



A Story of Units

Pleasanton
UNIFIED SCHOOL DISTRICT

Mathematics Curriculum



Grade 2 • MODULE 7

Problem Solving with Length, Money, and Data

Homework

Video tutorials: <http://embarc.online>

Info for parents: <http://bit.ly/pusdmath>

Version 3



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GRADE 2 • MODULE 7

Problem Solving with Length, Money, and Data

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NOTE: Student sheets should be printed at 100% scale to preserve the intended size of figures for accurate measurements. Adjust copier or printer settings to *actual size* and set page scaling to *none*.

Name _____

Date _____

1. Count and categorize each picture to complete the table with tally marks.

No Legs	2 Legs	4 Legs



2. Count and categorize each picture to complete the table with numbers.

Fur	Feathers



3. Use the Animal Habitats table to answer the following questions.

Animal Habitats		
Arctic	Forest	Grasslands
6	11	9

- How many animals live in the arctic? _____
 - How many animals have habitats in the forest and grasslands? _____
 - How many fewer animals have arctic habitats than forest habitats? _____
 - How many more animals would need to be in the grassland category to have the same number as the arctic and forest categories combined? _____
 - How many total animal habitats were used to create this table? _____
4. Use the Animal Classification table to answer the following questions about the class pets in West Chester Elementary School.

Animal Classification			
Birds	Fish	Mammals	Reptiles
7	15	18	9

- How many animals are birds, fish, or reptiles? _____
- How many more birds and mammals are there than fish and reptiles? _____
- How many animals were classified? _____
- If 3 more birds and 4 more reptiles were added to the table, how many fewer birds would there be than reptiles? _____

Name _____

Date _____

1. Use grid paper to create a picture graph below using data provided in the table. Then, answer the questions.

Favorite Mammals			
Tiger	Panda	Snow Leopard	Gorilla
8	11	7	12

Title: _____

- a. How many more people chose gorilla as their favorite mammal than chose tiger? _____
- b. How many more people chose tiger and gorilla as their favorite mammals than panda and snow leopard? _____
- c. How many fewer people chose tiger as their favorite mammal than panda? _____

Legend: _____

- d. Write and answer your own comparison question based on the data.

Question: _____

Answer: _____

2. Use the data of Mr. Clark's class vote to create a picture graph in the space provided.

Favorite Birds		
Penguin	Flamingo	Peacock

Title: _____

Legend: _____

- How many more students voted for peacocks than penguins? _____
- How many fewer votes are for flamingos than penguins and peacocks? _____
- Write and answer your own comparison question based on the data.

