how much would all the water bottles cost? (*30¢*)
3. If you gave the cashier 50¢ to buy all of the water bottles, how much change would you get back? (*20¢*)

Number of the Day: none

Number Relationships: none

Visual Representation: none

Problem of the Day/Logic Puzzle: Problem Solving
Students should use their math journals. Give students time to share their solution methods and answers.

Problem type: Compare, Difference Unknown
The purple team has 7 points. The yellow team has 16 points. How many fewer points does the purple team have than the yellow team? (*9, 16 – 7 = ___ or 7 + ? = 16*)

Provide manipulatives to help solve the problem (e.g., counters, beans, cubes, etc.). Allow students to determine if they need a manipulative and which one they would like to use.

Numeracy Board
Grading Period 4 Week 1

Thursday

Daily Sign-In:
Display the sign-in from Wednesday. Model how to measure the length of a desk using Unifix® cubes. Write the actual measurement of the desk in Unifix® cubes at the top of the chart.

Ask students:

1. Look at the estimates you made for the other three items on the chart. If you would like to revise your estimates, write your new estimate(s) on a piece of paper.
2. Divide the class into 3 groups. Give each group one of the items left on the chart to measure using Unifix® cubes. Give the groups 2 minutes to be back with a measurement for their item that the whole group agrees with.
3. Compare the actual measurements with the estimates. Which estimates were closest to the actual measurements? Did anyone make a better estimate after they were given a chance to revise? (*Answers will vary.*)
4. Ask each student to come up with a comparison statement about the actual measurement and their estimated measurement. (*Answers will vary. My estimate was greater than the actual. The actual was 7 more Unifix® cubes than the actual measurement. etc.*)

Math Talk: none

Number of the Day:

77

Ask each student to write a clue that describes the number of the day. Share the clues and determine which set of clues could be put together to describe only the number 77.

Number Relationships:
Students model 77 using rods and units. Ask questions relating 77 to other numbers. For example, how many more do you need to get to 80? (*3*) How many would you take away to have 70? (*7*) How many more to get to 100? (*23*) Using a hundred chart discuss the relationship of each number surrounding 77 on the chart to 77 (e.g., 67 is 10 less, 78 is 1 more, etc.).

Visual Representation: Equal Jumps on a Number Line
Ask students to draw a number line and label the left end 0. Explain that you want them to show 5 jumps of 10 on their line. They should label the number they land on with each jump. Where do they end up? (*50*) Share some of the number lines created and verify that equal sized jumps are being shown and that the correct numbers have been placed on the line. Draw another line and label the left end 30. Show 4 jumps of 10. Where do you end up? (*70*) What addition problem does this represent? (*30 + 40 = 70*) Share some of the number lines and discuss any misconceptions you might see. Draw a third line. Label the left end 25. Show 3 jumps of 10. Where do you end up? (*55*) What problem does this represent? (*25 + 30 = 55*) How is this problem the same as the first two? (*We are counting by 10's, so the ones place is always the same and only the tens places is changing.*) How is it different? (*We didn't start on a number with 0 ones. Every number has 5 ones because we started on a number with 5 ones and counted by 10's.*)

Problem of the Day/Logic Puzzle: Problem of the Day
Display the picture "Hoops".
Look at the trees in the pots. If two birds land in each tree, how many birds will there be? Write a number sentence to solve the problem. (*2 + 2 + 2 + 2 + 2 + 2 = 12*)

Numeracy Board
Grading Period __4__ Week __1__

Friday

Daily Sign-In:
Display the chart from Thursday and also put up a piece of chart paper.
Create the following sign-in: Think of something in the room that you can estimate the length of in Unifix® cubes. Write the item and your estimate on a Post-it® note and put it on the chart paper.

Ask students:

1. Is there a way to organize the Post-it® notes so we can more easily see the data? (*Put same items together or put different items that are the same length together or order items from shortest to longest, etc.*)
2. Was it easier or harder to estimate this time? (*Answers will vary. It should be easier since they have found the measurement of several items in the classroom using Unifix® cubes.*)
3. Use Unifix® cubes to measure some of the items and determine how close the estimates are to the actual measurements. Share comparison statements that could be made about the actual and estimated measurements.

Math Talk:
Display the picture "Hoops".
Ask the students:

1. How many more basketball players would you need to have two equal teams? (*Answers will vary.*)
2. How many would be on each team? (*Answers will vary.*)

Number of the Day:

88

Give students the blank "Number of the Day" sheet. Ask students to complete the sheet by showing the number of the day four different ways. Use the sheet as an assessment.

Number Relationships:
Ask students to think about a number line with the end points 0 and 100. Have students explain to a partner whether 88 would be closer to 0 or closer to 100. (*88 is closer to 100. 50 is half way between 0 and 100 and 88 is greater than 50, so it is closer to 100 than it is to 0.*) Ask several pairs of students to share their thinking. Then ask students to discuss with their partner whether 88 would be closer to 50 or 100. Ask pairs to share their thinking. (*75 is half way between 50 and 100 and 88 is between 75 and 100 so 88 is closer to 100 than it is to 50.*)

Visual Representation: Equal Jumps on a Number Line
Write the problem 23 + 30 on the board. Ask student to talk with a partner about how the problem could be solved using jumps on a number line. Have a student demonstrate how the problem could be solved. (*Draw a number line with 23 at the left end. Make 3 jumps of 10 to end up at 53. Students could also begin with the left end labeled 30 and then make two jumps of 10 and one jump of 3. Explain to students that when you are combining numbers you can put either one of the addends or parts of the problem on the left end of the line and then jump the other amount or part to find the sum or whole*) Then write the problem 23 + 35 on the board. Again have students discuss how they could solve the problem using a number line and ask a student to model the solution. (*Draw a number line with 23 at the left end. Make 3 jumps of 10 to get to 53 and then one jump of 5 to end up at 58 or make 1 jump of 5 to get to 28 and then 3 jumps of 10 to get to 58.*) Give other two-digit addition problems so students can practice addition on a number line. Allow time for students to share their solutions.

Problem of the Day/Logic Puzzle: none

Numeracy Board
Grading Period 4 Week 2

Materials:

- Math Talk picture "In The Forest"
- Logic Puzzle Bag of Tiles
- White Boards and markers
- Number Cards (0- 29) one for each student
- Dot Cubes
- Post-it® Notes
- Index Cards
- Snap or Unifix® cubes
- Cup or brown bag
- "Number of the Day" sheet

Extra Questions for Math Talk Picture "In the Forest":

1. How many trees are there in all? How many deciduous? How many coniferous? (*12 coniferous, 5 deciduous, and 17 trees in all*)
2. If 3 more squirrels and 5 more deer come in the forest, how many deer would there be? (*8*) How many squirrels? (*8*) Then how many deer and squirrels would there be altogether? (*16*)
3. There are 13 newts. There are 5 newts outside the log. How many newts are inside the log? (*8*)
4. There are 5 squirrels. Each has 4 legs. What number sentence can we write to solve this problem? ($4 + 4 + 4 + 4 + 4 = L$) How many legs in all? (*20*)
5. A spider has 8 legs. There are 4 spiders. What number sentence can we write to solve this problem? ($8 + 8 + 8 + 8 = L$) How many legs are there in all? (*32*)
6. Mama deer has some berries. She gives 3 berries each to 2 fawns and 5 newts. What number sentence represents this problem? ($3 + 3 + 3 + 3 + 3 + 3 + 3 = b$) How many berries did she have in all? (*21*)
7. The raccoon picks 5 of the berries. How many berries are left? (*15*)
8. What fraction of the squirrels is in the trees? ($\frac{3}{5}$)
9. What fraction of the deer has spots? ($\frac{2}{3}$)

Number Cards

0	1	2
3	4	5
6	7	8
9	10	11
12	13	14

Number Cards

15	16	17
18	19	20
21	22	23
24	25	26
27	28	29

Numeracy Board
Grading Period 4 Week 2

Monday

Daily Sign-In:
Cut out the "Number Cards" and place them on the table.

Create the following sign-in:
Choose a number card and take it to your seat. At your seat, write the number that is 10 more than the number you chose on the other side of the card.

Save the student generated numbers for Tuesday's sign-in.

Ask students:

1. Ask a student to show the number that he/she wrote. Ask the class what number should be on the back of the card. (*Answers will vary. The number on the back should be 10 less than the number on the front.*) Have several other students share the numbers they wrote.
2. What do you notice about the numbers on the front and the back of each card? (*They have a difference of 10. The printed number is 10 less than the written number. The written number is 10 more than the printed number. They have the same number of ones, but the tens place is different by 1.*)

Math Talk:
Display the Math Talk picture "In the Forest".
Ask students:

1. How many squirrels do you see? (*5*) If each squirrel hides 7 acorns for the winter, how many acorns will be hidden in all? (*35*)
2. What do you think the raccoon is doing? (*picking berries*) How many berries do you see on the bushes? (*20*) How did you count them? (*by 1's, 2's, 5's or 10's*)
3. The raccoon can only carry 5 berries at a time to his nest. How many trips would he have to make to get all of the berries from the bush back to his nest? (*Four because there are 4 groups of five.*)

Number of the Day:
28

Use a brown bag or another container that is not see through and large enough to hold several Unifix® cubes. Tell students the number of the day is 28. We have a total of 28 snap cubes or Unifix® cubes altogether. There are 8 snap cubes on the table. How many cubes are in the cup? (*There are 20 cubes in the cup.*) Repeat this activity changing the number of cubes on the table (e.g., put 10 cubes on the table that leaves 18 in the cup, put 1 cube on the table that leaves 27 in the cup, put 20 cubes on the table that leaves 8 in the cup, put 27 cubes on the table that leaves 1 in the cup, etc.)

Number Relationships:
Students work in pairs to build a Unifix® tower to represent 14. Pairs then build a second tower that is: one more, one less or equal to the first. Go around the room and talk about the relationship the second tower has to the first. Is it one more, one less or equal to the first tower? If you put both towers together how many would you have in all? Is your total a double, a double + 1 or a double – 1? How do you know? (*If the two towers were equal, the combined towers will be double 14. If the second tower was one less, the combined tower will be double 14 minus 1. If the second tower was one more, the combined tower will be double 14 plus 1.*) What do you know about the relationship between 14 and 28? (*28 is double 14 or 14 is half of 28.*)

Visual Representation: Number Line Computation
Remind students how to make jumps on the number line by doing the problem 34 + 25 as a group. (*Draw a line with 34 at the left end. Make 2 jumps of 10 to get to 54 and then 1 jump of 5 to get to 59. Also show students how to start at 34 and make 1 jump of 5 to get to 39 and then 2 jumps of 10 to get to 59. They could also begin with the 25 on the left end of the number line and then jump 3 groups of 10 and then 4 to add the 34 and get to 59.*) Give students the problems 12 + 45 and 61 + 45 to solve on a number line. Ask students to share their solutions.

POD/Logic Puzzle: none

Numeracy Board
Grading Period __4__ Week __2__

Tuesday

Daily Sign-In:
Put out the numbers from Monday's sign-in, some dot cubes and quarter sheets of blank paper.

Create the following sign-in:
Choose a number. Roll a dot cube. Add the number you rolled to the new number that was written on the card. Write a number sentence to show the new sum.

Ask students:
1. What is ten less than your new sum? (*Answers will vary.*)
2. If you take ten away from your sum and also subtract the number you rolled on the dot cube, what number should you have? (*The original number that was printed on the card.*)
3. What is ten more than your new sum? (*Answers will vary.*)

Math Talk: None

Number of the Day:

21

Allow students access to a hundred chart. Give clues one at a time.
1. The number is odd.
2. The number is greater than 10 but less than 50.
3. The number has only two groups of 10.
4. If you fair share the number into 3 groups there would be 7 in each group.
5. What is the number of the day? (*21*)

Number Relationships:
Find the missing number.
What is the rule? (*The "Out" number is double the "In" number + 1 or 2 times In + 1 = Out.*) Ask a student to give another In number. Have the rest of the class determine the corresponding Out number.

In	Out
5	11
6	13
8	1 7
10	21
20	?

Visual Representation: Number Line Computation
Show students the problem 57 – 23. Ask them to think about how that problem could be solved on a number line. Allow time for them to share their thinking with a partner and then ask a student to share their solution method with the group. (*Draw a line. Put 57 at the right end of the line. Make two jumps of 10 to the left to get to 37 and then one jump of 3 to get to 34 or make one jump of three to the left to get to 54 and then two jumps of 10 to get to 34.*) Ask students to discuss the similarities and differences between adding on the number line and subtracting on a number line. (*They are the same because you are making jumps from the number where you start on the line to get to the answer. They are different because in an addition problem you are combining the two parts to find the whole so you put the first number on the left end of the line and jump on the second number to find the total or whole. In a subtraction problem you put the whole at the right end of the number line and then jump to the left the number you are taking away. In an addition problem it doesn't matter which number you put at the left end of the number line because you are combining both parts. In a subtraction problem you have to put the whole at the right end of the number line and then jump to the left the number you are taking away; you can't put the part you are taking away at the right end and then jump the whole to find the answer.*)

POD/Logic Puzzle: Logic Puzzle
There are ten tiles.
There are some yellow, red, green and blue tiles.
There are two yellow tiles.
There are an equal number of red tiles and green tiles.
There are less than four blue tiles.
(*2 yellow, 2 blue, 3 green, 3 red*)

Numeracy Board
Grading Period 4 Week 2

Wednesday

Daily Sign-In:
Put out pieces of paper or index cards.

Create the following sign-in:
Write an expression for 33 on an index card. For example 30 + 3 or 36 – 3

Ask students:

1. Select a card and ask students to verify that the expression has a value of 33. (Students could use a number line, base ten blocks, bean sticks and beans, blocks, draw a picture, etc. to verify the expression has a value of 33) Divide students into pairs and give each pair an expression. The partners verify that their expression is equivalent to 33.
2. Tape two of the expressions on the board with a space between them. Ask students to explain what sign should be placed between the two expressions to make a true number sentence. (*If both expressions represent 33, then an equal sign should be placed between them because 33 = 33.*)
3. Take down one of the expressions and tape another one in its place. Ask students to justify the sign that should be placed between the expressions to make a correct number sentence. (*Again it should be an equal sign if everyone correctly wrote an expression equivalent to 33.*)

Math Talk:
Display the Math Talk Picture "In the Forest".
Ask students:

1. If the newts were going to fair share the berries, how many berries would each newt get? (*4 each*)
2. What kind of pattern do you see in the fir trees? (*AB pattern*)
3. If there were four more bunnies in the log, how many bunnies would there be in all? (*5*)

Number of the Day: none

Number Relationships: none

Visual Representation: none

POD/Logic Puzzle: Problem Solving
Students should use their math journals. Give students time to share their solution methods and answers.

Problem type: Both Addends Unknown, Put Together
Ella's mom put 24 pieces of fruit into a bowl on the table. There are oranges and peaches. How many oranges could there be and how many peaches could there be? Is there another solution? (*Any two numbers with a sum of 24 are correct.*)

Provide manipulatives to help solve the problem (e.g., counters, beans, cubes, etc.). Allow students to determine if they need a manipulative and which one they would like to use.

Numeracy Board
Grading Period __4__ Week __2__

Thursday

Daily Sign-In:
Put out two sets of the even "Number Cards" 2-28 and index cards.
Create the following sign-in:
Choose one number card. Glue it to an index card. Use words or pictures to show how to fair share that number of cookies between yourself and one friend. Save the cards for Friday.

Ask students:

1. What do you notice about the numbers you fair shared for the sign-in? (*Answers will vary.*)
2. Turn to a partner and say another number that would fit into the group of numbers we used for the sign-in today. (*Any even number is correct.*) Share some numbers students suggest and have them verify that the numbers are even.
3. Turn to a partner and say a number that would not fit in our group of numbers. (*Any odd number.*) Have students justify why these numbers do not fit. (*They cannot be fair shared into two equal groups. There will always be one left over when you split the number into two groups.*)
4. Can we tell whether a two-digit number is even or odd without using cubes or drawing a picture? How? (*Look at the number of ones. If the number of ones can be fair shared, then the whole number can be fair shared because groups of ten can always be fair shared. Each group of ten can be fair shared into a group of 5 and another group of 5.*)

Math Talk: none

Number of the Day:

36

Is 36 even or odd? (*even*) How do you know? (*Answers will vary. Groups of ten are always able to be fair shared, so 30 can be fair shared. To prove it to the students show 3 bean sticks and ask how the 30 could be fair share into 2 groups. Each group would get 1 whole bean stick and half of another or a total of 15 beans in each group. Then look at the 6 ones. They can be fair shared into two groups of 3 so 36 can be fair shared. If we made two groups from 36 there would be 18 in each group, 15 from the tens and 3 from the ones, with none left over.*) Can 36 be fair shared into 3 groups? (*Yes, three groups of 12. There would be one bean stick in each group and 2 ones.*) Ask students to work with a partner to determine how many other ways 36 can be fair shared into a different number of same sized groups. (*1 group of 36, 2 groups of 18, 3 groups of 12, 4 groups of 9, 6 groups of 6*) Pairs should record their findings so they can share with the full group.

