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Math Common Core State Standards Review

1st Grade into 2nd Grade



the green school for global citizens

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Grade 1 Common Core Overview

Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Understand and apply properties of operations and the relationship between addition and subtraction.
- Add and subtract within 20.
- Work with addition and subtraction equations.

Number and Operations in Base Ten

- Extend the counting sequence.
- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

Measurement and Data

- Measure lengths indirectly and by iterating length units.
- Tell and write time.
- Represent and interpret data.

Geometry

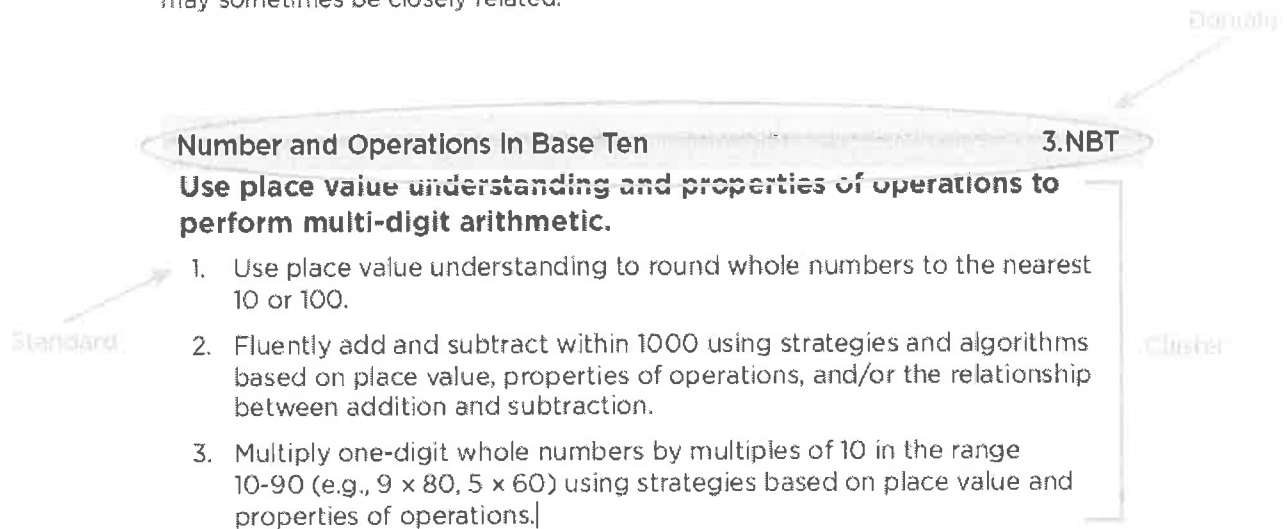
- Reason with shapes and their attributes.

How to read the grade level standards

Standards define what students should understand and be able to do.

Clusters are groups of related standards. Note that standards from different clusters may sometimes be closely related, because mathematics is a connected subject.

Domains are larger groups of related standards. Standards from different domains may sometimes be closely related.



Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Grade 1: Operations & Algebraic Thinking

Represent and solve problems involving addition and subtraction.

CCSS.Math.Content.1.OA.A.1

Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.¹

CCSS.Math.Content.1.OA.A.2

Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Understand and apply properties of operations and the relationship between addition and subtraction.

CCSS.Math.Content.1.OA.B.3

Apply properties of operations as strategies to add and subtract.² *Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)*

CCSS.Math.Content.1.OA.B.4

Understand subtraction as an unknown-addend problem. *For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.*

Add and subtract within 20.

CCSS.Math.Content.1.OA.C.5

Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

CCSS.Math.Content.1.OA.C.6

Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

Work with addition and subtraction equations.

CCSS.Math.Content.1.OA.D.7

Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.

CCSS.Math.Content.1.OA.D.8

Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = _ - 3$, $6 + 6 = _$.*

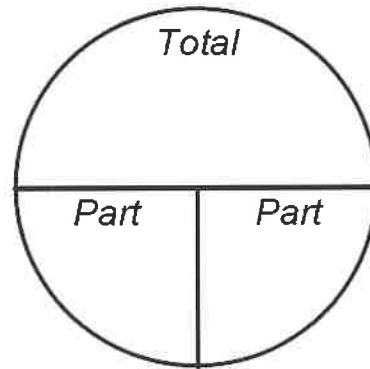
Parts-and-Total Problems

1. There are 12 books on the shelf.
There are 7 books on the table.
How many books are there altogether?
Will you use addition or subtraction?

Circle one: addition subtraction

_____ books

Record the problem on
the parts-and-total plate.

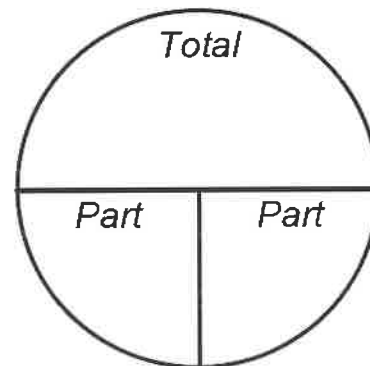


2. There are 13 stripes on an American flag.
7 stripes are red.
How many stripes are white?
Will you use addition or subtraction?

Circle one: addition subtraction

_____ stripes

Record the problem on
the parts-and-total plate.

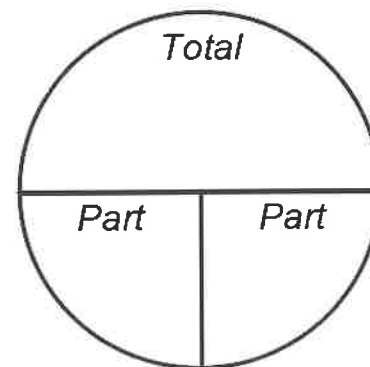


3. There are 20 students on the team.
12 of the students are boys.
How many girls are on the team?
Will you use addition or subtraction?