Number Relationships:
If 36 is an even number, is it also a double? Why? (*Yes, any even number can be split into two equal groups. The number in each group shows what was added together to get the double.*) What doubled equals 36? (*18*)
Write several expressions adding two consecutive numbers on the board (e.g., 5 + 6, 11 + 12, 4 + 5, etc.) Ask students what they notice about the relationship between the two numbers being added together. (*They are only one apart.*) Ask students to talk with a partner and explain how they could use what they know about doubles to help them find the sum for each set of numbers. (*Since the numbers are only one apart, they can find double the first number and then add 1 to find the sum of the consecutive numbers.*)
Write several subtraction problems with consecutive numbers (e.g., 6 – 5, 9 – 8, 11 – 10, etc.). Have students discuss with their partners how they can use what they know about consecutive numbers to find the difference between each set of consecutive numbers. (*Numbers that are consecutive always have a difference of 1.*)

Visual Representation: Number Line Computation
Write the problem 75 – 15 on the board. Ask students to work independently to draw a number line and use it to solve the problem. Ask 2 or 3 students to share their solutions. (*Place 75 at the right end of the line. Jump to the left 10 to get to 65 and then jump 5 left to get to 60 or jump 5 left to get to 70 and then jump 10 left to get to 60.*) Allow the student who shares to write a new two-digit subtraction problem on the board for student to solve. Solve as many different subtraction problems using the number line as time will allow.

Problem of the Day/Logic Puzzle: Problem of the Day
Jaylen picked 6 apples. Kyra picked 3 times as many apples as Jaylen. Write an expression that could be used to determine how many apples Kyra picked. (*6 + 6 + 6*)

Numeracy Board
Grading Period 4 Week 2

Friday

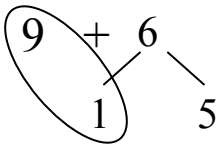
Daily Sign-In:
Randomly select 10 of the cards created on Thursday. Show students the cards and ask them to talk with a partner about how the cards could be sorted into groups (e.g., the 10 cards could be divided into 2 piles, one with cards that show 2 equal groups that have an even number of cookies and one with cards that show 2 equal groups that have an odd number of cookies OR the cards could be divided into 3 piles, one pile with original numbers that have no groups of ten, one pile with original numbers that have 1 group of ten and 1 pile that has original numbers with 2 groups of 10 OR 2 piles, one pile with cards that only have words and numbers and another pile that has pictures, etc.) Sort the cards based on the criteria given by the students. Decide as a group on one of the sorts. Once the cards are sorted determine if the remaining cards created by students on Thursday will fit in the categories for the sort. If they won't all fit, what other criteria need to be added so that all of the cards will have a place?

Math Talk:
Display the Math Talk Picture "In the Forest".
Ask students:

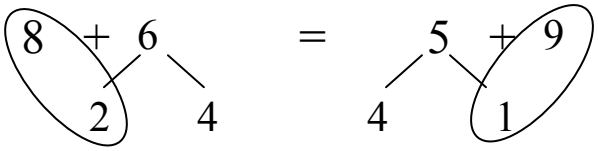
1. What fraction of the deer is standing? ($\frac{1}{3}$)
2. If the raccoon eats 12 berries, how many berries will be left? (8)
3. There are 5 squirrels. Each squirrel has 2 nuts. How many nuts in all? Write a number sentence to show your answer. (*2 + 2 + 2 + 2 + 2 = 10*)

Number of the Day:
25
Choose one of the "Number of the Day" sheets from the Numeracy Board Resource Packet and have students complete it for the number 25. Use this as an assessment.

Number Relationships:
Tell students that last year you had a student solve a problem this way: Have students think-pair-share what they think the student did to solve the problem. (*The student used a make ten strategy by combining one from the 8 with the 9 to make 10. The 10 is then added to the 5 left. 9 + 1 = 10, 10 + 5 = 15 so 9 + 6 = 15*) Explain that this strategy is called branching.



Ask students to use the branching strategy to determine if the number sentence 8 + 6 = 5 + 9 is true. Discuss answers and have students share their thinking.



8 + 2 = 10, 10 + 4 = 14 9 + 1 = 10, 10 + 4 = 14

Visual Representation: Number Line Computation
Practice two-digit addition and subtraction using an open number line. Divide students into groups. Give each group a different problem to solve. Ask each group to share their solution with the class.

POD/Logic Puzzle: none

Numeracy Board
Grading Period 4 Week 3

Materials:

- Math Talk picture "Old King Cole"
- Logic Puzzle Bean Salad
- Shapes sheets
- Post-it® notes
- Attribute Blocks
- Number cube with sides labeled 1, 2, 10, 20, 30, 40
- Spinner with +/- and Dot Cube
- Tape
- Pattern Blocks

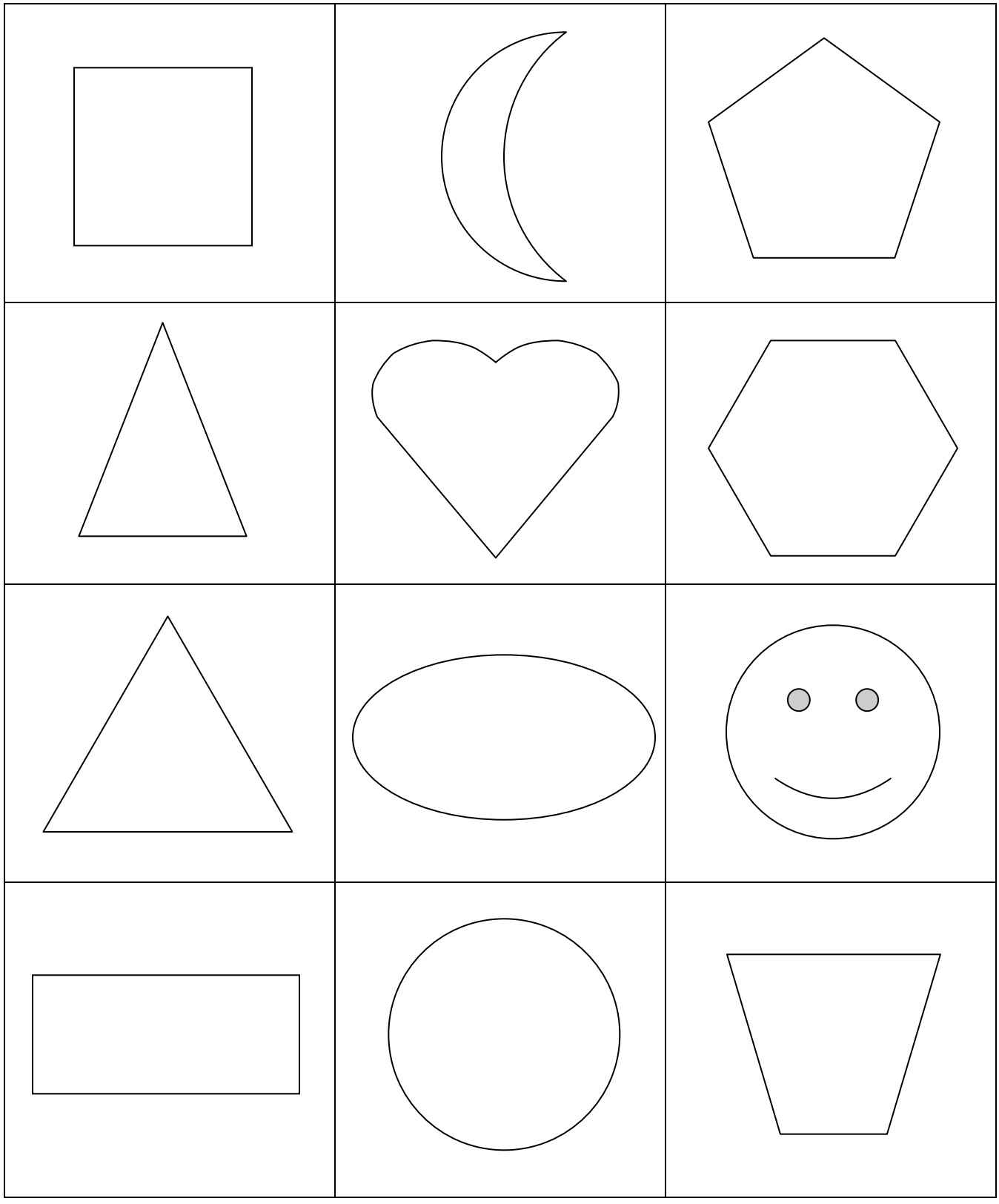
Extra Questions for Math Talk picture "Old King Cole":

1. How many more tassels than bows does the queen have? (*3*)
2. The king wants to hear all his musicians play at his palace. He has the same number of drummers and flute players as the fiddlers. How many musicians does the king have? (*3 + 3 + 3 = 9*)
3. What objects in the picture can be counted by 3's? (*e.g. buttons, bows, hat, jewels on the kings crown*)
4. What is the relationship between the number of cats and the number of mice in the picture? (*The number of mice is double the number of cats. There are half as many cats as mice.*)
5. Find a shape in the picture and name its attributes. (*Answers will vary.*)
6. Name some shapes in the picture that have a line of symmetry. (*circle, triangle, square*)
7. Look at the mice on the pillows. As I point starting on the left, we are going to say the position of each mouse. (*first, second, third, fourth, fifth and sixth*)
8. Which mice are sitting sideways on the pillows? (*first, third, fourth and sixth*)
9. What shapes are on the purple banner? (*circles*)
10. Give the color and the name of each shape in the window. (*yellow triangle, red circle, purple square, green square – Make sure students understand this shape is just a square that has been rotated. There is no geometric shape called a diamond.*)

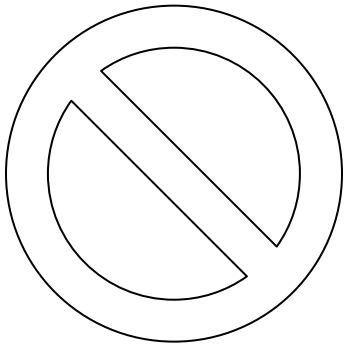
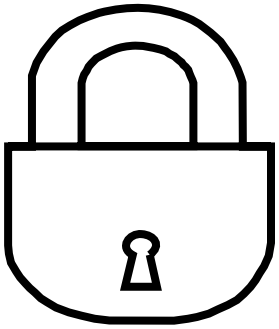
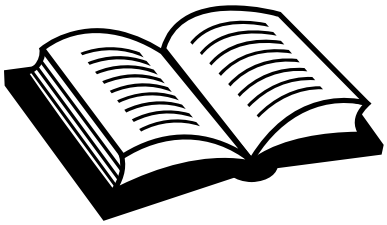
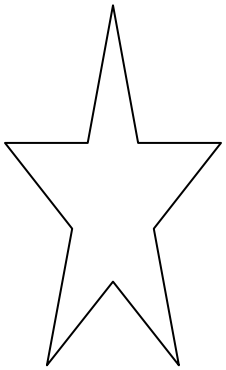
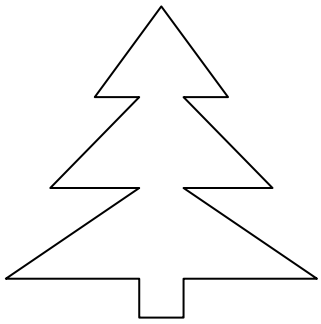
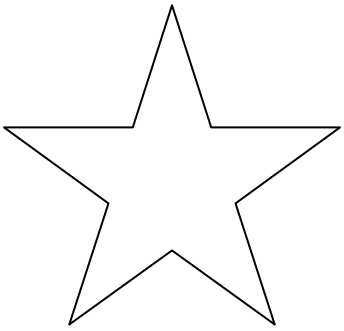
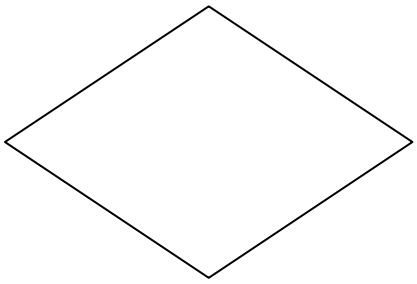
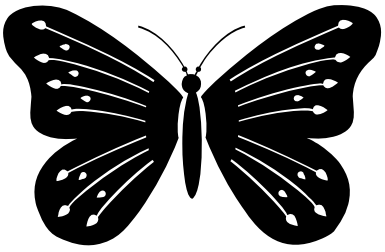
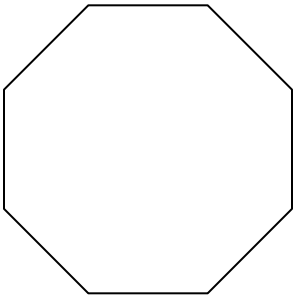
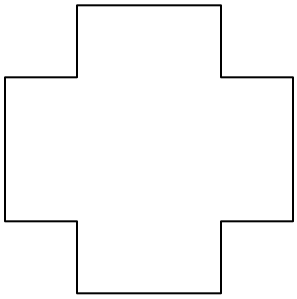
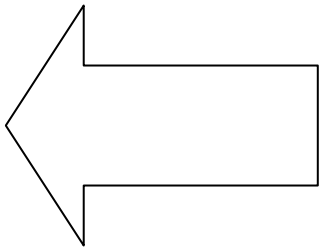
Bean Salad

There are 21 beans.
There are 12 black beans.
The rest are red beans.
How many more black beans than red beans are in the salad?

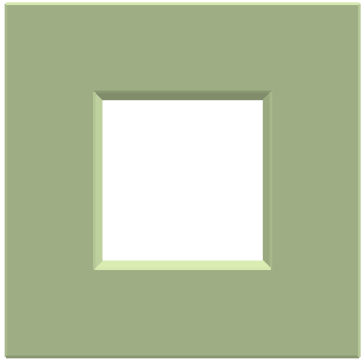
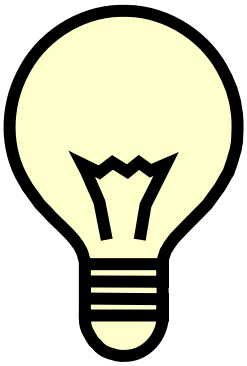
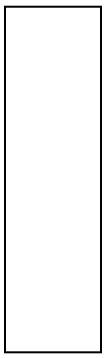
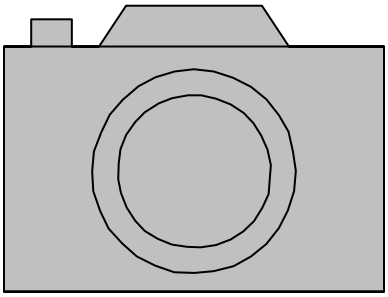
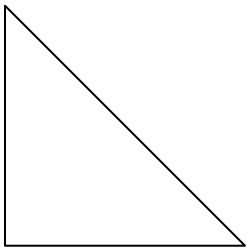
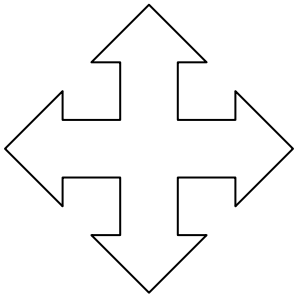
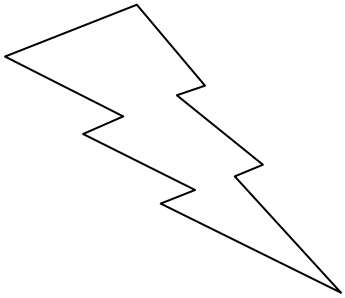
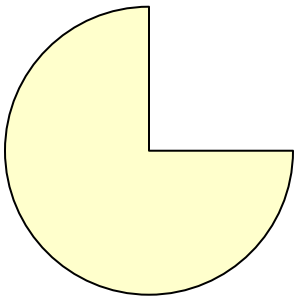
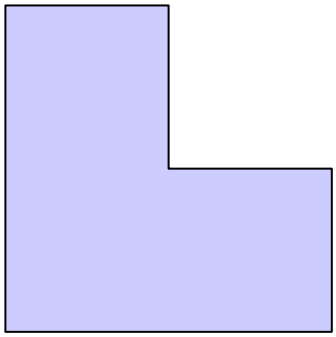
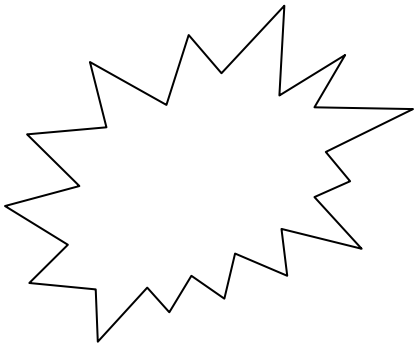
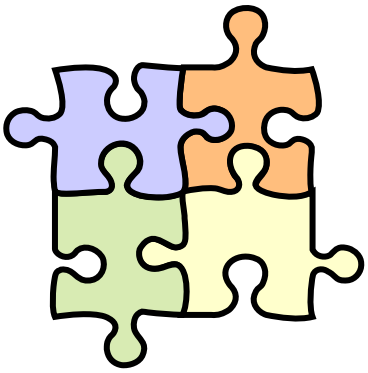
Shapes



Shapes

Shapes

Numeracy Board
Grading Period 4 Week 3

Monday

Daily Sign-In:
Create the following sign-in:
Draw a polygon that has fewer than 8 vertices. Make your polygon different than the others already on the chart.

Ask students:

1. Are there any shapes on the chart that are not polygons? (*Answers will vary. A polygon is a closed figure formed by line segments that meet only at their endpoints. Examples of figures that are not polygons are circles, ovals, figures that are not closed, etc.*)
2. Ask students to give the geometric name of several of the polygons.
3. We want to make a tally chart to determine the types of polygons we have. What could the titles of our categories be? (*Answers will vary. One row for each different number of vertices OR two categories such as less than 5 vertices and 5 or more OR 4 vertices and all other shapes OR three categories such as triangles, quadrilaterals, other shapes, etc.*)
4. Create the tally chart and ask questions about the relationships among the different categories.

Math Talk:
Display the Math Talk picture "Old King Cole".

1. What shapes do you see in the picture? (*circle, square, rectangle, triangle, parallelogram, rhombus*)
2. What patterns do you see in the picture? (*mice on pillow - facing left, forward, right - ABC; triangles on queen's top – purple, yellow, purple, yellow - AB; shapes in windows – triangle, circle, square, square or yellow, red, green, blue - ABCD*)
3. Create your own math story about the picture. (*Stories will vary.*)

Number of the Day:
50

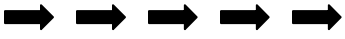
Divide 50 into groups of five and then into groups of ten. How many groups of five and how many groups of ten? (*10 fives, 5 tens*) What is the relationship between the number of groups of ten and the number of groups of five? (*There are double the number of groups of five as there are of groups of ten. There are half as many groups of 10 as there are groups of five.*) Why do we see this relationship? (*Five is half of ten so it takes twice as many groups of five to make 50 as it does groups of ten.*) If you took five away from 50 to get to 45, how many groups of 5 would you have? (*9*) Can you fair share 45 into groups of 10? (*no*) How do you know? (*To make ten you have to put two groups of five together. Nine groups of five is an odd number of groups of five. With 9 groups of five there would be one group without a partner to make the last group of ten. Eight groups of 5 can be put together to make 4 groups of 10, but then there is one group of five left with no partner to make a group of 10.*)

Number Relationships:
Always begin on 50 and follow the arrows to determine the end number. After finding the end number, write a number sentence to represent to problem


(*70, 50 + 20 = 70*)


(*45, 50 – 5 = 45*)


(*20, 50 – 30 = 20*)


(*55, 50 + 5 = 55*)


(*62, 50 + 12 = 62*)


(*26, 50 – 24 = 26*)

Visual Representation: Attribute Blocks
Students select a shape and tell one or two characteristics of the shape. Then select two students that don't have exactly the same shape and have students discuss the similarities and differences between the shapes. Repeat with other pairs of shapes.

Problem of the Day /Logic Puzzle: none

Numeracy Board
Grading Period 4 Week 3

Tuesday

Daily Sign-In

Place tape next to the chart. Copy and cut out the shape cards from the "Shapes" sheets and place them on the table.

Create the following sign-in:
Choose one shape. Draw in all of the possible lines of symmetry. Tape your shape in the appropriate column on the chart.

One Line of Symmetry	More Than One Line of Symmetry

Ask Students:

1. How do you know if a line on a shape is a line of symmetry? (*It divides the shape into two parts that are mirror images of each other, so if you fold the shape on the line, the two sides will fit exactly on top of each other.*)
2. If a shape has no lines of symmetry, where would it be placed? (*We would need to add a third column or not put it on the chart.*)
3. Do you agree with the placement of all of the shapes on the chart? (*Answers will vary. Have students move any shapes that are placed in the wrong column after they have correctly explained where they belong.*)

Math Talk: none

Number of the Day:

?

Guess My Number
The number is even.
The number is between 50 and 90.
The number in the tens place can be fair shared into 2 groups.
The number in the tens place is double three
The sum of the two digits is 8
What number am I? (*62*)

Number Relationships:

Create a cube with the sides labeled 1, 2, 10, 20, 30 and 40. Use the +/- sign spinner from the Numeracy Board Resource Packet. Look at the number of the day. Spin the spinner and roll the number cube. Perform the operation shown from the spinner and the number on the cube. For example, if you roll a + and a 2, you will add 62 + 2 = 64. What is the greatest number possible? (102) How do you know? (*The highest number you can roll is 40 and if you add 4 tens and 6 tens you get 10 tens or 100. Add in the 2 ones and the answer is 102.*) What is the smallest number possible? (*22*) How do you know? (*The largest number on the cube is 40. To get the smallest number you would subtract 40 from 62. Six tens minus 4 tens is two tens and add in the two ones to get 22.*)

Visual Representation: Attribute Blocks

Divide students into groups of four. Give each group a set of attribute blocks. Have the students make an attribute train (line of blocks). Each piece that is added to the train needs to have a one attribute difference from the previous piece. For example, a small red thin square could be followed by a small red thin triangle. The only attribute that is different is the shape. The size, color and thickness are all the same. As a challenge have students create a two or three attribute difference train.

Problem of the Day/Logic Puzzle: Logic Puzzle

Bean Salad Problem
There are 21 beans.
There are 12 black beans.
The rest are red beans.
How many more black beans than red beans are in the salad? (*3, There are 9 red beans and 12 black beans.*)

Numeracy Board
Grading Period 4 Week 3

Wednesday

Daily Sign-In:
Place a container with pattern blocks at the sign-in.

Create the following sign-in:
Choose one polygon. On a piece of paper draw your polygon, write the name of the polygon and write as many true statements as you can about the polygon. Do not include the color of the pattern block as one of your statements.

Ask students:
1. Have different students read their statements about their polygon and see if the other students can determine from the statements what the polygon is.
2. If students could not determine the polygon, what could be added to the statements so we know what polygon is being described? (*Answers will vary.*)

Math Talk:
Display the Math Talk picture "Old King Cole".
Ask students:
1. Do you see anything in the illustration that we can count by two's? How many of each do you see? (*cat eyes - 6, jester feet - 2, people eyes – 10, mouse eyes - 12*)
2. The cats and mice want to dance with each other. If everyone wants to dance, how many mice will each cat get to dance with? (*There are 3 cats and 6 mice. Six is double 3 so each cat will dance with 2 mice.*)
3. Name the pattern of shapes at the bottom of the queen's shirt. (*purple triangle, yellow triangle; AB*) If you extended the pattern, what shape would be in the 11^{th} place of the pattern? (*purple triangle*)

Number of the Day: none

Number Relationships: none

Visual Representation: none

Problem of the Day /Logic Puzzle: Problem Solving
Students should use their math journals. Give students time to share their solution methods and answers.

Problem type: Compare, Smaller Unknown
James has 12 fewer Matchbox® cars than Marco. Marco has 34 Matchbox® cars. How many Matchbox® cars does James have? (*22*)

Provide manipulatives to help solve the problem (e.g., counters, beans, cubes, etc.). Allow students to determine if they need a manipulative and which one they would like to use.

Numeracy Board
Grading Period 4 Week 3

Thursday

Our Polygons

Number of Sides	Shapes
3 Sides	
4 Sides	
5 Sides	

Daily Sign-In:
Create the following sign in:
Draw a polygon in the appropriate place on the picture graph.

Keep this graph for Friday.

Ask Students:

1. Are all of the polygons placed correctly on the graph? (*Answers will vary.*)
2. Discuss the different parts of the graph. (*The title of the graph is Our Polygons. The titles of the columns are Number of Sides and Shapes. Categories are 3 Sides, 4 Sides and 5 Sides.*)
3. Which type of polygon was drawn the most often? (*Answers will vary.*)
4. Which type of polygon was drawn the least often? (*Answers will vary.*)

Math Talk: none

Number of the Day:

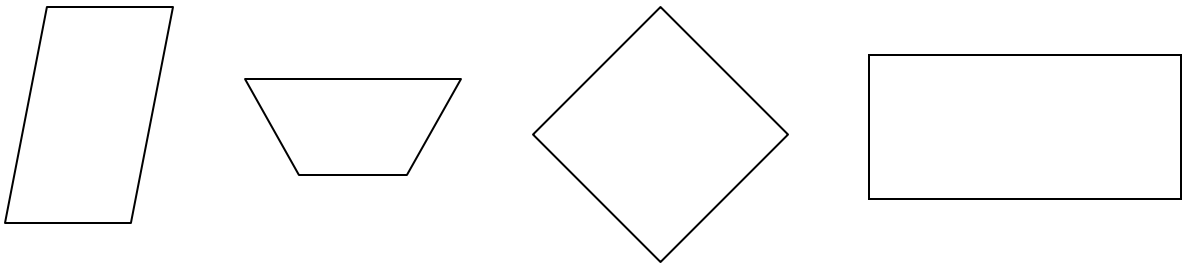
75

Roll a dot cube. Add or subtract the number you roll to/from the number of the day and only give students the answer. Students determine what number you rolled and whether you added or subtracted (For example, you tell the students the answer is 71. They determine that you subtracted because the number is smaller than 75 and the number you subtracted is 4.) Repeat several times always beginning at 75.

Number Relationships:
Draw a number line with the end points 50 and 100. Discuss with students where they would place the number 75 on the line. (*They can place 75 half way between 50 and 100.*) Place several other numbers on the line. Each time a number is placed on the line talk about the relationship it has to 75. (*e.g., Place 80 on the line and state that it is 5 more than 75. Place 76 on the line and state that it is 1 more than 75.*)

Visual Representation: Attribute Blocks
Select a shape and discusses the attributes. Students determine another shape that shares at least two of the same attributes. (*Answers will vary.*) Select a student to explain his/her thinking and then ask that student to select a different shape and discuss the attributes. The other students then find another shape that shares at least two of the same attributes.

Problem of the Day/Logic Puzzle: Problem of the Day
Draw the following shapes on the board. Discuss the geometric attributes of the shapes. Distinguish between geometric attributes (e.g. quadrilaterals – 4 sides, 4 angles, 4 vertices and are closed which makes them polygons) versus non-geometric attributes (e.g. color, orientation, size). Ask students to draw another shape that would fit with this group of shapes. (*Shapes will vary. Any four-sided figure that has at least one pair of opposite sides parallel would be correct.*) Ask students to justify how their shape fits with the group.



Numeracy Board
Grading Period 4 Week 3

Friday

Daily Sign-In:
Display the picture graph created on Thursday.

Create the following sign-in:
Look at the picture graph. Write a question that could be answered using the data on the graph.

Ask students:
1. Have students share the question they wrote with a partner.
2. Did anyone hear a good question from your partner that you would like to ask the rest of the class? (*Be sure to ask several comparison questions about the number of polygons in the different categories.*)

Math Talk:
Display Math Talk picture "Old King Cole".
1. How many whiskers do you see on the three cats? Write a repeated addition sentence that would help you solve the problem. (*6 + 6 + 6 =18 or students may count the whiskers on each side separately and write 3 + 3 + 3 + 3 + 3 + 3 = 18*)
2. What fraction of the mice is sitting facing forward on the pillows? ($\frac{2}{6}$)
3. Look at the girl's flag. What fraction of the circles is yellow? ($\frac{3}{7}$)

Number of the Day:

84

As an assessment have students create a number line. The number line should include at least 4 numbers and one of them needs to be 84. (*Number lines will vary. For example, the endpoints could be 80 and 90 with the midpoint of 85 labeled and 84 placed just before 85. The endpoints could be 0 and 100 with 50 and 75 labeled. 84 would be between 75 and 100, but closer to the 75.)*

Number Relationships:
Look at the number lines created. Choose 2 or 3 of the number lines and discuss the relationship between each number on the lines and 84.

Visual Representation: Attribute Blocks
Guess my Shape: Give students a circle, square, triangle, rectangle and rhombus.
Read clues one at a time and have students figure out the shapes being described.
For example: I have straight sides. I have four vertices. Two triangles make me. I do not have right angles. What am I? (*rhombus*)
My sides are not curved. I have four sides. I have four right angles. All of my sides are the same length. What am I? (*square*)

Problem of the Day/Logic Puzzle: none

Numeracy Board
Grading Period __4__ Week __4__

Materials:

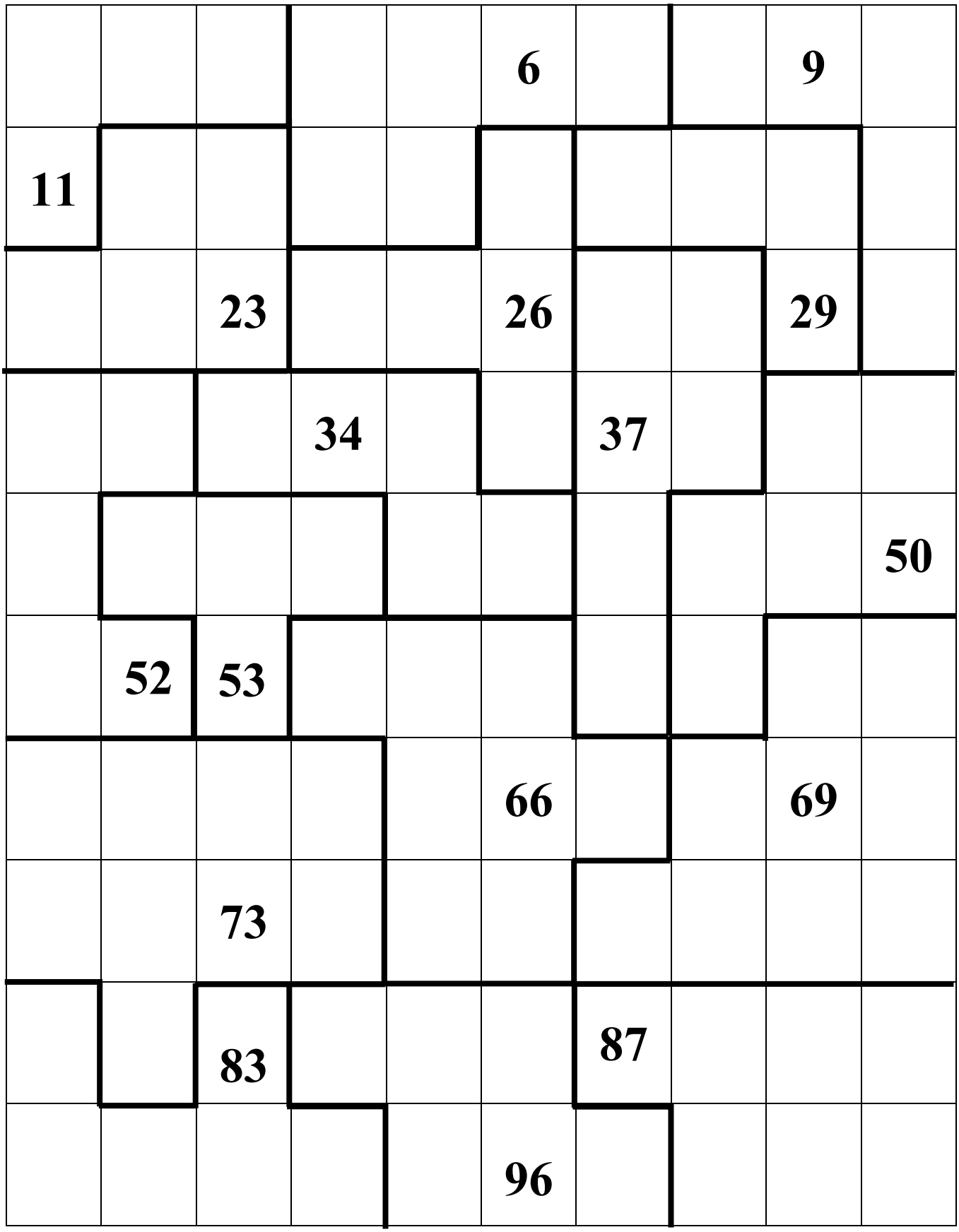
- Picture "Water Fun"
- Hundred chart
- Logic puzzle "How Old Are They?"
- Pattern blocks
- Post-it® notes
- Blank Number of the Day sheet
- Ten frames
- Base ten blocks – rods and cubes

Extra Questions for "Water Fun":

1. Where in the world could these boats be? (*Answers will vary.*)
2. Mr. Crab fed each sea gull one fish each day for an entire week. How many fish did he give them in all? (*7 + 7 + 7 + 7 + 7 = 35*)
3. The dolphins started migrating in May in search of warmer water. If it took them two months to reach warmer water, in which month would they arrive? (*July*)
4. The boat left the dock at 9:00 am. They went sailing for 5 hours. What time did the boat return to the dock? (*2 p.m.*)
5. The seagulls migrated in the fall from Ohio to Florida. They stayed for the winter. In what season did they return to Ohio? (*spring*)
6. It takes five minutes in the water for the crab to get to the other island. If he goes to the other island twice and always returns to the island with the trees, how many minutes would he spend in the water? (*20*)
7. There are two trees with 3 coconuts. How many coconuts are there in all? (*6*) If there were double the number of trees with 3 coconuts, how many coconuts would there be in all? (*12*)
8. How many more bird eyes are there than dolphin eyes? (*Two, because there is one more bird than dolphin in the picture. That one bird has two eyes. Students could also determine there are 10 bird eyes and 8 dolphin eyes and find the difference.*)
9. If there were 3 people on each of the four small boats, how many people would that be altogether? (*12*)

Water Fun

Hundred Chart Puzzle



Blank Hundred Chart

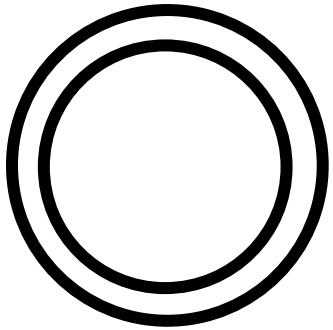
How Old Are They?

Using the clues, determine the age of each child.

Keshia is the youngest by 2 years.
Te'Quan and Thomas are the oldest.
Lynn is seven years old.
Thomas is 3 years older than Lynn.