Circle one: addition subtraction

_____ girls

Record the problem on
the parts-and-total plate.



Name: _____ Date: _____ Time: _____

Making Up and Solving Number Stories (+ and -)

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1. Make up a number story for this number model.

Then draw a picture for the story in the space to the right.

$$4 + 5 = 9$$

2. Make up a number story for this number model.

Then draw a picture for the story in the space to the right.

$$10 + 5 = 15$$

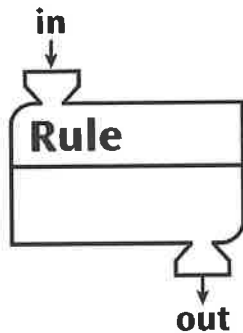
3. Make up a number story. Fill in the unit box. Write a number model. Draw a picture in the space to the right.

Unit

Number model: _____

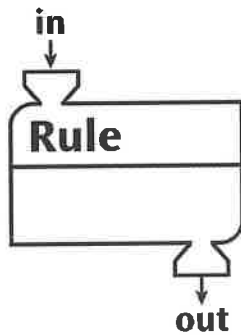
Applying Skip-Counting Rules

1. Write the rule in the Rule box. Fill in the missing numbers in the table.



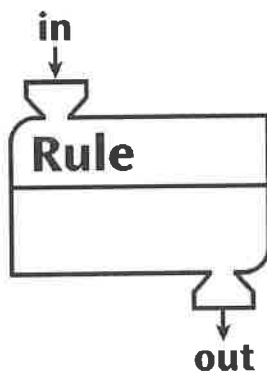
in	out
3	7
7	11
12	
30	34
36	

2. Write the rule in the Rule box. Fill in the missing numbers in the table.



in	out
2	8
6	
18	24
31	37

3. Write the rule in the Rule box. Fill in the missing numbers in the table.

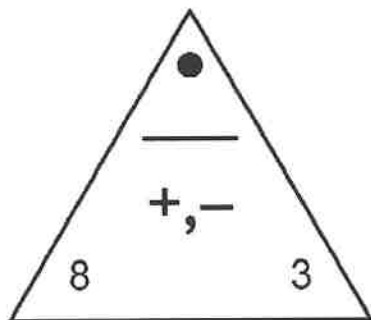


in	out
6	16
13	23
37	
14	24
45	

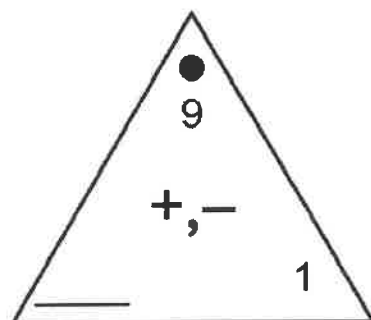
Name: _____ Date: _____ Time: _____

Generating Addition and Subtraction Fact Families

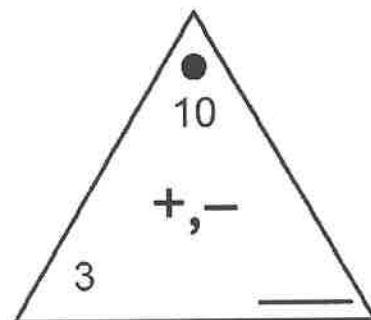
1. Fill in the missing number. Write the fact family.



2. Fill in the missing number. Write the fact family.



3. Fill in the missing number. Write the fact family.



Name: _____ Date: _____ Time: _____

Solving Number Stories with Three Addends

1. Write a number story to go with the number sentence below.
Then solve.

$$5 + 3 + 6 = \underline{\hspace{2cm}}$$

2. Write a number story to go with the number sentence below.
Then solve.

$$7 + 2 + 4 = \underline{\hspace{2cm}}$$

3. Write a number story to go with the number sentence below.
Then solve.

$$4 + 7 + 8 = \underline{\hspace{2cm}}$$

Name _____

Date _____

Time _____

Using Two-Fisted Penny Addition to Practice Addition Facts

15	
Left	Right
9	6

16	
Left	Right

17	
Left	Right

18	
Left	Right

19	
Left	Right

20	
Left	Right

Name _____

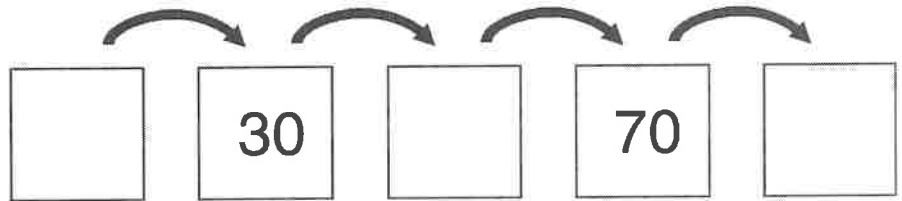

Date _____

Time _____

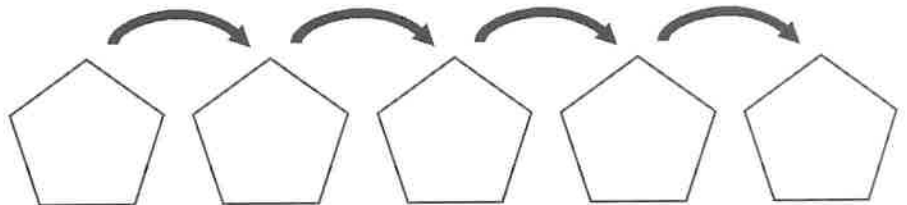

Creating Frames-and-Arrows Problems

Complete the Frames-and-Arrows diagrams and create two new ones.