_____	_____	_____	_____
Thomas	**Keshia**	**Lynn**	**Te'Quan**

Number of the Day



Numeracy Board
Grading Period 4 Week 4

Monday

Daily Sign-In:
Make one copy of the Hundred Chart Puzzle and the Blank Hundred Chart on white paper and one copy of each sheet on another color of paper. You will need two sets to have enough pieces for all of your students to complete one of the puzzle pieces.

Create the following sign-in:
Select a puzzle piece, fill in the missing numbers and place it where it belongs on the blank hundred chart that is the same color as the piece.

Ask students:
1. What strategy did you use to fill in the missing numbers on your piece? (*Answers will vary.*)
2. How did you know where to place the piece on the blank hundred chart? (*Answers will vary.*)

Math Talk:
Display the picture "Water Fun".

Ask students:
1. If you were the math teacher, what questions would you ask about this picture? (*Questions will vary.*)
2. How many sails are on the boats? (*8*) Write a fraction for the yellow sails. ($\frac{4}{8}$ or $\frac{1}{2}$)
3. If each dolphin ate two fish, how many fish did they eat altogether? (*8*)
4. How many more boats would you need to have a total of 8 boats? (*3*)

Number of the Day:

8

Divide students into groups of 4. Each group needs to find a way to act out or model the number 8 without using words (e.g., they could clap 8 times, they could show 8 hands, they could turn around 8 times and hold up an additional finger to show each time, etc.)

Number Relationships:
Ask questions relating 8 to other numbers. For example, how many more do you need to get from 8 to 10? (*2*) 20? (*12*) How many fewer to get to 5? (*3*) What is 8 the double of? (*4*) What is double 8? (*16*) What is 10 more than 8? (*18*) 20 more? (*28*) 50 more? (*58*) Do you see a pattern? If you were drawing a number line and the endpoints were 0 and 10, would you put the 8 closer to the 10 or closer to the 0? How do you know? (*closer to the 10 because 8 is only 2 away from 10 but it is 8 away from 0*) What if the endpoints were 0 and 50? (*closer to the 0 because 8 is only 8 away from 0 it is 42 away from 50*)

Visual Representation: Fractions
Ask students to look for something in the room that they think they could divide into halves. Have several students show their whole object or set of objects and explain how it could be divided into halves. (*A whole object would need to be able to be broken into two equal sized pieces and a set of objects would need to be broken into two equal sized groups.*) Using the same objects that were shared for halves could these also be divided into fourths? Have students share their thinking with a partner and then discuss full group. (*Some objects or sets would be able to be divided in fourths and others would not.*)

POD/Logic Puzzle: none

Numeracy Board
Grading Period __4__ Week __4__

Tuesday

Activity	Tally
Daily Sign-in	
Math Talk	
Logic Puzzles	

Daily Sign-In:
Create the following sign-in:
Put a tally mark next to your favorite activity.

Save the tally chart for the week.

Ask students:

1. How many students like each activity? (*Answers will vary. If students haven't correctly put the diagonal to show the 5th vote, redo the tally marks as a group to show how they should be shown before answering this question.*)
2. What would happen if we added another choice to the tally chart? (*Answers will vary. Depending upon the choice there could be no students who choose it or many students. With four choices the votes could be more spread out, the favorite could change, the least favorite could change, etc.*)
3. Which activity was chosen the most? (*Answers will vary.*)

Math Talk: none

Number of the Day:

87

Divide students into groups of 4. Give each group base ten rods and cubes. As a group students need to represent 87 four different ways using base ten blocks. Talk about the relationship between the number of rods and the number of cubes in the different representations. For example a group could create 8 rods and 7 cubes, 7 rods and 17 cubes, 6 rods and 27 cubes and 5 rods and 37 cubes. Each time there is one fewer rod there are 10 more cubes.

Number Relationships:
What number is 10 more than 87? (*97*) What number is 10 less than 87? (*77*) What number is 1 more? (*88*) What number is one less? (*86*) Is 87 a double? (*no*) How do you know? (*87 is an odd number. All doubles are even because you are putting together two groups that are exactly the same size so each number has a match.*) Since 87 is not a double that means we can talk about it as being a double plus 1 and a double minus 1. Work with a partner and find the doubles + 1 fact or the doubles – 1 fact. (*43 + 43 + 1 = 87, 44 + 44 – 1 = 87*) Allow time for partners to share their strategies for finding the facts.

Visual Representation: Fractions/Polygons
Give students pattern blocks. Review what each polygon is. Model how a hexagon can be created using 2 trapezoids. Ask students what fraction of the hexagon each trapezoid is. (*one-half*) Ask students to create a larger polygon using a combination of the smaller pieces. Have them be prepared to discuss what fraction of the larger polygon each of the smaller pieces is. (For example, students could use squares to create rectangles, triangles to create hexagons, trapezoids to create hexagons, rhombi to create hexagons, triangles to create a rhombus and trapezoids, etc.)

POD/Logic Puzzle: Logic Puzzle
How Old Are They?

Using the clues, determine the age of each child.
Keshia is the youngest by 2 years.
Te'Quan and Thomas are the oldest.
Lynn is seven years old.
Thomas is 3 years older than Lynn. (*Keisah is 5. Lynn is 7. Te'Quan and Thomas are both 10.*)

Numeracy Board
Grading Period 4 Week 4

Wednesday

Daily Sign-In:
Display the tally chart from Tuesday.

Ask students:

1. If two more people voted for Daily Sign-in, how many tally marks would be there? (*Answers will vary.*)
2. If 10 more people put their tally mark by Logic Puzzles, how many marks would be there? (*Answers will vary.*)
3. Ask comparison questions about the tally marks in different categories.

Keep the tally chart for Thursday.

Math Talk:
Display the picture "Water Fun".
Ask students:

1. If the number of birds is doubled, how many total birds would there be? (*10*)
2. If the same number of port holes is on the other side of the big boat, how many portholes are there on the big boat? (*6*)
3. If there are twice as many dolphins in the water as out of the water, how many are there in all? (*8*)
4. If half of the dolphins went under water, how many dolphins would be above water? (*2*)

Number of the Day: none

Number Relationships: none

Visual Representation: none

POD/Logic Puzzle: Problem Solving
Students should use their math journals. Give students time to share their solution methods and answers.

Problem type: Compare, Bigger Unknown
Lori has 16 more M&M's® than Jenna. Jenna has 24 M&M's®. How many M&M's® does Lori have? (*40, 24 + 16 = 40*)

Provide manipulatives to help solve the problem (e.g., counters, beans, cubes, etc.). Allow students to determine if they need a manipulative and which one they would like to use.

Numeracy Board
Grading Period 4 Week 4

Thursday

Daily Sign-In:
Display the tally chart from Wednesday. As a group create a bar graph that represents the data on the tally chart. Be sure to give the graph a title and give the *x* and *y* axes titles. The *x* axis will show the name of each category, but then should also show the title "Activity" or something similar as a title under the category names. The *y* axis should have a title "Number of Votes" or something similar and should include numbers.

Ask students:

1. Compare the bar graph and the tally chart. How are they the same? (*Answers will vary. They show the same data, have the same categories, have the same title, there are the same number of votes for each category, etc.*) How are they different? (*Answers will vary. They look different; each vote on the tally chart is made with a tally mark and each vote on the bar graph is represented by a filled in space. The bar graph has numbers on it and the tally chart does not. You can compare the height of the bars on the bar graph to see which category has more. You have to count the tallies on the tally chart to see which has more.*)
2. Verify with students that the data matches between the tally chart and the bar graph by finding the total number of votes in each category on each representation.

Math Talk: none

Number of the Day:

60

Ask students to try to stand on one foot for 60 seconds. (Other ideas: how high can you count in 60 seconds, jumping jacks for 60 seconds, write as many words as you can, etc.)

Number Relationships:
Have students stand in a circle. Going around the circle have individuals count by 10 until one student gets to 60. The next student sits down. Start with the next student saying 10 and repeat around the circle to 60 and then the next person sits down. Continue this pattern until only one student remains standing. Stop periodically through the activity and ask students to predict who will be the last student standing. This activity can also be done by counting by 5's to 60.

Visual Representation: Fractions/Polygons
Ask students to share what they know about halves. (*A half is a whole that is divided into 2 equal pieces or a set that is divided into 2 equal groups.*) Ask each student to draw a square. Talk about the properties of a square and record them on chart paper. (*4 equal sides, opposite sides parallel, 4 right angles*) Have students look at their squares and draw one straight line that divides the square in half. Share the different ways a square can be divided into halves. (*vertically, horizontally or diagonally*) Look at the polygons created. What polygon is created by dividing a square in half with a vertical or a horizontal line? (*rectangle*) What are the properties of a rectangle? (*4 sides, opposite sides parallel, 4 right angles*) Record the properties on chart paper. Compare the properties of a square and a rectangle. (*They are the same except that a square has 4 equal sides which means that it is a special type of rectangle. Be sure to point out to students that a square is also a rectangle.*) What is the shape of each half if the square is cut using a diagonal line? (*triangle*) Add the properties of a triangle on the chart. (*3 sides, 3 angles, 3 vertices – The triangle made here also has 1 right angle, but not every triangle has a right angle. The triangle made here has two sides that are the same length, the two sides of the square, but not every triangle has two sides the same length.*) Keep the chart for Friday.

POD/Logic Puzzle: Problem of the Day
If each dolphin has two babies, how many dolphins would there be in all? Write a number sentence to represent the problem. (*12 - includes both babies and adults; 4 + 2 + 2 + 2 + 2 = 12 or 2 + 2 + 2 + 2 = 8 and 8 + 4 = 12*)

Numeracy Board
Grading Period 4 Week 4

Friday

Daily Sign-In:
Display the bar graph made on Thursday.

Create the following sign-in:
Write a question about the bar graph.

Ask students:

1. Show the bar graph made on Thursday and the tally chart made on Tuesday. If we wanted to share our data with the principal, do you think it would be better to show the tally chart or the bar graph? Explain your answer. (*Answers will vary.*)
2. Have several students ask their questions about the graph and have the rest of the class answer them.

Math Talk:
Display the picture "Water Fun".
Ask the students:

1. If there are 5 people on each boat, how many people would be on the boats altogether? (*25*)
2. If two boats sailed away, how many people would be left on the 3 boats? (*15*)

Number of the Day:

66

Give students the blank "Number of the Day" sheet. Ask students to complete the sheet by showing the number of the day four different ways. Use the sheet as an assessment.

Number Relationships:
As a group brainstorm what students know about the number 66 and record student thoughts on chart paper. (e.g., it is 6 tens and 6 ones, it is ten less than 76, it is one more than 65, it is the double of 33, it can be fair shared into 3 groups with 22 in each group, it is the difference between 100 and 44, it is 5 tens and 16 ones, it is the sum of 57 and 9, etc.)

Visual Representation: Fractions/Polygons
Display the polygon property chart created on Thursday. Ask students to draw a square on paper and divide it into halves. Have a student explain how they know they have created halves. (*The whole square is divided into two pieces that are the same size.*) Share each of the ways that a square can be cut using one straight line into halves. As each is shown have the student sharing discuss the properties of the polygon created. Have a discussion about the relationship between halves and fourths. (*When you divide into halves two equal pieces are created. When you divide into fourths four equal pieces are created.*) Ask students to look at their squares and determine a way to draw another straight line that would divide the square into fourths. Look at the polygons created when the square is divided into fourths and add their properties to the chart. (*Fourths that were created by drawing both horizontal and vertical lines form squares. Remind students that squares are special kinds of rectangles that have four equal or congruent sides. Fourths that were created by drawing two diagonal lines are triangles. The triangles created still have a right angle, but now it is in the center of the triangle. Two sides are the same length, but they are a different two sides than when the square was cut into halves.*)

POD/Logic Puzzle: none

Numeracy Board
Grading Period 4 Week 5

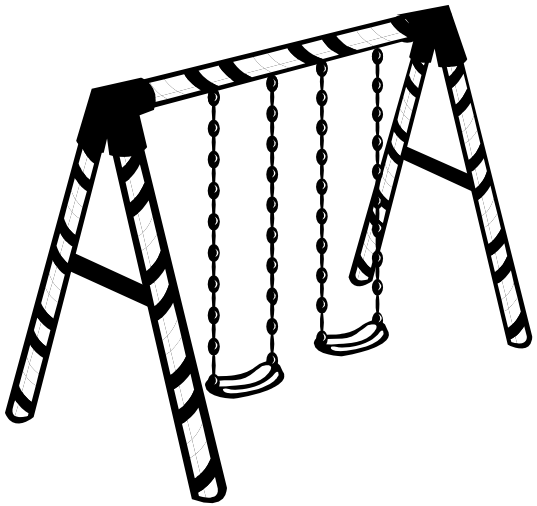
Materials:

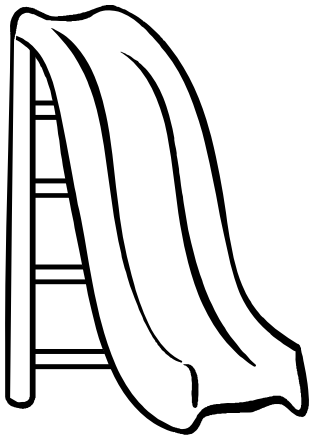
- Math Talk picture "At the Park"
- "Park Activities" picture
- Tape
- Logic Puzzle "Kids with Balloons"
- "Cookie" attachment sheet
- Chart paper and tape
- Blank "Number of the Day" sheet
- Coins to display
- Hundred chart or number line

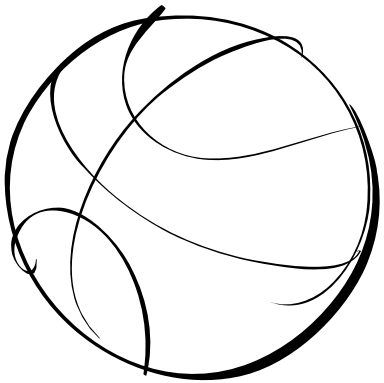
Extra questions for Math Talk picture "At the Park":

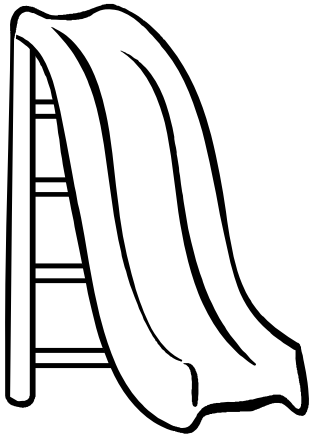
1. Do you see any shapes that have lines of symmetry in the picture? (*dragonfly, cattail, shirt on boy with stripe on shirt, sailboat in top right of pond, sails, sun, butterflies*)
2. What shapes do you see in the picture? (*circle, triangle, rectangle*)
3. What shapes do you see in the boat sails? (*triangle, rectangle, parallelogram*)
4. How many sails have four vertices? (*4*)
5. What fraction of the children is girls? ($\frac{4}{8}$ *or* $\frac{1}{2}$)
6. What fraction of the children is boys? ($\frac{4}{8}$ *or* $\frac{1}{2}$)
7. What season is it in the picture? How do you know? (*Answers will vary.*)
8. Each adult has $10.00. How much money do they have in all? (*$40.00*)
9. Write a number sentence to represent some animals in the picture. (*Answers will vary. For example, 3 + 5 would be dogs + ducks*)
10. If we add another group of cattails, how many cattails would there be in all? Write a repeated addition sentence to show your answer. *(4+ 4 + 4 = 12)*
11. Each frog ate three bugs. How many bugs did they eat in all? Write a repeated addition sentence to show your answer. *(3 + 3 + 3 = 9)*
12. Two people can sit on each bench. How many more benches would be needed around the pond for everyone to sit on a bench? (*4*)

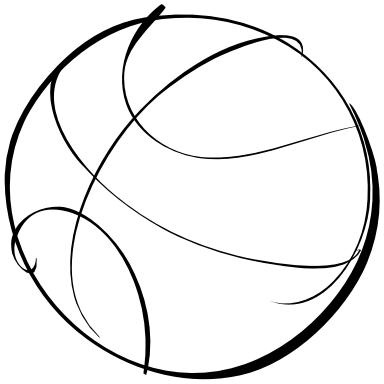
Park Activities



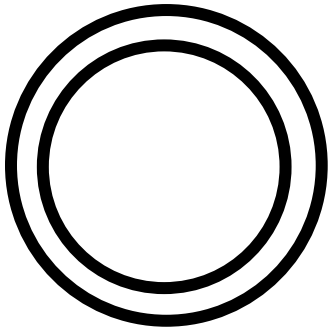




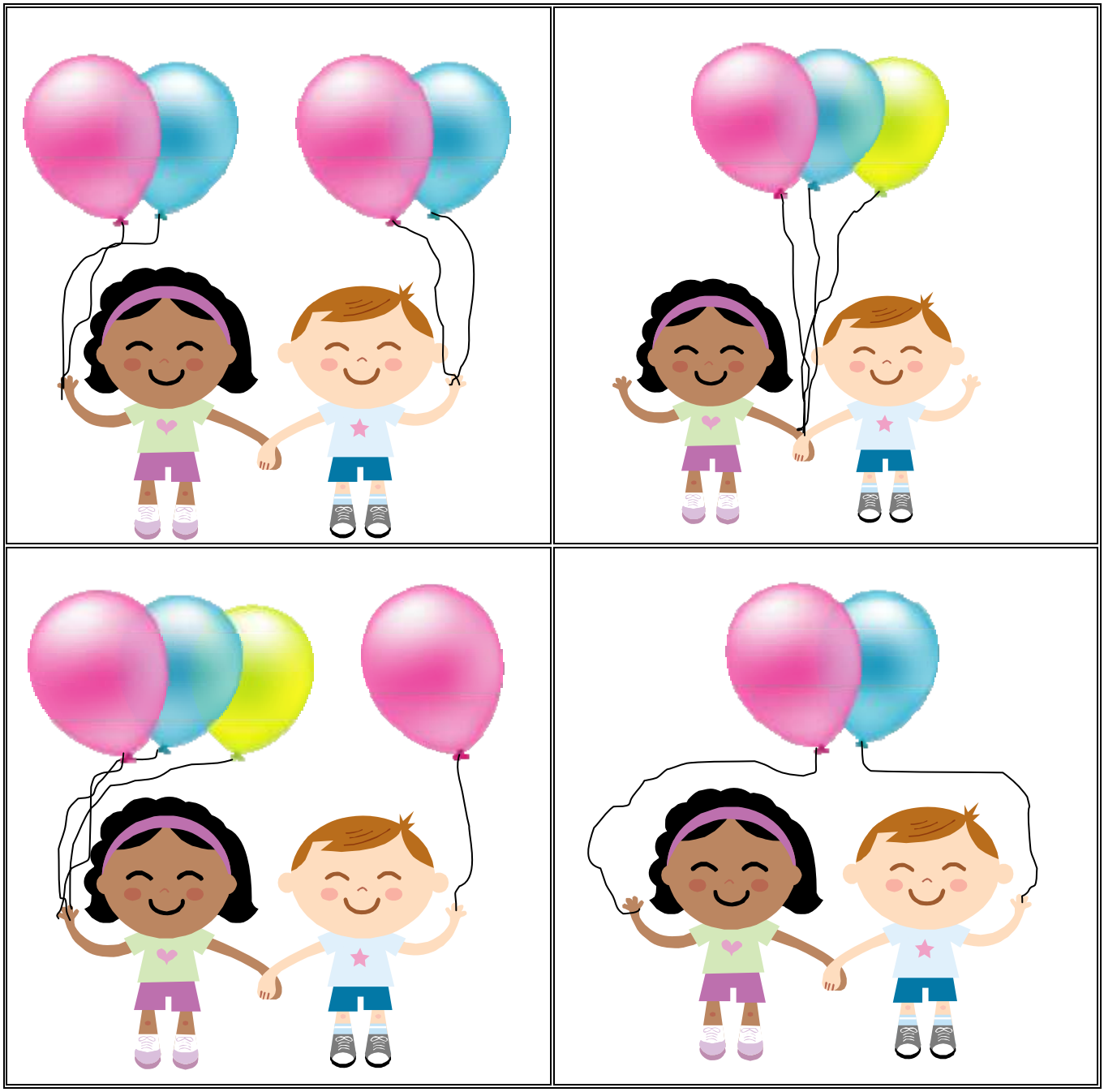




Number of the Day



Kids with Balloons



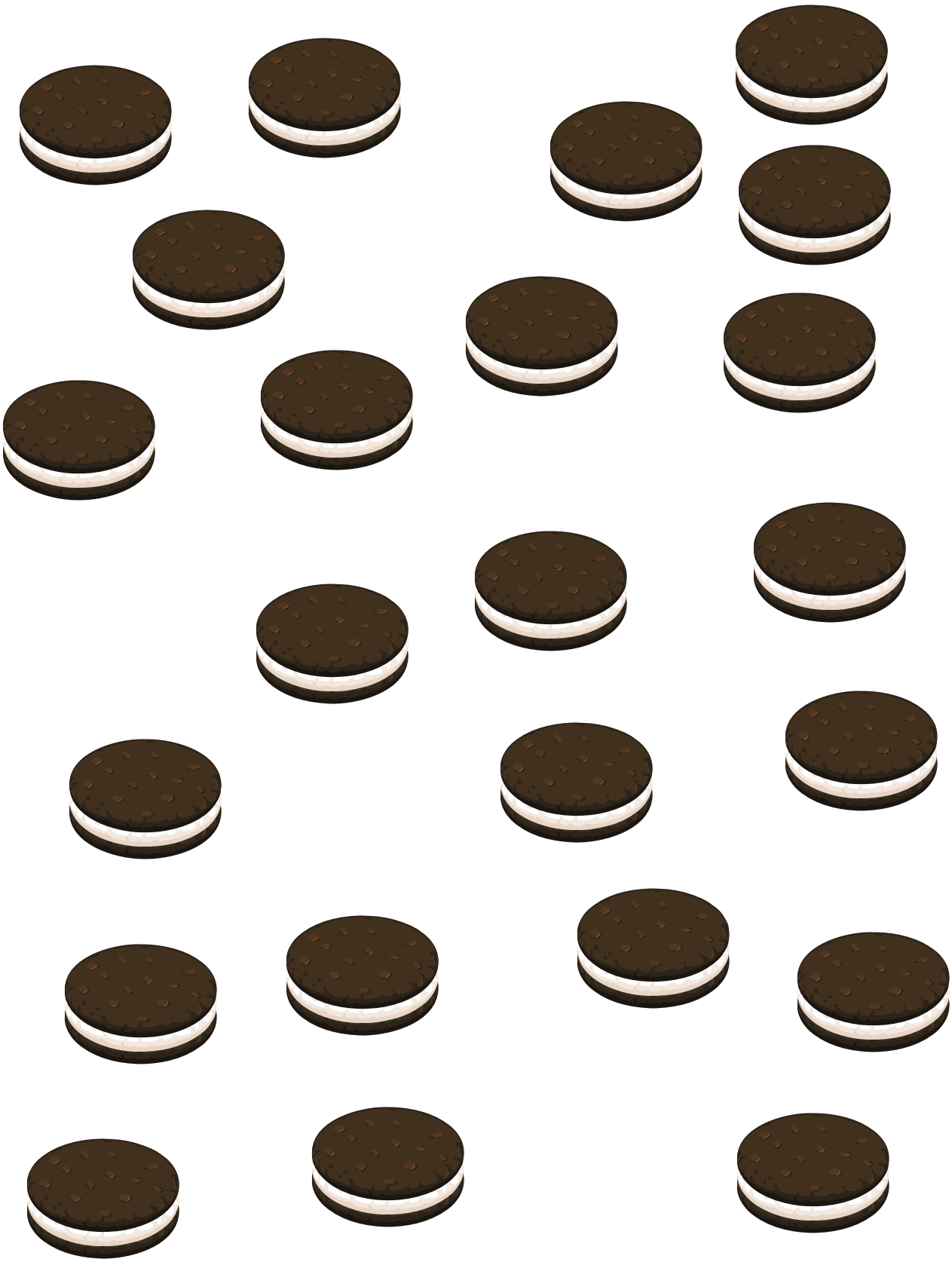
Each kid has the same number of balloons.

There is an even number of balloons.

There are four balloons.

The kids have two balloons each.

Cookies



Numeracy Board
Grading Period 4 Week 5

Monday

Daily Sign-In:
Create the following sign-in:
Make a picture graph titled Favorite Things to do at the Park with categories labeled Play Ball, Slide and Swing. Make several copies of the pictures of the "Park Activities" sheet and cut them apart. From the activities shown, students pick the one they like best and tape it to the graph. Save graph for Tuesday.

Ask students:
1. What is the most favorite park activity? (*Answers will vary.*)
2. What is the least favorite park activity? (*Answers will vary.*)
3. If 10 more students pick the swings, how many would there be now? (*Answers will vary.*)

Math Talk:
Display the Math Talk picture "At the Park".
Ask students:
1. What do you see in the picture? (*Answers will vary.*)
2. Can you name some natural resources from the picture? (*trees, grass, flowers, water*)
3. Can you name some objects that can be purchased from a store? (*boats, clothes, leash, collar, etc.*)

Number of the Day:

40

Count the fingers of the adults in the picture (*40 - count by 5's, 10's*).
(Record the following on a chart. Save chart for Tuesday.) How many pennies, nickels and dimes are in 40¢? (*40 pennies, 8 nickels, 4 dimes*)

40¢

Pennies	Nickels	Dimes
40	8	4

Number Relationships:
How much money would you have if you added one more penny to the number of the day (*41¢*), nickel (*45¢*), dime? (*50¢*)

Visual Representation: Money and Hundred Chart
Using coins, display 40¢ and also display a hundred chart. Ask students how they would count the money. Explain that it is easier to start with the coin that has the largest value. As a group, count the coins displayed. As you count a coin, relate the value to the hundred chart. For example, start with a quarter and find 25 on the hundred chart. Next add a dime and show ten more on the hundred chart. Continue until you get to 40¢. If time allows, try with a different combination of coins.

Problem of the Day/Logic Puzzle: none

Numeracy Board
Grading Period 4 Week 5

Tuesday

Daily Sign-In:
Using the pictures from Monday, create a bar graph together as a class. Save the bar graph for Wednesday and Friday.

Ask students:
1. What is the most favorite park activity? (*Answer will vary.*)
2. What is the least favorite park activity? (*Answer will vary.*)
3. Did the data change when the bar graph was created? Why? (*No, the data is the same. It is just represented in a different way.*)

Math Talk: none

Number of the Day:

80

Count the children's fingers in the picture (*80 - count by 5's, 10's*).
(Add to the chart from Monday.) How many pennies, nickels and dimes are in 80¢? (*80 pennies, 16 nickels, 8 dimes*)

80¢

Pennies	Nickels	Dimes
80	16	8

Number Relationships:
What do you notice about the number of the day yesterday, 40, and the number of the day today, 80? (*Answers will vary.*) What is double 4? (*8*) If we double 40 what do we get? (*80*) Look at the money chart from Monday. What do you notice about the number of coins? (*There are half as many pennies, nickels, and dimes in 40¢ because 40¢ is half of 80¢ or there are twice as many of each coin in 80¢ because 80¢ is double 40¢.*)

Visual Representation: Money and Hundred Chart
Using coins, display 80¢ and also display a hundred chart. Ask students how they would count the money. Explain that it is easier to start with the coin that has the largest value. As a group, count the coins displayed. As you count a coin, relate the value to the hundred chart. For example, start with a quarter and find 25 on the hundred chart. Next add a dime and show ten more on the hundred chart. Continue until you get to 80¢. If time allows, try with a different combination of coins.

Problem of the Day/Logic Puzzle: Logic Puzzle
Display "Kids with Balloons" picture and have students independently determine the answer to the puzzle. Allow different students to explain how they got their answers.

Numeracy Board
Grading Period 4 Week 5

Wednesday

Daily Sign-In:
Using the bar graph from Tuesday, have students individually create a tally chart on a piece of paper to match the bar graph. Allow students to decide how to create the tally chart.

Ask students:
1. Ask different students to share how they created their tally charts.
2. Has the data changed from Tuesday? Why or why not? (*If the tally chart was made with the information found on the graph, the data should not have changed.*)

Math Talk:
Display the Math Talk picture "At the Park".
Ask students:
1. Write a repeated addition sentence to show how many human legs there are. (*2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 24*)
2. Write a repeated addition sentence to show how many dog legs there are. (*4 + 4 + 4 = 12*)
3. Are there more human legs or dog legs? (*human legs*) How many more? (*24 – 12 = 12, double the number of dog legs*)

Number of the Day: none

Number Relationships: none

Visual Representation: Money and Hundred Chart
Using coins display 67¢ and also display a hundred chart. Ask students what coin they think they should start with to count the money. Have a student explain how to count the money using the hundred chart. If time allows, try with a different combination of coins that equal 67¢.

Problem of the Day/Logic Puzzle: Problem Solving
Students should use their math journals. Give students time to share their solution methods and answers.

Problem type: Compare, Smaller Unknown
Madeline has 14 more pennies than Ben. Madeline has 29 pennies. How many pennies does Ben have? (*29 – 14 =* _____ *or* ____ *+ 14 = 29; 15*)

Provide manipulatives to help solve the problem (e.g., counters, beans, cubes, etc.). Allow students to determine if they need a manipulative and which one they would like to use.

Numeracy Board
Grading Period 4 Week 5

Thursday

Daily Sign-In:
Using the sign-ins from Monday, Tuesday and Wednesday, have students compare the three different representations of the data.

Ask students:

1. How are the different ways of displaying the data the same and how are they different? (*They are the same because each way should have the same number of votes for each category. They are different because the picture graph shows pictures of the activities, the bar graph shows bars to represent the number of votes for each category and the tally chart shows tally marks to show the number of votes for each category.*)
2. Which way most clearly shows the data? (*Answers will vary. All 3 ways are appropriate ways to show the data.*)
3. Has the data changed from day to day? (*The number in each category should remain the same. The way the data looks is different.*)

Math Talk: none

Number of the Day:

23

Quickly show the "Cookie" attachment to the students several times, but don't allow enough time for counting the cookies by 1's. With a partner students estimate each time how many cookies they think are on the sheet. (Have a number line or hundred chart for the students to refer to. Prompt students to make reasonable estimates.) If a student says, "40", the teacher will say "less". If the next student says, "12", the teacher will say "more". Give students 5 guesses and then count the cookies to see how close they were.

Number Relationships:
If you put 23 cookies on plates, and each plate can hold 10 cookies, how many plates would you need? (*3*) How many plates would have 10 cookies on them? (*2*) How many cookies would be on the other plate? (*3*) How many more cookies would you need to fill the third plate? (*7*) If all of the plates were full, how many cookies would you have? (*30*)

Visual Representation: Money and Hundred Chart
Using coins display 23¢ and also display a hundred chart. Find 23 on the hundred chart. Tell students they have 23¢ and they want to buy some gum for 10¢. Ask students how they could use the hundred chart to figure out how much money they have left. (*counting by ones or ten less*) Show the relationship between the coins and the hundred chart. If time allows, try spending other amounts and determine how much money is left..

Problem of the Day/Logic Puzzle: Problem of the Day
Display the Math Talk picture "At the Park". Ask students to look at the number of kids at the park and then pose the following problem.

Two more kids come to the park. Four go home for dinner. How many kids are left? (*6*)
Have students share their solutions and strategies for solving the problem.

Numeracy Board
Grading Period 4 Week 5

Friday

Daily Sign-In:
Display the bar graph created on Tuesday.

Create the following sign-in:
Write a question that could be asked about the graph.

Put students into pairs to share the questions that they wrote. Allow time for a couple of students to share their questions with the whole class and have the class answer the questions using the data from the graph.

Math Talk:
Display the Math Talk picture "At the Park".
Ask the students:

1. If each sailboat costs $3.00, how much would it cost to buy all the boats in the pond? Write a repeated addition sentence to show your answer.
   ($*3 + $3 + $3 + $3 + $3 = $15*)
2. What fraction of the children are girls? ($\frac{4}{8}$ *or* $\frac{1}{2}$)
3. What fraction of the children are boys? ($\frac{4}{8}$ *or* $\frac{1}{2}$)

Number of the Day:

46

Give each student a blank "Number of the Day" sheet. Students complete the sheet for 46 as an assessment.

Number Relationships:
Give each student a "cookie" sheet. With a partner, have each student count the total number of cookies. (*23*) Ask students, "If you double the number of cookies on the sheet, how many total cookies would you have?" (*46*) Ask students to explain how they got their answers. *(Answers will vary: double the tens and ones, count by two's the top and bottom pieces of the cookie, etc.)*

Visual Representation: Money and Hundred Chart
Display 46¢ in coins and a hundred chart. Find 46 on the hundred chart. Tell students they want to buy 2 pieces a gum for 20¢. Ask students how they can use the hundred chart to figure out how much money they have left. (*Start at 46 and count back 20 by ones or count back two tens. The number you are on is the change. OR Start at 20 and count up by ones or tens to 46. The amount counted up would be the change.*) Show the relationship between the coins and the hundred chart. If time allows, try spending other amounts.

Problem of the Day/Logic Puzzle: none

Numeracy Board
Grading Period 4 Week 6

Materials:

- Chart paper and markers
- Picture "In the Flower Garden"
- Color tiles (green, red and yellow)
- Post-it notes or index cards
- Oversized clothing (e.g., shirt, shoes)
- 1 stapler
- Unifix® cubes
- Hundred chart with missing numbers
- Picture of an elephant, a dog and a bird
- Picture of a gallon of milk, a carton of juice and a water bottle
- Book, pencil, paper clip
- Base ten blocks
- Balance scale

Extra Questions for "In the Flower Garden":

1. What fraction of the fence posts has lady bugs on them? ($\frac{5}{10}$ *or* $\frac{1}{2}$)
2. Double the number of flowers in the first two rows closest to the fence. How many flowers would there be? (*32*)
3. If there was a lady bug on each fence post and each lady bug had five dots, how many dots would there be in all? (*50*)
4. If each side of the garden had a fence with the same number of posts, how many posts would there be in all? (*40*)
5. If you add another row to the flower garden, and there are 6 flowers in that row, how many flowers would there be in all? (*30*)
6. Each bird eats 4 worms. How many worms did they eat altogether? (*20*)
7. What fraction of the butterflies has green on them? ($\frac{3}{7}$)
8. There are 7 butterflies. Each butterfly lands on a fence post. How many posts will not have butterflies on them? (*3)*
9. What types of lines do you see on the fence? (*parallel and intersecting*)
10. Where would the line of symmetry be on the Monarch butterflies? (*vertically between the antennae and down the body*)
11. In the row of flowers closest to the fence, which flowers are congruent? (1^{st} & 6^{th}, 2^{nd} & 7^{th}, 3^{rd} & 5^{th})

In the Flower Garden

Hundred Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28		30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58		60
61	62	63		65	66			69	
	72	73		75	76	77	78		80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98		100

Numeracy Board
Grading Period 4 Week 6

Monday

Daily Sign-In:
Create the following sign-in:
Write the name of an object that is taller than you and an object that is shorter than you. (Use Post-it® notes or index cards.)