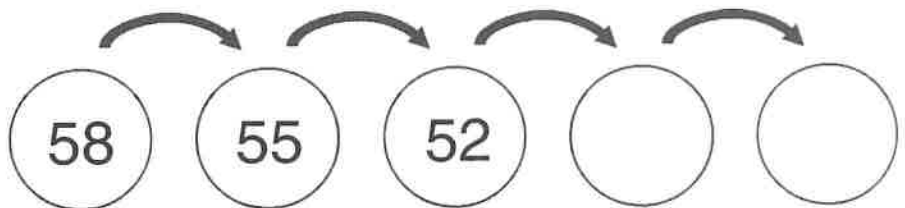

Rule
Add _____



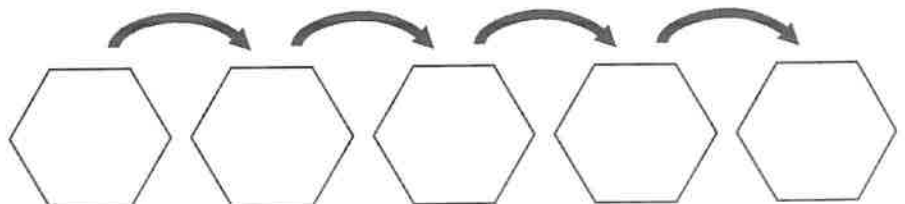

Rule
Plus _____



Rule
— _____

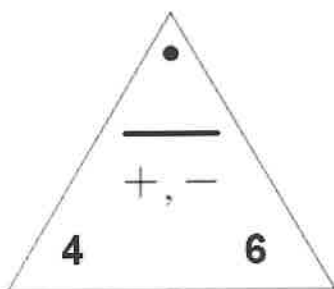


Rule
+ _____



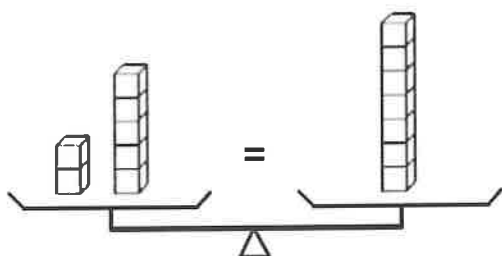
Illustrating Equivalence Using a Pan Balance

1. Complete the fact triangle. Write the fact family.



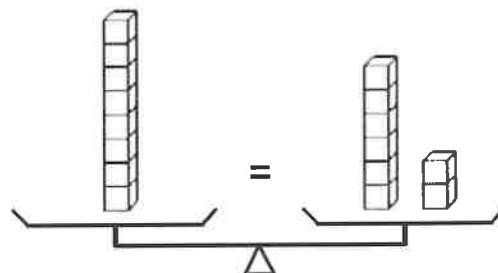
$$\begin{array}{l} \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \end{array}$$

2. Write the number model to match the objects.



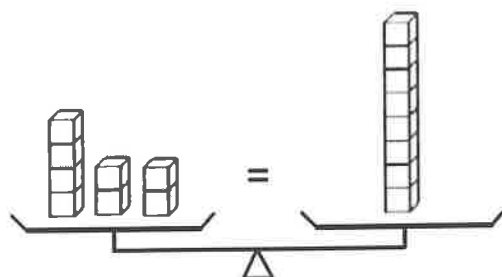
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

3. Write the number model to match the objects.



$$\underline{\quad} = \underline{\quad} + \underline{\quad}$$

4. Write the number model to match the objects.



$$\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

5. Draw objects on the pans to make both sides equal.



Using a Ten-Frame Card to Demonstrate the -9 and -8 Shortcuts

1. Add or subtract.

$$\begin{array}{r} 5 \\ + 4 \\ \hline \end{array}$$

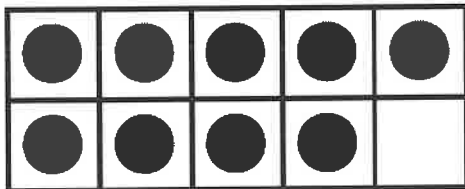
$$\begin{array}{r} 8 \\ - 4 \\ \hline \end{array}$$

2. Count back by 1s.

629, 628, _____, _____,

_____, _____

3. Use the ten frame to solve $12 - 9 = \square$.



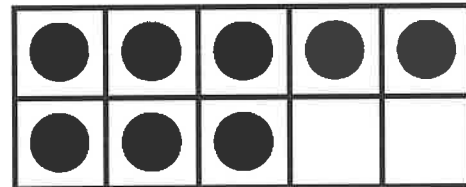
a. How many do you need to get to 10? _____

b. How many more do you need to get to 12? _____

c. What is the sum of your answers to parts a and b? _____

d. $12 - 9 =$ _____

4. Use the ten frame to solve $13 - 8 = \square$.



a. How many do you need to get to 10? _____

b. How many more do you need to get to 13? _____

c. What is the sum of your answers to parts a and b? _____

d. $13 - 8 =$ _____

5. Use a ten frame and counters to find the differences

a. $16 - 9 =$ _____

b. $12 - 8 =$ _____

6. Describe how you used a ten frame to find the solution to Problem 5b.

Grade 1: Number & Operations in Base Ten

Extend the counting sequence.

CCSS.Math.Content.1.NBT.A.1

Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Understand place value.

CCSS.Math.Content.1.NBT.B.2

Understand that the two digits of a two-digit number represent amounts of tens and ones.

Understand the following as special cases:

CCSS.Math.Content.1.NBT.B.2.a

10 can be thought of as a bundle of ten ones — called a "ten."

CCSS.Math.Content.1.NBT.B.2.b

The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.

CCSS.Math.Content.1.NBT.B.2.c

The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

CCSS.Math.Content.1.NBT.B.3

Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.

Use place value understanding and properties of operations to add and subtract.

CCSS.Math.Content.1.NBT.C.4

Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

CCSS.Math.Content.1.NBT.C.5

Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

CCSS.Math.Content.1.NBT.C.6

Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Place Value in 4-Digit Numbers

1. Match the place-value names.

- A. 3 ones _____ 30
- B. 3 tens _____ 300
- C. 3 hundreds A _____ 3
- D. 3 thousands _____ 3,000

Fill in the blanks. Write ones, tens, hundreds, or thousands.




2. The 7 in 5,379 stands for 7 tens.
3. The 5 in 2,785 stands for 5 _____.
4. The 4 in 4,239 stands for 4 _____.
5. The 0 in 1,062 stands for 0 _____.
6. The 3 in 8,043 stands for 3 _____.

Write the value of the underlined digit in each number.

7. 5,632 600
8. 9,417 _____
9. 3,182 _____
10. 6,053 _____
11. 1,968 _____
12. 820 _____

Finding the Mystery Number

Read each clue. Use base-10 blocks to build the mystery number.
Then use base-10 shorthand to show your work.

	,			
---	---	---	--	---

Example:

Clue: 12 ones, 3 tens



Mystery Number: 42



1. Clue: 15 ones, 6 tens

Mystery Number: _____

2. Clue: 7 ones, 21 tens

Mystery Number: _____

3. Clue: 2 ones, 16 tens

Mystery Number: _____

4. Clue: 6 ones, 12 tens, 2 hundreds

Mystery Number: _____

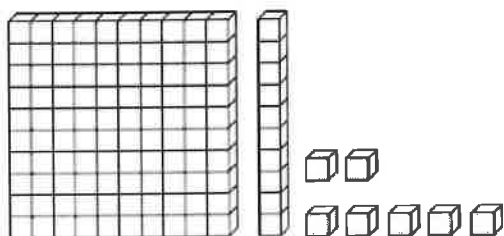
5. Make up a clue for a mystery number.
Give it to a partner to solve.

Clue: _____

Mystery Number: _____

Add or Subtract Multiples of 10 with Models and Number Grids

1. Write the number.



2. Use your number grid.

Start at 59.

Count back 10.

_____ = 59 - 10

3. Use your number grid.

Start at 30.

Count up 30.

30 + 30 = _____

4. Use your number grid.

Start at 88.

Count back 40.

88 - 40 = _____

5. Write the number that is 10 less and 10 more. Use base-ten blocks or a number grid.

10 Less

10 More

30

65

87

43

6. Explain how you found the numbers in the "Less" column in Problem 5.

Name: _____ Date: _____ Time: _____

Place Value in 4-Digit Numbers

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1. In the number 9,458,

the 5 means _____.

the 8 means _____.

the 9 means _____.

the 4 means _____.

2. Write the number that has

7 in the tens place

1 in the thousands place

6 in the ones place

5 in the hundreds place

_____, _____

3. Fill in the blanks. Write ones, tens, hundreds, or thousands.

a. The 9 in 3,449 stands for 9

_____.

b. The 2 in 2,098 stands for 2

_____.

4. Fill in the blanks. Write ones, tens, hundreds, or thousands.

a. The 8 in 483 stands for 8

_____.

b. The 3 in 1,326 stands for 3

_____.

5. Match names.

a. 2 tens _____ 200

b. 2 hundreds _____ 2,000

c. 2 thousands _____ 2

d. 2 ones _____ 20

6. Make up and solve your own Review Box.

Name: _____ Date: _____ Time: _____

Subtracting Ten from a 2-Digit Number

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1. Count back by 10s.

80, _____, _____, _____,
_____, _____

2. Solve.

$$50 - 20 = \underline{\quad}$$

$$40 - 30 = \underline{\quad}$$

$$70 - 10 = \underline{\quad}$$

3. Subtract mentally.

$$76 - 10 = \underline{\quad}$$

$$34 - 10 = \underline{\quad}$$

$$51 - 10 = \underline{\quad}$$

4. Subtract mentally.

$$67 - 10 = \underline{\quad}$$

$$93 - 10 = \underline{\quad}$$

$$18 - 10 = \underline{\quad}$$

5. Subtract mentally.

$$72 - 10 = \underline{\quad}$$

$$23 - 10 = \underline{\quad}$$

$$96 - 10 = \underline{\quad}$$

6. Describe how you solved Problem 5.

Grade 1: Measurement & Data

Measure lengths indirectly and by iterating length units.

CCSS.Math.Content.1.MD.A.1

Order three objects by length; compare the lengths of two objects indirectly by using a third object.

CCSS.Math.Content.1.MD.A.2

Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*

Tell and write time.

CCSS.Math.Content.1.MD.B.3

Tell and write time in hours and half-hours using analog and digital clocks.

Represent and interpret data.

CCSS.Math.Content.1.MD.C.4

Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Name: _____ Date: _____ Time: _____

Comparing Lengths of Objects

1. Order the 3 objects below from shortest to longest.



leaf

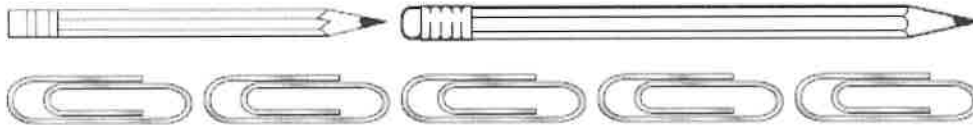


key



marker

2. Ana measured 2 pencils using paper clips. Circle the longer of the 2 pencils.



3. Circle the longer crayon.



4. Write 1 sentence that compares the objects in Question 1. Use words like *longer*, *shorter*, *about*, *a little more than*, and so on.