Ask students:

1. Allow time for students to share their answers with a partner. When a student shares have the other student put the objects in order from shortest to tallest.
2. Show three objects and ask students to order them as tall, taller, and tallest.

Math Talk:
Display the picture "In the Flower Garden".
Ask students:

1. What things in the picture can we compare? (*Some flowers are big, some small, butterflies are bigger than the ladybugs, watering can is bigger than the shovel, the birds are heavier than the butterflies, the tree is taller than the flowers, etc.*)
2. How many spots are on each ladybug? (*7*) Write a number sentence for the spots on all the ladybugs. (*7 + 7 + 7 + 7 + 7 = 35*)
3. What is the pattern of the ladybugs on the fence? (*up, down, up, down, up or every other post has a ladybug*) What would come next in the pattern? (*down or another post with a lady bug*)

Number of the Day:

93

What do you know about 93? Record student responses on chart paper.

Number Relationships:
Have students solve the problem 53 + ____ = 93? (*40*) Students can use the hundred chart as a resource. Ask students if they see any patterns.

Visual Representation: Indirect measurement comparisons
Choose 3 students of varying heights to come to the front of the classroom. Choose the child with the middle height as your comparison standard. As you are discussing the heights of the students, model by standing two students next to each other. Say to students, "I know that Sue is taller than Ben, and Mary is taller than Sue, so what can you tell me about the relationship between Mary and Ben? (*Mary is taller than Ben.*) Have the three students sit and invite up three more. Repeat the procedure a few times so students see they can make comparison statements based on relationships that they know without directly have to compare each person or item.

POD/Logic Puzzle: none

Numeracy Board
Grading Period __4__ Week __6__

Tuesday

Daily Sign-In:
Create the following sign-in:
Write the name of an object that is heavier than you and an object that is lighter then you. (Use Post-it® notes or index cards.)

Ask students:

1. Allow time for students to share their answers. If the object they have chosen is something in the room, have them prove the object is lighter or heavier than they are by lifting it or explaining how they know.
2. Choose three objects to show students and ask them to order them by light, lighter, and lightest.
3. Have students work in pairs to determine objects in the room that could be order by heavy, heavier and heaviest. Share some of the objects.

Math Talk: none

Number of the Day:

66

Using the number of the day, have the students fill in the template two different ways: ____ tens + ____ ones = 66 (*6 tens + 6 ones, 5 tens + 16 ones, 4 tens + 26 ones, 3 tens + 36 ones, 2 tens + 46 ones, 1 ten + 56 ones or 0 tens + 66 ones*)

Number Relationships:
Starting at 66, students skip count by 2's to 100.

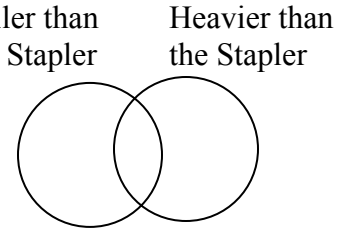
Visual Representation: Indirect measurement comparisons
Bring in an item of clothing that is too big. In front of the students, try it on and ask students if it fits. Students will notice it does not fit. It is too big. Ask students what they think would happen if one of them tried on the clothes? Students should know that it will not fit them. Ask students to explain their thinking. (If it was too big for the teacher, then it will be too big for the students because the students are smaller than the teacher. This is an example of using indirect measurement and comparisons to determine a relationship).

POD/Logic Puzzle: Logic Puzzle
There are eighteen tiles.
There are three colors.
There are an odd number of red tiles.
The number of green tiles is two more than the number of red tiles.
There are ten yellow tiles. (*10 yellow, 5 green, 3 red*)

Numeracy Board
Grading Period 4 Week 6

Wednesday

Daily Sign-In:
Place a stapler on the table next to the sign-in.
Create the following sign-in:
Find an object in our classroom that you could put on the Venn diagram. Write the name of the object where it belongs.



Ask students:

1. Allow time for students to share their answers and explain why they belong where they are placed on the Venn diagram. (*Answers will vary.*)
2. Choose any three of the responses and order them from shortest to tallest and then from lightest to heaviest.
3. Ask students to give comparison statements about the objects on the chart (*e.g., The pencil is taller than the stapler and lighter than the stapler.*)

Math Talk:
Display the picture "In the Flower Garden".
Ask students:

1. In the first row of flowers (closest to the fence), what is the difference between the number of short flowers and tall flowers? (*4 – 3 = 1*)
2. What can you count by 2's? (*leaves on the tulips and the blue flowers, butterfly wings, bird wings, bird eyes, bird legs*) Count a few of the objects by 2's to determine the total.
3. What can you count by 3's? *(leaves on purple flowers, pink tulips)* Count by 3's to determine the total of each item. Write the repeated addition sentence that could be used to determine the total.

Number of the Day: none

Number Relationships: none

Visual Representation: Indirect measurement comparisons
Display a pencil, a book, and a paper clip. Tell students you want to compare the three heights. Ask students how they could compare the objects. Show them that the pencil is taller than the paper clip and the book is taller than the pencil, but do not directly compare the book to the paper clip. Ask them to share with a partner what they know about the relationship between the book and the paper clip. (*Indirectly, you know that the book is taller than the paperclip, so you can arrange the three items from shortest to tallest.*)

POD/Logic Puzzle: Problem Solving
Students should use their math journals. Give students time to share their solution methods and answers.

Problem type: Both Addends Unknown, Put Together
Grandma has a vase with only red and yellow flowers in it. There are 12 flowers in the vase and there are more red flowers than yellow flowers. How many red flowers could she have? How many yellow flowers could she have? (*11 and 1, 10 and 2, 9 and 3, 8 and 4, 7 and 5*)

Provide manipulatives to help solve the problem (e.g., counters, beans, cubes, etc.). Allow students to determine if they need a manipulative and which one they would like to use.

Numeracy Board
Grading Period 4 Week 6

Thursday

Estimating 1 Foot		
Shorter	About the Same	Longer

Daily Sign-In:
Tape a ruler on the table as a reference.
Create the following sign-in:
Look at the length of the ruler. It is 1 foot long.
On a Post-it® note write the name of an object and place it in the appropriate column on the chart.

Ask students:

1. Look at the objects on the chart. Are there any that should be moved to another column? Have students explain their reasoning.
2. Select some of the objects to measure with a ruler. Have students verify they have been placed in the correct column.
3. Make comparison statement about the objects.

Math Talk: none

Number of the Day:

24

Have students work in pairs to build a train of 24 Unifix® cubes. Have them break the train to show $\frac{1}{2}$. How many cubes are in each half? (*12*) Put the train back together and break it to show $\frac{1}{4}$. How many cubes are in each fourth? (*6*) Ask different students to explain how they got their answers. Can we break up the cubes another way and still have equal groups?

Number Relationships:
Have students create the number 24 with base ten blocks. What number is 10 more? (*34*) What do you have to add to the base ten blocks that model 24 to model the number that is 10 more? (*one rod*) What number is 1 more than 24? (*25*) What do you have to add to the base ten blocks that model 24 to model the number that is 1more? (*one cube*) Repeat this activity beginning with 24 and modeling other numbers that are one or two more, one or two less, 10 less, 20 more, etc.

Visual Representation: Indirect measurement comparisons
Display a picture of an elephant, a dog, and a bird. How could you compare the weights of the mammals without using a scale? You know that the dog is heavier than the bird and the elephant is heavier than the dog. Therefore, indirectly, you know that the elephant is heavier than the bird. Show students 3 objects that are close in weight. On a balance scale compare the weight of the first to the weight of the third by putting an object on either side of the balance. Then compare the weight of the second to the weight of the third by putting an object on either side of the balance. Ask students what they know about the weight of the first compared to the weight of the second based on the information they already know. (*For example, the first object weights less than the third and the second object weighs more than the third. We know that the second object has to weigh more than the first object through indirect measurement.*)

POD/Logic Puzzle: Problem of the Day
Display the Math Talk picture "In the Flower Garden".

If you plant two more sets of tulips in the middle row, how many tulips will you have in all in that row? (*15; there are currently 9 tulips in that row so 9 + 3 + 3 = 15*)

Numeracy Board
Grading Period 4 Week 6

Friday

Daily Sign-In:
Place something that weighs about 1 pound on the table for students to use as a reference.
Create the following sign-in:
Write the name of an object in our classroom and place it in the appropriate column on the chart.

Estimating 1 Pound		
Lighter	About the Same	Heavier

Ask students:

1. Give students the opportunity to discuss the placement of the items and adjust any items that they feel are in the wrong column,
2. Choose some of the objects to check by weighing or explaining how they know the object is lighter or heavier than 1 pound. (*e.g., I couldn't pick up a desk in one hand, but I can hold a pound in one hand. I know a pencil is lighter than 1 pound because I use it to write every day.*)
3. Ask students to pick 3 objects from the chart and make comparison statements about the three objects.

Math Talk:
Display the picture "In the Flower Garden".
Ask the students:

1. What is nearest to the fence? *(red flowers, blue flowers, yellow butterfly)*
2. What is farthest from the fence? *(clouds, sun, yellow tulips)*
3. What is to the left of the blue flowers? *(red flowers, orange bird)*
4. What is to the right of the yellow tulips? *(watering can, shovel, tree branch, etc.)*

Number of the Day:
Give students the hundred chart with several numbers not filled in. Students fill in the missing numbers. Use this sheet as an assessment.

Number Relationships:
Discuss the numbers filled in on the hundred chart for Number of the Day. What relationship does each of those numbers have to 69?

Visual Representation: Indirect measurement comparisons
Display three empty containers that would hold a gallon of milk, a half gallon or quart of juice, and a water bottle. Tell students you want to compare the three volumes. Ask how you could compare the amount of water each container will hold without using a measuring cup or any other measuring tool. Discuss student ideas and then prove their ideas by filling the containers. (*You know that the juice has more than the water bottle and the gallon of milk has more than the juice. Therefore, indirectly, you know that the gallon of milk has more than the water bottle.*)

POD/Logic Puzzle: none

Numeracy Board
Grading Period __4__ Week __7__

Materials:

- Chart paper
- Picture "Frog Pond"
- Bean Salad logic puzzle
- Post-it® notes
- Index cards
- Number line
- Blank number bond cards
- Blank part-whole cards
- Dot cube
- Hundred chart
- Number of the Day sheet
- Bean sticks and beans, ten frames, base ten blocks
- Unifix® cubes

Extra questions for "Frog Pond":

1. If the squirrels hide one acorn behind each tree, how many acorns would be left? (*7*)
2. A frog is hiding under each lily pad, how many frogs are in the pond? (*10*)
3. What fraction of the people are children? ($\frac{2}{4}$ *or* $\frac{1}{2}$)
4. The girl had 25 acorns and fed some to the squirrels. She now has 19 left. How many acorns did she feed to the squirrels? (*6*)
5. If each person in the family picked two flowers, how many flowers would be left? (*10*)
6. There are 12 acorns on the ground and 48 in the trees. How many acorns are there altogether? (*60*)
7. If three more families, with the same number of people, came to the pond, how many people would there be? (*16*)
8. Each frog is worth ten points in a game. How many total points are the frogs worth? (*100*)
9. What time of day do you think it is, A.M. or P.M.? (*A.M.*) How do you know? (*Answers will vary.*)
10. What season is it? (*spring or summer*) How do you know? (*Answers will vary.*)

Frog Pond

Bean Salad

You have 22 beans.
You have 8 red beans.
You have half as many black beans as red beans.
You have two more pinto beans than black beans. The rest of the beans are white.
How many white beans do you have?

Numeracy Board
Grading Period __4__ Week __7__

Monday

Daily Sign-In:
Create the following sign-in:
Write an animal that could live in the area shown in the "Frog Pond" picture. (Have students write their response on a Post-it® notes or index card so that the responses can be sorted into categories.)

Save the chart for Tuesday.

Ask students:
1. Allow time for students to share their answers.
2. How could the animals be sorted?
3. As a group, sort the responses into animals that fly, animals that swim and animals that walk (For animals that fit in more than one category choose the category where most of their movement occurs. For example, a bird can walk, but it spends most of its time flying when trying to get from place to place. A person can swim, but he/she walks to get from place to place.)

Math Talk:
Display the picture "Frog Pond".
Ask students:
1. How many squirrels and frogs are there altogether? (*4 squirrels and 10 frogs; 14*)
2. What fraction of the frogs is in the pond? (*half;* $\frac{5}{10}$)
3. Each frog wants to eat one dragonfly. How many more dragonflies are needed? (*5*)

Number of the Day:
☐ Play Guess My Number (The number of the day is 9). Students get to ask five yes or no questions to narrow the hundred chart numbers so they can guess the number of the day.

Number Relationships:
Ask students to double 9 and then double it again to find a total. Allow time for students to explain the strategies they used. (*18 and then 36, strategies will vary.*)

Visual Representation: Number Bonds/Part-Whole Cards
Have students create a number bond and a part-whole card for 9. (*Answers will vary.*) Students share their bonds. Make a list and ask if there are any more bonds.

POD/Logic Puzzle: none

Numeracy Board
Grading Period __4__ Week __7__

Tuesday

Daily Sign-In:
Use Monday's categories and data to create a bar graph of the things that could live in the pond environment. Save the graph for Wednesday.

Ask students:

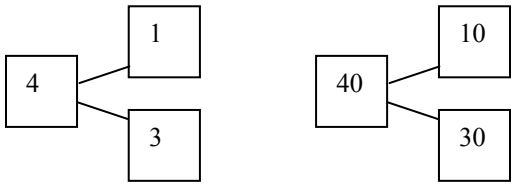
1. Order the categories from the one that has the least to the one that has greatest.
2. How many would have to be added to each category to make the categories equal?

Math Talk: none

Number of the Day: none

Number Relationships:
Show the number 3 and the number 30. Ask students how they are related (3 is 3 ones, 30 is 3 groups of 10). Show the number 5 and 50 and ask how they are related (5 is 5 ones and 50 is 5 groups of 10) Ask for another set of numbers that show the same relationship. Have students prove their answers are correct by explaining in terms of number of ones and number of groups of ten in their example (e.g., 2 and 20; 2 is 2 ones and 20 is 2 groups of 20). Allow time for several examples. Based on what has been presented so far, ask students what the relationship would be between 3 and 300 (3 is 3 ones and 300 is 3 groups of one hundred).

Visual Representation: Number Bonds
Show students the number 44. Ask them to make a number bond card and a part whole card for the number 4. Share all of the cards created. Explain that the number 40 is the same as 4 groups of 10. Explain that the number 40 really has too many combinations to make all of the bond cards that could be created so the number bond cards and the part-whole cards that are going to be created for 40 will be based on the number of groups of ten in the number 40. Draw the following number bond cards:



Ask students to discuss with a partner how they are the same and how they are different (*The number bond card for 1, 3 and 4 is groups of 1 and the card for 10, 30 and 40 is groups of 10. It still shows 1 group of 10, 3 groups of 10 and 4 groups of 10 or 1, 3 and 4*). Show a part-whole card for 40 that shows 10, 30 and 40. Have students create other number bond cards for 40 based on the groups of 10. They should end up with the same cards that can be created for 4 only all of the 40 cards will have 0 after the numbers seen on the bond cards for 4. Make the connection for students that 1 + 3 = 4 (1 one and 3 ones is the same as 4 ones) and 10 + 30 = 40 (1 group of 10 and 3 groups of 10 is the same as 4 groups of 10 or 10 + 30 = 40)

POD/Logic Puzzle: Logic Puzzle
Bean Salad

You have 22 beans. You have 8 red beans. (*22 – 8 = 14 Beans are black, pinto and white*)
You have half as many black beans as red beans. (*8 ÷ 2 = 4; The number of red beans divided by 2 gives the number of black beans.*)
You have two more pinto beans than black beans. (*4 + 2 = 6 The number of black beans plus 2 gives the number of pinto beans.*) The rest of the beans are white.
How many white beans do you have? (*4; There are 22 beans in all – 8 red = 14. 14 – 4 black beans = 10. 10 beans – 6 pinto beans = 4 white beans.*)

Numeracy Board
Grading Period __4__ Week __7__

Wednesday

Daily Sign-In:
Display the bar graph created on Tuesday.

Create the following sign-in:
Write a question that could be answered using the bar graph.

Ask students:

1. Allow time for several students to ask the question they created. After each question is answered, ask if anyone else wrote down that same question. Continue until all of the different questions that were written have been asked and answered.
2. Discuss the types of questions that were asked. Were they about the title, labels, categories, comparing data, etc.?

Math Talk:
Display the picture "Frog Pond".
Ask students:

1. Find the objects that are in groups of four. (*squirrels, flowers*) Count by 4's to find the total number of flowers that are grouped in fours. (*4, 8, 12 There are 12 flowers grouped in 4's.*)
2. How could you find the total number of flowers in the picture? (*Answers will vary.*)

Number of the Day: none

Number Relationships: none

Visual Representation: none

Problem of the Day/Logic Puzzle: Problem Solving
Students should use their math journals. Give students time to share their solution methods and answers.

Problem type: Start Unknown, Take from
There were some cookies on a plate. Jaquan ate 6 cookies. Then there were 15 cookies on the plate. How many cookies were on the plate before Jaquan ate any? (*21*)

Provide manipulatives to help solve the problem (e.g., counters, beans, cubes, etc.). Allow students to determine if they need a manipulative and which one they would like to use.