Name: _____ Date: _____ Time: _____

Measuring in Inches and Centimeters

1. How long is the line segment?

It is about _____ inches long.

2. Measure the length of your pencil.

It is about _____ centimeters long.

3. Measure the length of your shoe.

It is about _____ inches long.

4. Find an object that is about 5 centimeters long.

A _____ is about 5 centimeters long.

5. Find an object that is about 3 inches long.

A _____ is about 3 inches long.

Name: _____ Date: _____ Time: _____

Comparing Lengths in Inches

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1. Measure each line segment. How many inches longer is the first line segment than the second one?

_____ (unit)

2. Measure each line segment. How many inches shorter is the first line segment than the first one?

_____ (unit)

3. Describe how you figured the difference in inches between the first and the second line in Problem 2.

Name _____

Date _____

Time _____

Fish Poster



Fish A
12 in.



Fish B
14 in.



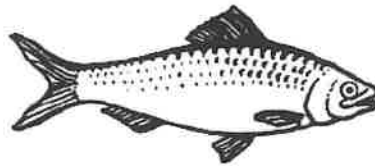
Fish C
18 in.



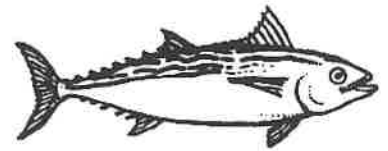
Fish D
24 in.



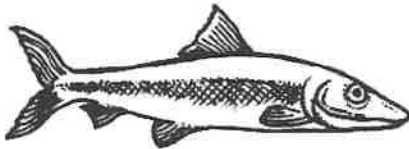
Fish E
24 in.



Fish F
30 in.



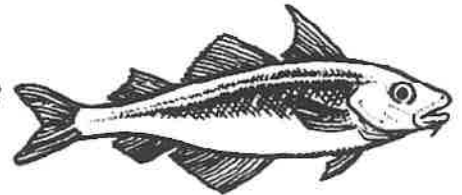
Fish G
30 in.



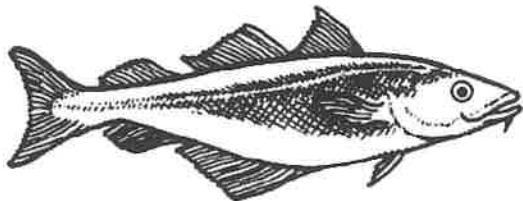
Fish H
30 in.



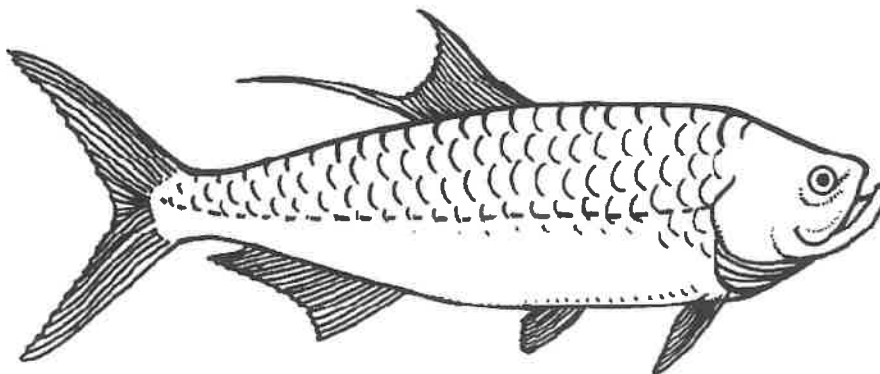
Fish I
30 in.



Fish J
36 in.



Fish K
42 in.



Fish L
72 in.

Comparing Lengths in Inches

Write the number to answer the question.

Example: How much longer is Fish H than Fish E?

_____ **6** _____ in.

1. How much longer is Fish E than Fish A?

_____ in.

2. How much shorter is Fish B than Fish D?

_____ in.

3. How much longer is Fish J than Fish F?

_____ in.

4. How much shorter is Fish I than Fish K?

_____ in.

5. How much longer is Fish E than Fish C?

_____ in.

6. How much shorter is Fish E than Fish J?

_____ in.

7. How much longer is Fish L than Fish K?

_____ in.

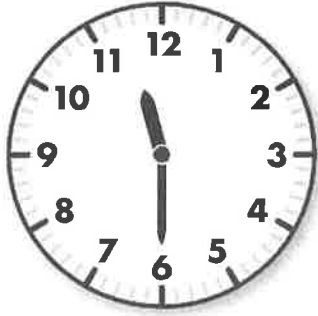
8. How much longer is Fish G than Fish B?

_____ in.

Telling Time to the Hour, Half-Hour, and Quarter-Hour

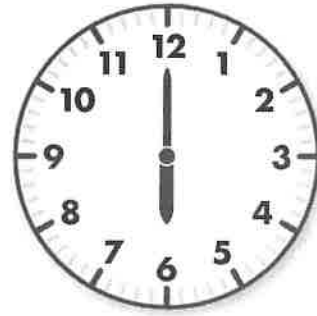
Record the time.

1.



half-past _____ o'clock

2.



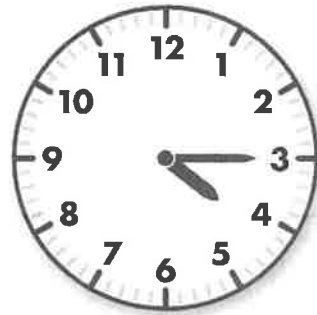
_____ o'clock

3.



quarter-to _____ o'clock

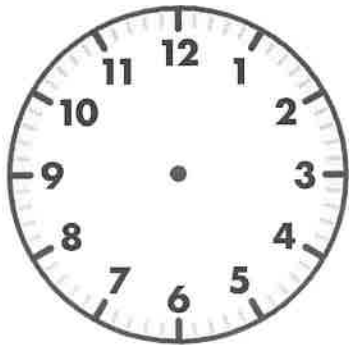
4.



quarter-past _____ o'clock

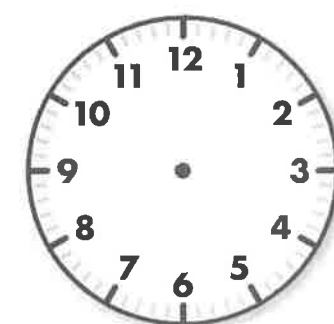
Draw the hands to show the time.

5.



quarter-to 5 o'clock

6.



half-past 3 o'clock

Reading and Writing Digital Notation

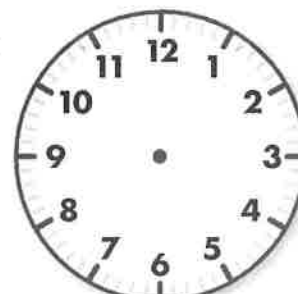
Draw the hour hand and the minute hand.

1.

4:00

2.

2:30

3.

6:15

Write the time.

4.

____:____

5.

____:____

6.

____:____

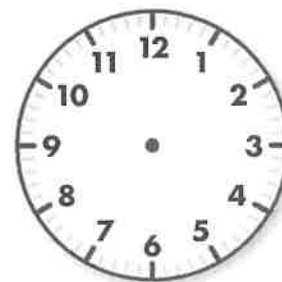
Make up your own times.

7. _____ o'clock**8.** half-past _____**9.** quarter-to _____

____:____



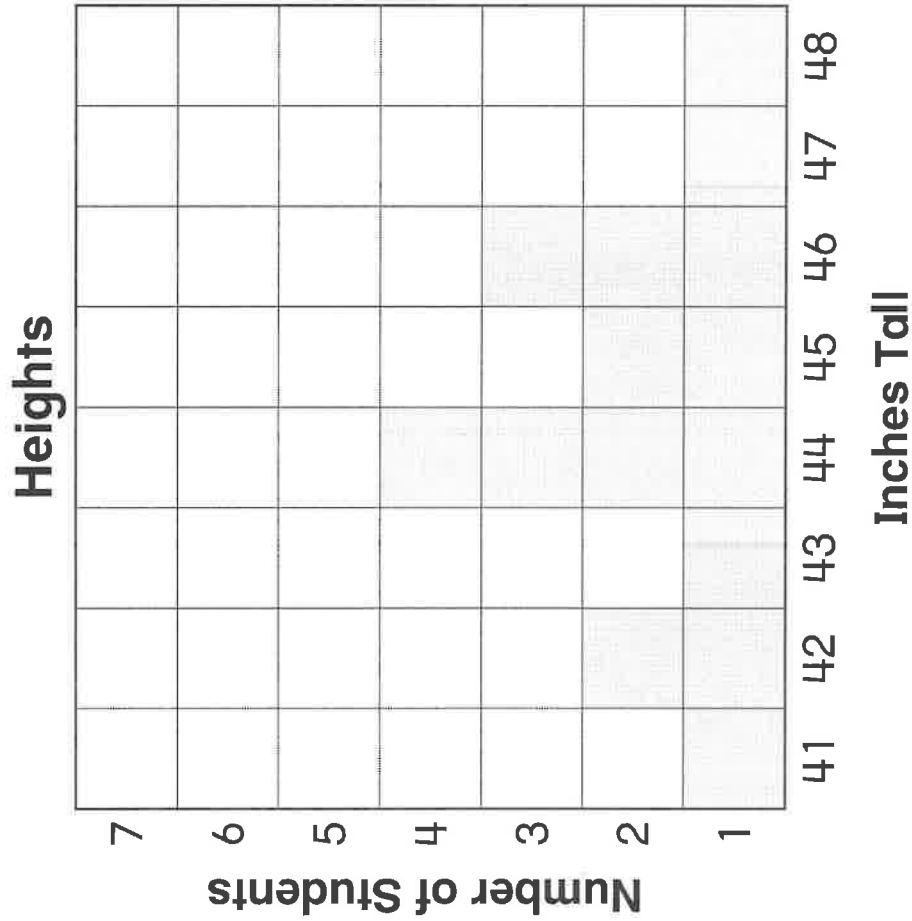
____:____



____:____

Finding Maximum and Minimum Values

This is a bar graph. It shows the heights of fifteen students.