Numeracy Board
Grading Period __4__ Week __7__

Thursday

Daily Sign-In:
Create the following sign-in:
Write two different number combinations that represent 27. (Use Post-it® notes or index cards.)

Ask students:

1. Break students into groups of 3. Give each group one of the combinations and ask the group to prove that the combination they were given either is or is not equivalent to 27. Have ten frames, bean sticks, base ten blocks and other manipulatives available for the groups to use.
2. Ask if there are any other combinations that students think are equivalent to 27. (*If no one has shown a subtraction combination, model ways to make 27 using subtraction.*)

Math Talk: none

Number of the Day:

☐ Play Mystery Number (49). Give students the following clues one at a time and a hundred chart. Ask them to cross out numbers on their hundred chart as each clue is given. Discuss as a group the numbers that were eliminated with each clue:

1. The mystery number is odd.
2. It has two digits.
3. When doubled, it is two less than 100.
4. It is between 45 and 55.
5. The sum of both digits is 13.

Number Relationships:
Find 49 on the hundred chart. What number is one more than 49? (*50*) What direction do you move on the chart to get from 49 to 50? (*right*) What number is one less than 49? (*48*) What direction do you move on the chart to get from 49 to 48? (*left*) What number is 10 less than 49? (*39*) What direction do you move on the chart to get to from 49 to 39? (*move up one row directly above 49*) What number is 10 more than 49? (*59*) What direction do you move on the chart to get from 49 to 59? (*move down one row directly below 49*)

Visual Representation: Number Bonds
Show students the number bond cards made for 40 on Tuesday. Remind them that the number bond cards have the same combinations as the bond cards for 4 it is just that now we are looking at groups of 10 rather than groups of 1. Ask students to create a number bond card for the number 60 based on the groups of 10. Share the cards created. Make the connection that $2 + 4 = 6$ (2 ones and 4 ones is the same as 6 ones) so $20 + 40 = 60$ (2 groups of 10 and 4 groups of 10 is the same as 6 groups of 10 or $20 + 40 = 60$). Repeat with the subtraction sentences: $6 – 4 = 2$ and $60 – 40 = 20$. Show the other number bonds that could be made for 60. Ask students to state the number sentences (fact family) that each card represents.

Problem of the Day/Logic Puzzle: Problem of the Day

I have 2 cups of sugar. I need 8 cups. How many more cups do I need? (*6*)
I am cooking for a big party. I have 20 cups of sugar. I need 80 cups. How many more cups do I need? (*60*)
Put out ten frames, bean sticks and base ten blocks for those students who would like to use them. Allow time for students to share their thinking. Ask students how the strategy used to solve the first problem helped them solve the second problem.

Numeracy Board
Grading Period 4 Week 7

Friday

Daily Sign-In:
Create the following sign-in:
Write a two-digit number. Draw a picture using ten frames, bean sticks or base ten blocks to represent your number. (Use post-it notes or index cards.)

Ask students:

1. Have students share their numbers and drawings.
2. Divide students into partners. Ask them to make a comparison statement about their two numbers. Share some of the comparisons.

Math Talk:
Display the picture "Frog Pond".
Ask students:

1. Add the number of birds, trees and squirrels together. How many are there in all? (12)
2. How many are there if you add the things that fly and all the frogs? (*18*)
3. Have students create their own number sentence using the Frog Pond picture. Allow time to share some of the number sentences created.

Number of the Day:

☐ Choose one of the "Number of the Day" sheets from the Numeracy Board Resource Packet or a blank Number of the Day sheet to use as an assessment. Students complete the sheet for a two-digit number of your choice.

Number Relationships:
Students make a tower of 19 Unifix® cubes. With a partner, students determine the double of 19. (*38*) Pairs then partner with another pair to determine the double of 38. (*76*)

Visual Representation: Number Bonds/Part-Whole cards
Remind students of the number bond and part-whole cards created for 40 (Tuesday) and 60 (Thursday). Discuss how the bonds were made by looking at the groups of 10 in each number. Divide students into groups of 3 or 4. Give each group a different multiple of 10 and ask them to create the number bond cards and the part whole cards possible for their multiple of 10 (only have them look at possible groups of 10 that make up their number). After the cards are created practice the fact families represented by different cards (e.g., 70 is the whole; one possible bond is 20, 50 and 70 so the fact family would be $20 + 50 = 70$, $50 + 20 = 70$, $70 - 20 = 50$ and $70 - 50 = 20$.)

POD/Logic Puzzle: none

Numeracy Board
Grading Period __4__ Week __8__

Materials:

- Post-it® notes
- Math Talk picture "At the Beach"
- Hundred chart – 1 per student
- Dot cube
- Bean Salad logic problem
- Number Words sheets
- Number of the Day assessment sheet
- Journals, index cards, or blank paper
- Tape
- Number cards from hundred chart
- Pocket chart hundred chart

Extra Questions for Math Talk picture "At the Beach":

1. In order for each person to have a kite, how many more kites would be needed? (*8*)
2. If you doubled the number of people on the towels, plus one more were to join them, how many total people would there be? (*17, 8 + 8 + 1 = 17*)
3. There are three fish jumping. How many more fish would need to jump to have a total of 19 fish jumping? (*16*)
4. How many individual stacks of sand would there be if there were double the number of sand castles? (*18*)
5. The families arrived at the beach at 9:00 a.m. and left at 3:00 p.m. What part of the day was it when they arrived? (*morning*) What part of the day was it when they left? (*afternoon*)
6. Three families each bought three sandwiches to the beach. The seagull stole four sandwiches, how many sandwiches are left? (*5*)
7. Count the toes and fingers of all the people. How many groups of ten would you have and how many left over? (*22 groups of 10 with none left over. Each person has 2 groups of 10 with 10 fingers and 10 toes. There are 11 people so 22 groups of 10.*)
8. If each person had seven shells, how many total shells would there be? (*77*)
9. How many more shells are there than starfish? (*5; 7 – 2 = 5*)
10. How many bows are on the kites? (*9; 3 + 3 + 3 = 9*)
11. What shapes do you see in the picture? (*triangle, kite, rectangle, circle, trapezoid, parallelogram*)

Bean Salad

There are six white beans.
There are an equal number of red beans.
The are also an equal number of black beans.
How many of each bean are there?
How many beans in all?

Number Words

one	**two**
three	**four**
five	**six**
seven	**eight**
nine	**ten**
eleven	**twelve**
thirteen	**fourteen**
fifteen	**sixteen**
seventeen	**eighteen**
nineteen	**twenty**

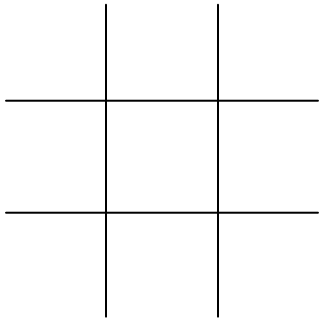
Number Words

twenty-one	**twenty-two**
twenty-three	**twenty-four**
twenty-five	**twenty-six**
twenty-seven	**twenty-eight**
twenty-nine	**thirty**
thirty-one	**thirty-two**
thirty-three	**thirty-four**
thirty-five	**thirty-six**
thirty-seven	**thirty-eight**
thirty-nine	**forty**

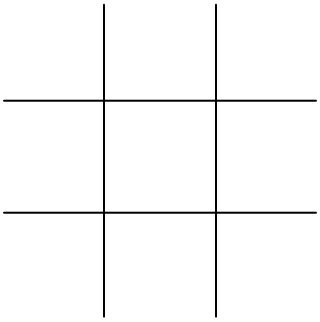
Hundred Chart Tic-Tac-Toe

Tic-Tac-Toe Three in a Row

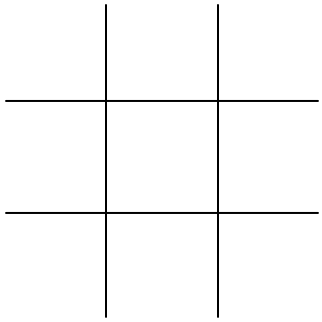
Choose who goes first. The first person fills in a two-digit number in one of the spaces on the grid. The other person then writes a correct number from the hundred chart in relationship to the first number written in one of the other spaces on the grid. To win a player needs to get three in a row. Check your completed board with the hundred chart to make sure it is correct.



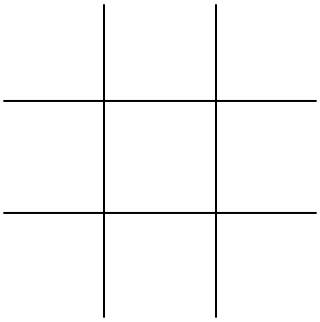
Game 1



Game 2



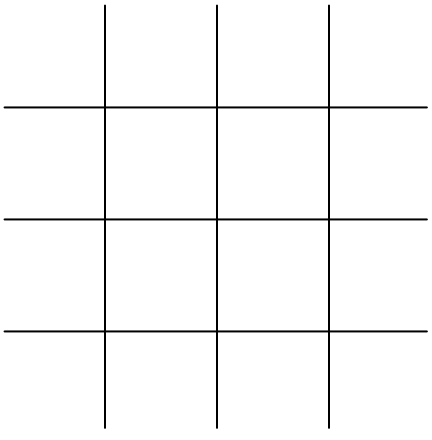
Game 3



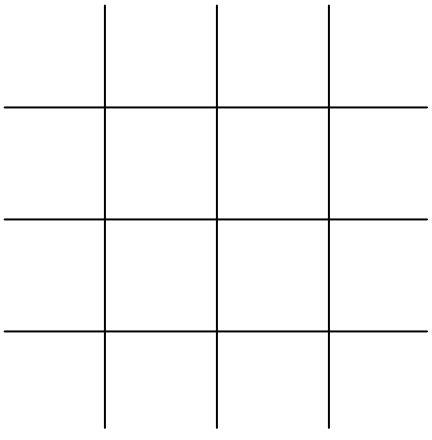
Game 4

Tic-Tac-Toe Four in a Row

Follow the same rules only this time the winner needs four in a row.



Game 5



Game 6

Numeracy Board
Grading Period 4 Week 8

Monday

Daily Sign-In:
Create the following sign-in:
Write one outside activity that you enjoy doing during the summer. (Provide Post-it® notes, for students to write their responses.)

Ask students:

1. How could we organize these activities? Record the possibilities that students give.

Keep the Post-it® notes for Tuesday.

Math Talk:
Display the Math Talk picture "At the Beach"
Ask students:

1. What fraction of the people are men? ($\frac{3}{11}$)
2. What fraction of the people are women? ($\frac{3}{11}$)
3. What fraction of the people are children? ($\frac{5}{11}$)

Number of the Day:

75

See visual representation activity.

Number Relationships:
Use numbers from the "At the Beach" picture to practice doubles, doubles plus one and doubles minus one. For example, double the people would be 22 (11 + 11), double the sand castles would be 18 (9 + 9), double the kites plus one would be 7 (3 + 3 + 1), double the towels minus one would be 7 (4 + 4 – 1), etc.

Visual Representation: Hundred Chart
Have students look at a hundred chart and find 75. How many quarters are in 75¢ (*3*) How many more quarters to make $1.00? (*1*) How far is it from 75 to 100. (*25*) How many quarters are in a dollar? (*4*) Go back to 75. How many do you count backwards to reach 50? (*25*) How many quarters in 50¢? (*2*) How many groups of 25 are there in a 75? (*3*) Tell students that they have 75¢ and they found 2 dimes. How much money would they have? (*95¢*) Ask a student to demonstrate using the hundred chart how they know they now have 95¢. If we are adding dimes, we move down one row on the hundred chart for each dime we add. Tell students to go back to 75 on the chart. Tell them they have 75¢ and they buy something that costs 40¢. How much money do they have left? (*35¢*) Again have a student prove the answer using the hundred chart. How would we move on the chart when adding ten? Why? Using the chart, have student show how many groups of 10 and how many ones are in the number 75. Choose another number to begin on and create similar problems that add and subtract groups of 10.

Problem of the Day/Logic Puzzle: none

Numeracy Board
Grading Period __4__ Week __8__

Tuesday

Daily Sign-In:
Create a t-chart and label it "Water Activities" and "Non-water Activities". Put out the Post-it® notes from Monday.

Create the following sign-in:
Place your Post-it® note under the correct column.

Ask students:
1. How many activities are in the column with the most? (*Answers will vary.*)
2. What is the difference between the two columns? (*Answers will vary.*)
3. How many more would we have to add to the column with the fewest votes to make both columns equal? (*Answers will vary.*)
4. Can you think of other activities that could be added to the chart?

Math Talk: none

Number of the Day:

30

Display the "At the Beach" picture. If there were 2 more kites in the picture, how many bows would there be? ($3 + 2 = 5$, $5 \times 3 = 15$) Double the number you found to determine the number of the day. (*30*) Create two expressions that are equivalent to 30. List the expressions on chart paper.

Number Relationships:
Display a hundred chart with 1, 25, 50, 75 and 100 shown. Students roll a dot cube and pull that many number cards from a bag. They then place the number cards in the correct position on the hundred chart. Continue until there are 8-10 numbers still missing from the chart.

Visual Representation: Hundred Chart
Using the hundred chart (from Number Relationships), ask students to list the numbers that are still missing. Students pick any two numbers from their list and write an explanation about how they know which numbers belong there. As a group pick two of the missing numbers and write a true number sentence showing the relationship between the numbers.
(*e.g., 15 < 28 or 21 + 10 = 31, etc.*)

Problem of the Day /Logic Puzzle: Logic Puzzle
Bean Salad

There are six white beans.
There are an equal number of red beans.
There are also an equal number of black beans.
How many of each kind of beans are there? (*6 white, 6 red; 6 black*)
How many beans in all? (*18*)

Numeracy Board
Grading Period 4 Week 8

Wednesday

Daily Sign-In:
Create a chart with columns labeled "0 groups of 10", "1 group of 10", "2 groups of 10" and "3 groups of 10". Cut apart the number words from the Number Word sheets and place all of them except forty on a table.

Create the following sign-in:
Select one of the numbers and tape it in the appropriate column on the chart.

Ask students:

1. How did you know where to place the number words? (*Answers will vary.*)
2. Ask different students to come and rearrange the number words so they are in order from smallest to largest in each column.
3. What is the difference between the number 32 and 42? (*The number of groups of 10. 42 has the same number of ones as 32, but one more group of 10 so it is 10 bigger than 32.*)
4. Hold up the card for forty. Ask student where it would go on the chart. (*A new category would have to be created with the title 4 groups of 10.*)

Math Talk:
Display the Math Talk picture "At the Beach".

Ask students:

1. Look at the picture and find objects that are grouped in threes. (*kites, clouds, umbrellas, fish, sandcastles*)
2. If there were 2 groups of three kites, how many kites would there be? (*6*)
3. If there were 3 groups of three umbrellas, how many umbrellas would there be? (*9*)
4. If there were 6 groups of three things how could you find the total? (*count by 3's 6 times or do repeated addition and add 3 together six times*)

Number of the Day: none

Number Relationships: none

Visual Representation: none

Problem of the Day /Logic Puzzle: Problem Solving
Students should use their math journals. Give students time to share their solution methods and answers.

Problem type: Start Unknown, Add to
Some children were playing a game. Twelve more children came to play. Then there were 38 children playing. How many children were playing before? (*? + 12 = 38, 26 children were playing before*)

Provide manipulatives to help solve the problem (e.g., counters, beans, cubes, etc.). Allow students to determine if they need a manipulative and which one they would like to use.

Numeracy Board
Grading Period __4__ Week __8__

Thursday

Daily Sign-In:
Write the number of students in the class and a sample number sentence at the top of a piece of chart paper. For example, for a class with 25 students, write the number 25 at the top of the chart and then write 12 + 13 = 25.

Create the following sign-in:
Write a number sentence that equals the number of students in the class. Make your number sentence different than the others on the chart.

Ask students:

1. Look at the number sentences and ask students to determine if they all are equivalent to the number of students in the class.
2. Ask students if there are any more combinations. (If no one has written combinations using more than two numbers as addends, show an example of how 3 or 4 numbers could be added together to get the sum. Also share subtraction sentences that could be used.)

Math Talk: none

Number of the Day:

For the Number of the Day, have students use the number of students in the class. Students write a story problem which equals the total number of students in the class. For example: If there are 23 students, the story problem could be "There are 18 apples in a basket. How many more would I need to pick to have 23?" Share a couple of the problems with the class. Ask students to write the number sentence that represents each problem and verify that the total is 23.

Number Relationships:
Using the Number of the Day (total number of students in the class), students discuss how many groups of that number are in 100. Start by talking about the number of groups of 25 (quarters) there are in 100 (dollar). (*4*) Then ask if they think there would be more groups of 23, less groups of 23 or the same number of groups of 23 in 100. (*The same number because 23 is very close to 25.*) See visual representation activity to model how to find the number of groups in a hundred.