1. What is the maximum height in the data set? _____
2. What is the minimum height in the data set? _____

Name: _____ Date: _____ Time: _____

Finding Maximum and Minimum Values

1. Write the numbers from least to greatest.

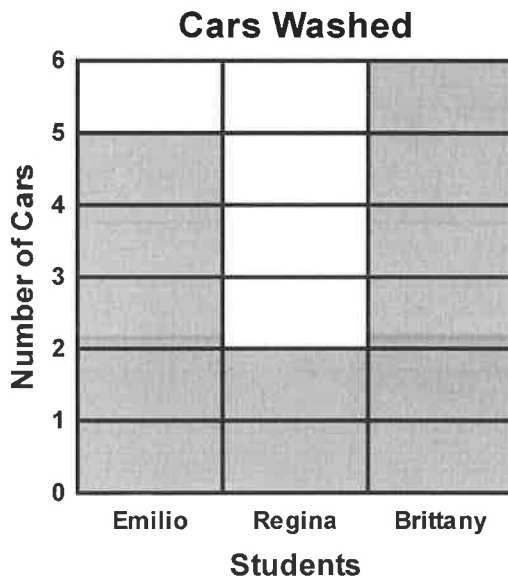
75 57 59 95

_____, _____, _____, _____

2. What is the maximum?
Circle the correct answer.

The smallest value
The middle value
The largest value
The most frequent value

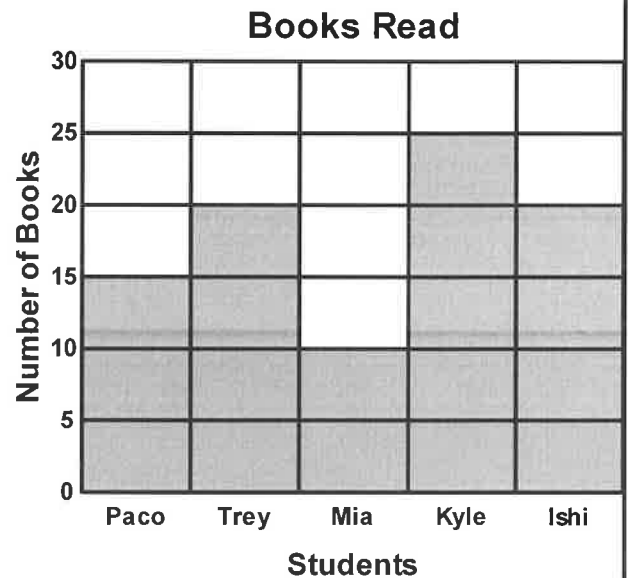
3. Use the graph to answer the questions.



Minimum number of cars: _____

Maximum number of cars: _____

4. Use the graph to answer the questions.



Minimum number of books: _____

Maximum number of books: _____

Name: _____ Date: _____ Time: _____

Recording Data with Tally Marks

1. a. Fill in the tally chart. A second grade class sold fruit during lunch. They sold 17 apples, 19 bananas, 6 oranges, and 8 pears.

Number of Pieces of Fruit Sold	
Apples	
Bananas	
Oranges	
Pears	

b. How many pieces of fruit were sold in all? _____

c. Which fruit was sold the least? _____

2. a. Add a tally mark to your favorite juice.

Favorite Juice	
Apple	
Orange	
Grape	

b. Which juice was the least popular? _____

c. Which juice was the most popular? _____

Line Plots

1. Fill in the tally chart. A second grade class sold fruit during lunch. They sold 9 apples and 19 bananas.

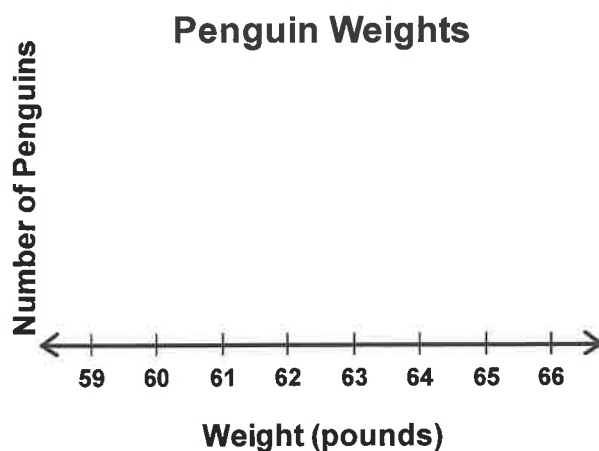
Number of Pieces of Fruit Sold	
Apples	
Bananas	

2. Fill in the tally chart. Students in Room 100 ate pizza at lunch. They ate 8 pieces of cheese pizza and 17 pieces of sausage pizza.

Number of Pieces of Pizza	
Cheese	
Sausage	

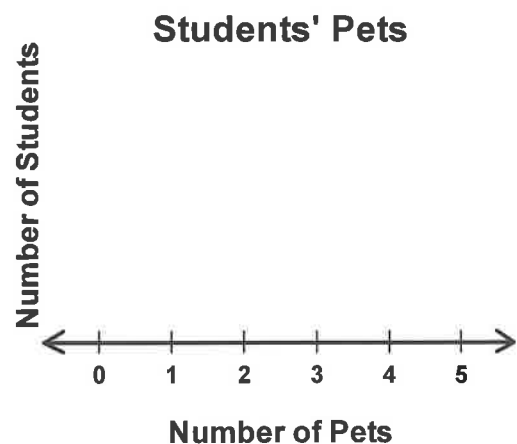
3. Emperor penguins are big. Some weights (in pounds) for these penguins are 65, 61, 64, 62, 61, 65, 60, 61, 66, 63, 62, 59, and 61.

Make a line plot to show the data.



4. Ms. Clark asked her students how many pets they have. Here were their answers: 0, 1, 0, 2, 0, 4, 1, 1, 1, 2, 0, 1, 1, and 0.

Make a line plot to show the data.



Grade 1: Geometry

Reason with shapes and their attributes.