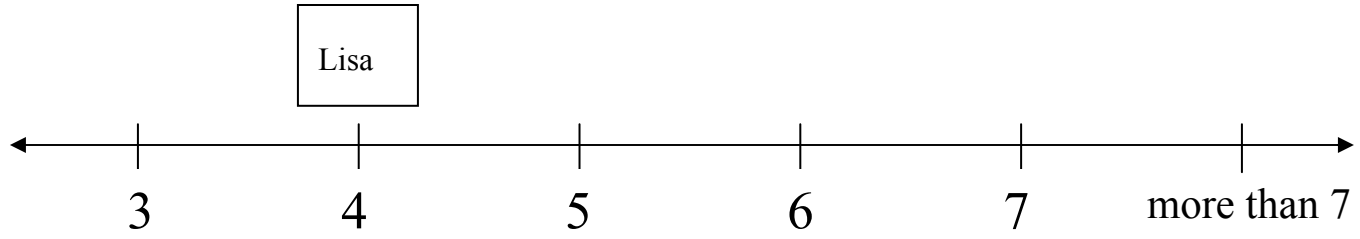
Visual Representation: Hundred Chart
Display a hundred chart. Model how to start at 23 and go down two tens, over three ones (adding 23) to get to 46. Then go down two more tens and over three ones (add another 23) to get to 69. Ask students to predict if they will still be less than 100, exactly 100 or over 100 if they add another group of 23. Then go down two more tens and over three ones (add another 23) to get to 92. Ask them to find how many more to get to 100. (*8*) Write the addition sentence. If there are 23 students, it would be 23 + 23 + 23 + 23 + 8 = 100. This is four groups of 23 with eight left over.

Problem of the Day /Logic Puzzle: Problem of the Day
Look at the Math Talk picture "At the Beach".
How many umbrellas are there? (*3*) How many towels are there? (*4*) What are the total number of umbrellas and towels? (*7*) What fraction of the total are umbrellas? ($\frac{3}{7}$) What fraction of the total are towels? ($\frac{4}{7}$)

Numeracy Board
Grading Period __4__ Week __8__

Friday

Daily Sign-In:
Create the following sign-in:
Draw a line on chart paper with numbers spaced so that index cards or Post-it® notes can be placed above the numbers. Have each student write their first name on an index card or Post-it® note. Students then look at the number of letters in their name and place it above the number that is the same as the number of letters in their first name.



Ask students:

1. Discuss the graph. Compare/contrast the number of post-it notes per number.
2. Review ordinal position words by asking questions such as: What is the third number shown on the line? (*5*) How many names are above the 3rd number on the line? Whose name is 2nd above the 4? etc.

Math Talk:
Display the Math Talk picture "At the Beach".

Ask students:

1. If each adult eats two sandwiches and each child eats one sandwich, how many sandwiches are eaten altogether? (*adults = 12 sandwiches; children = 5 sandwiches. 12 + 5 = 17*)
2. Instruct students to write number sentences to represent different objects they see in the picture.

Number of the Day:
Choose one of the "Number of the Day" sheets from the Numeracy Board Resource Packet or a blank Number of the Day sheet to use as an assessment. Students complete the sheet for a two-digit number of your choice.

Number Relationships: none

Visual Representation: Hundred Chart
Divide students into pairs and have them play hundred chart tic-tac-toe. This game is played in pairs. Each person needs a different color of pencil or crayon to write numbers with. A tic-tac-toe grid can be drawn on a blank sheet of paper (or use the pre-made grids). Decide who goes first and that person writes a two-digit number in one of the spaces on the grid. Players alternate turns filling in correct numbers that show how the spaces on a hundred board would be filled in until someone gets three in a row. Once students are comfortable with this game, use the tic-tac-toe board with more lines and try to get four in a row to win.

Problem of the Day /Logic Puzzle: none

Numeracy Board
Grading Period __4__ Week __9__

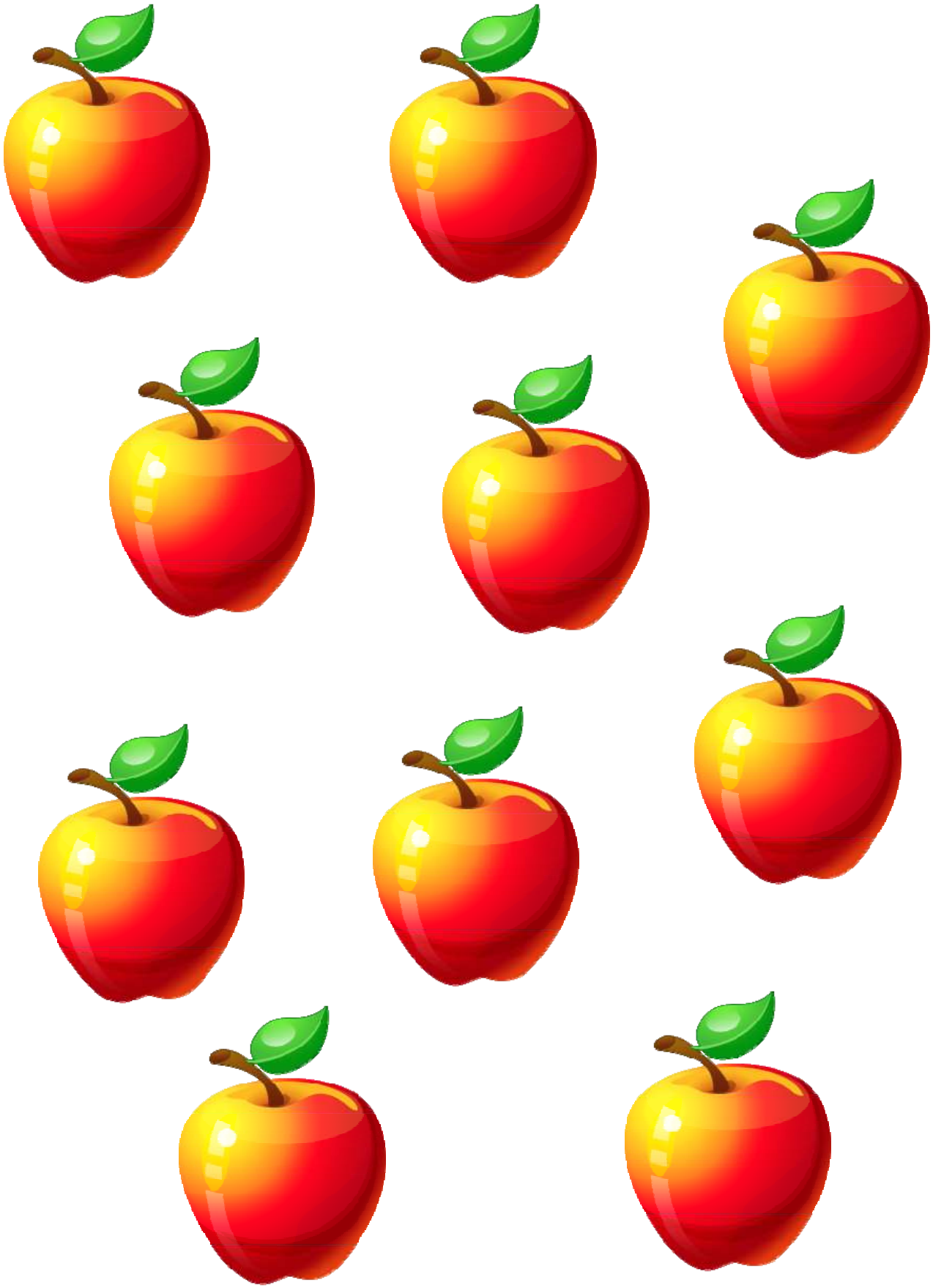
Materials:

- Post-it® notes
- Chart paper and markers
- Picture "School Days"
- Unifix® cubes
- Journals, whiteboards, or index cards
- Blank number bonds
- Apple picture sheet
- Number of the Day assessment sheet
- Color tiles (green, yellow and blue) and color tile logic puzzle

Extra Questions for "School Days":

1. How many flowers are on the ground? (*58*) How can the flowers be counted efficiently? (*by 5's and then count on by 3's*)
2. There are 12 students. If the students boarded the bus and sat two per seat, how many seats would be used? (*6*)
3. Three more buses arrived with 12 student on each bus. How many total students are there? (*48*)
4. There are 79 students enrolled at the school. Eleven students have already arrived. How many more students need to arrive before all of the students enrolled are there? (*68*)
5. It takes each student 10 seconds to go down the slide. How long will it take 5 students to go down the slide? (*50 seconds*)
6. The boy is almost finished reading his mystery book. It takes him three minutes to read each page. He has 5 pages left. How many minutes will it take him to finish the book? (*15 minutes*)
7. The girl bought each student a jump rope. Each jump rope cost her 10 cents. How much money did she spend? (*There are 12 children but one already has a jump rope, so 11 x 10 cents is $1.10*)
8. There are four cars behind the bus. Each car has 4 tires. How many total tires will there be? (*4 tires per car; 4 + 4 + 4 + 4 = 16 tires*)

School Days



Numeracy Board
Grading Period __4__ Week __9__

Monday

Daily Sign-In:
Create the following sign-in:
Write your first name on a Post-it® note. Each letter of your first name is worth six dollars. Write a repeated addition sentence using your name determine how much your first name is worth. For example, Gina = 4 letters so $6 + $6 + $6 + $6 = $24. Put your Post-it® note on the "Who Has The Most Expensive Name?" poster.

Ask students:
1. How can we sort the post-it notes? *(same numbers, smallest to largest)* Make a list of the different ways.
2. Sort the Post-it® notes by smallest to largest. Save this information for Tuesday.

Math Talk:
Display the picture "School Days".
Ask students:
1. If you double the number of people, how many people will there be? (*28*) Explain your answer.
2. If all of the trees had two flowers each, how many total flowers would there be? (*20*) Explain your answer.

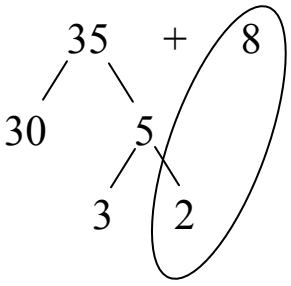
Number of the Day:

14

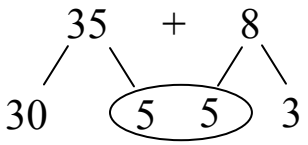
Play Mystery Number
Give the students the following clues:
1. The mystery number is even.
2. It is between 0 and 50.
3. It has two digits.
4. It is more than 12 but less than 20.
5. The sum of the digits is 5.
6. What is the Mystery Number?

Number Relationships:
Ask students to find a number on the hundred chart and write the relationship that number has to the number of the day. For example, the student chooses 10 and says that 10 is 4 less than 14.

Visual Representation: Branching
Have students create a number bond card for 8. Students share their cards. Make a list of the combinations for 8 and fill in any missing combinations. Ask students to look at the combinations and see if they think there is one that would help them find the sum of 35 + 8. Show how the number 35 can be broken by place value into tens and ones (show 35 with bean sticks and beans or base ten blocks to prove that it is 3 groups of 10 or 30 and 5 ones). Model branching and show students how their knowledge of number bonds can help them with 2-digit addition and subtraction. For example, two different ways 35 + 8 can be calculated using number bonds and the make ten strategy are:



The final problem:
30 + 10 + 3 = 43



The final problem:
30 + 10 + 3 = 43

Problem of the Day/Logic Puzzle: none

Numeracy Board
Grading Period 4 Week 9

Tuesday

Daily Sign-In:
Create a number line on chart paper and label $0, $25, $50, $75 and $100.
Put out the Post-it® notes from Monday's daily sign-in.

Create the following sign-in:
Place your name on the number line where it belongs.

Ask students:
1. How many names are between 0 and 50? 50 and 100? (*Answers will vary.*)
2. Between which two numbers are there the most/least names? (*Answers will vary.*)
3. Why are some Post-it® notes above each other on the line? (*They represent the same amount so they have to be placed at the same point on the line.*)

Save the number line for Wednesday.

Math Talk: none

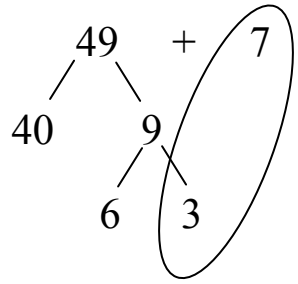
Number of the Day:

100

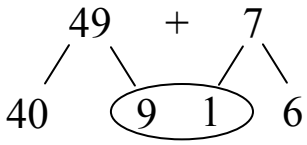
There are 10 trees in the "School Days" picture. How many more trees would we need to make 100? (*90*) Explain your answer.

Number Relationships:
1. In what ways can you group 100?
2. What do you know about the number 100? (*even, has 2 zeroes that are place holders, 20 groups of five, 2 groups of fifty, 10 groups of ten*)

Visual Representation: Branching
Remind students about the branching problem completed on Monday. Write the problem 49 +7. Ask students what number bonds would help them solve the problem. (9, 3, 6 or 1, 6, 7). Model how to use branching to solve the problem.



The final problem becomes
40 + 10 + 6 = 56



The final problem becomes
40 + 10 + 6 = 56

Problem of the Day /Logic Puzzle: Logic Puzzle
There are more than six tiles.
There are three colors.
There are four green tiles.
There are half as many yellow tiles as green tiles.
There is one more blue tile than green tile.
How many are yellow? (*2*) How many are blue? (*5*)
How many tiles are in the bag? (*11*)

Numeracy Board
Grading Period __4__ Week __9__

Wednesday

Daily Sign-In:
Look at the number line created on Tuesday. Explain to the students that you want to make a bar graph with the Post-it® notes. You only want to have 3 bars on your graph. Ask for suggestions for the names of the 3 categories (if 4 categories make more sense based on the data create 4, but make 4 the maximum number of categories on the graph). Create the title and labels for the bar graph. Ask students to come and choose a Post-it® note that is not theirs and place it in the correct category on the graph.

Save the graph for Thursday.

Ask students:

1. Which category has the most students in it? (*Answers will vary.*)
2. Which category has the least number of students in it? (*Answers will vary.*)
3. How many more students are in the category that has the most than in the category that has the least? (*Answers will vary.*)
4. Do all of the Post-it® notes in each bar represent the same amount? (*No*) Explain your answer. (*Each bar represents a range of numbers so not all of the names in the column are worth the same amount.)*

Math Talk:
Display the picture "School Days"

Ask students:

1. Someone picked two of the groups of flowers in front of the school. How many flowers were picked? (*10*)
2. How many groups of flowers would be left? (*6*) How many individual flowers are in those groups? (*30*) Explain your answer. (*Answers will vary. There are 6 groups and each group has 5 flowers.*)

Number of the Day: none

Number Relationships: none

Visual Representation: none

Problem of the Day /Logic Puzzle: Problem Solving
Students should use their math journals. Give students time to share their solution methods and answers.

Problem type: Result Unknown, Add to
Eleven students rode the bus to school. Double that number were eating breakfast. Double the number of students eating breakfast were on the playground. How many students were eating breakfast? (*22*) How many students were on the playground? (*44*)

Provide manipulatives to help solve the problem (e.g., counters, beans, cubes, etc.). Allow students to determine if they need a manipulative and which one they would like to use.

Numeracy Board
Grading Period __4__ Week __9__

Thursday

Daily Sign-In:
Display the bar graph created on Wednesday.

Create the following sign-in:
Write a question that could be answered using the bar graph.

Ask students:

1. Have some students ask the question that they wrote. Have the rest of the class answer the questions.

Save the graph and the questions for Friday.

Math Talk: none

Number of the Day:

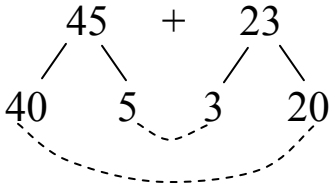
10

Display the apple picture sheet. Tell students you want to make equal groups with the apples. How many groups of apples could there be? How many apples would be in each group? (*2 groups of 5, 5 groups of 2, 1 group of 10, 10 groups of 1*)

Number Relationships:

1. What is 10 doubled plus three? (*23*)
2. What is 23 doubled plus three? (*49*)

Visual Representation: Branching
Show the problem 45 + 23. Ask student how they could use branching to make the problem easier to solve (*Break the numbers into parts by place value and then add the parts.*) Set the problem up so the tens are on the outside and the ones are on the inside.



The problem becomes
40 + 20 + 8 = 68

Give the problem 52 + 47 and ask students to practice the branching strategy (50 + 40 + 9 = 99).

Problem of the Day /Logic Puzzle: Problem of the Day
Complete this sentence: There are ____ people in my family. There are _____ eyes in my family. Create a repeated addition sentence to show the total number of eyes. (*Answers will vary.*)

Numeracy Board
Grading Period __4__ Week __9__

Friday

Daily Sign-In:
Display the Value of Our Names bar graph.

Ask students:

1. Give students who didn't have an opportunity to ask the question they wrote on Thursday time to ask it today.

Math Talk:
Display the picture "School Days".

Ask students:

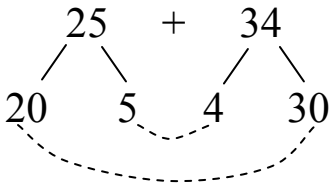
1. If another school was built and there were the same number of windows, how many windows would there be? (*20*)
2. What shapes do you see in the picture? (rectangle, triangle, circle, parallelogram)

Number of the Day:

Choose a two-digit number. Students write as many number sentences as they can that represent the number of the day. Encourage students to include subtraction sentences as well as sentences with more than two addends.

Number Relationships:
On the back of the Number of the Day assessment sheet, ask students to use their number of the day to create a story problem. The answer to their problem should be their number. Allow time for student to share their problems.

Visual Representation: Branching
Model the branching problem for 25 + 34.



The problem becomes
20 + 30 + 9 = 59

Ask each student to create a two-digit addition problem. Students trade problems and solve them using the branching strategy.

Problem of the Day /Logic Puzzle: none