CCSS.Math.Content.1.G.A.1

Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

CCSS.Math.Content.1.G.A.2

Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.¹

CCSS.Math.Content.1.G.A.3

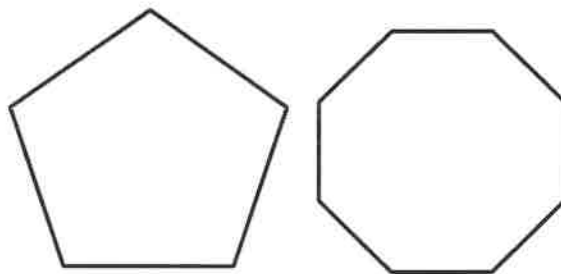
Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

Name: _____ Date: _____ Time: _____

Constructing Quadrilaterals

1. Draw 2 shapes that have exactly 4 sides and 4 corners. Write their names.

2. Draw an X over the pentagon.



3. Draw a quadrilateral. Make only 2 sides parallel.

4. Draw a quadrilateral. Make no sides parallel.

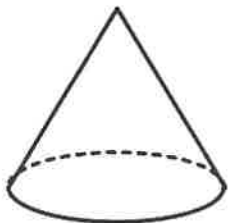
5. Draw a quadrilateral. Make only 2 sides equal in length.

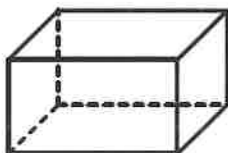
6. Draw your own quadrilateral. Write how many sides are parallel and how many sides are the same length.

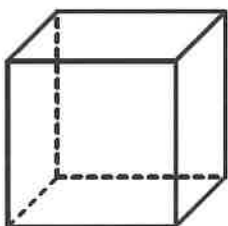
Name: _____ Date: _____ Time: _____

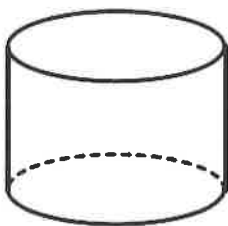
Building Solids

1. Write the name for each solid.

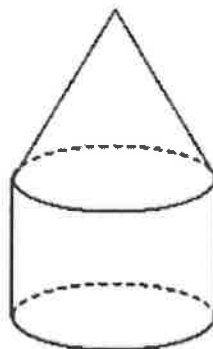




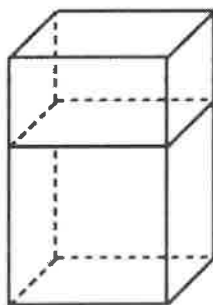




2. Which solids would you use to build this composite shape?



3. Which solids would you use to build this composite shape?



4. Name or draw a real-world object that is made of two or more solids.

Making Equal Parts of Shapes

Use a straightedge.

- 1.** Divide the shape into
2 equal parts.



How many halves? _____

- 2.** Divide the shape into
4 equal parts.



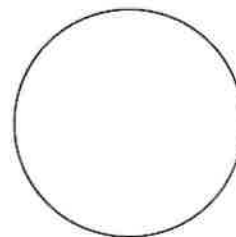
How many fourths? _____

- 3.** Divide the shape into
3 equal parts.



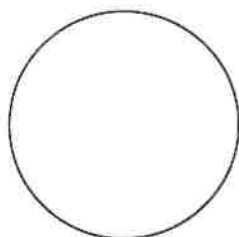
How many thirds? _____

- 4.** Divide the shape into
2 equal parts.



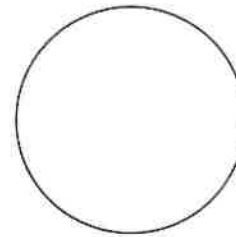
How many halves? _____

- 5.** Divide the shape into
4 equal parts.



How many fourths? _____

- 6.** Divide the shape into
3 equal parts.



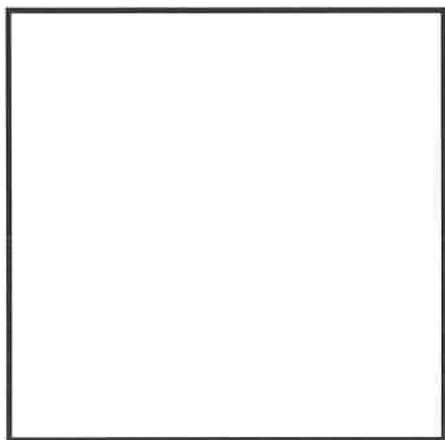
How many thirds? _____

Name: _____ Date: _____ Time: _____

Naming and Describing Halves, Thirds, and Fourths of a Region

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1. Divide the rectangle into fourths.

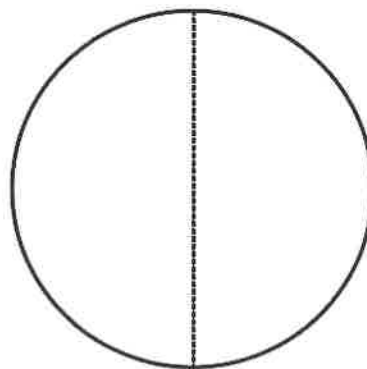


2. How many equal parts are there?

These equal parts are called

_____.

Write a fraction in each part of the circle. Color $\frac{1}{2}$ of the circle.

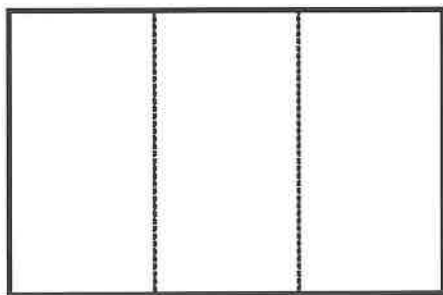


3. How many equal parts are there?

These equal parts are called

_____.

Write a fraction in each part of the rectangle. Color $\frac{1}{3}$ of the rectangle.



4. This shape is divided into

_____.

The fraction of this shape that is shaded is _____.