Question: _____

Answer: _____

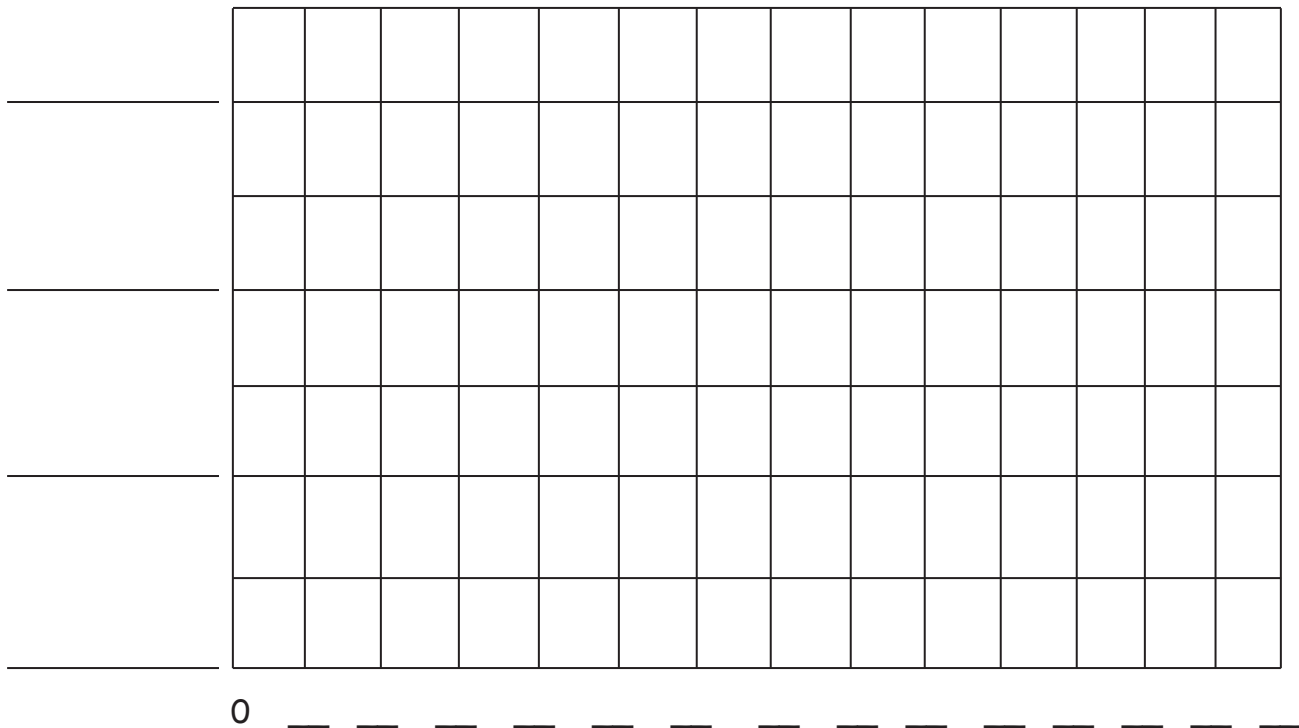
Name _____

Date _____

1. Complete the bar graph below using data provided in the table. Then, answer the questions about the data.

Various Animal Coverings at Jake's Pet Shop			
Fur	Feathers	Shells	Scales
12	9	8	11

Title: _____



- a. How many more animals have fur than shells? _____
- b. Which pair of categories has more, fur and feathers or shells and scales? (Circle one.) How much more? _____
- c. Write and answer your own comparison question based on the data.

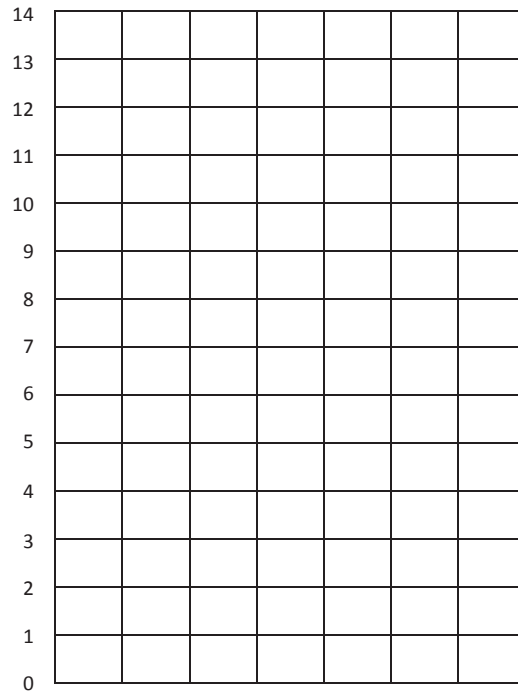
Question: _____

Answer: _____

2. Complete the bar graph below using data provided in the table.

City Shelter Animal Diets		
Meat Only	Plants Only	Meat and Plants
/	/	/ /

Title: _____



- How many total animals are in the city shelter? _____
- How many more meat and plant-eating animals are there than meat only? _____
- If 3 animals were removed from each category, how many animals would there be? _____
- Write your own comparison question based on the data, and answer it.

Question: _____

Answer: _____

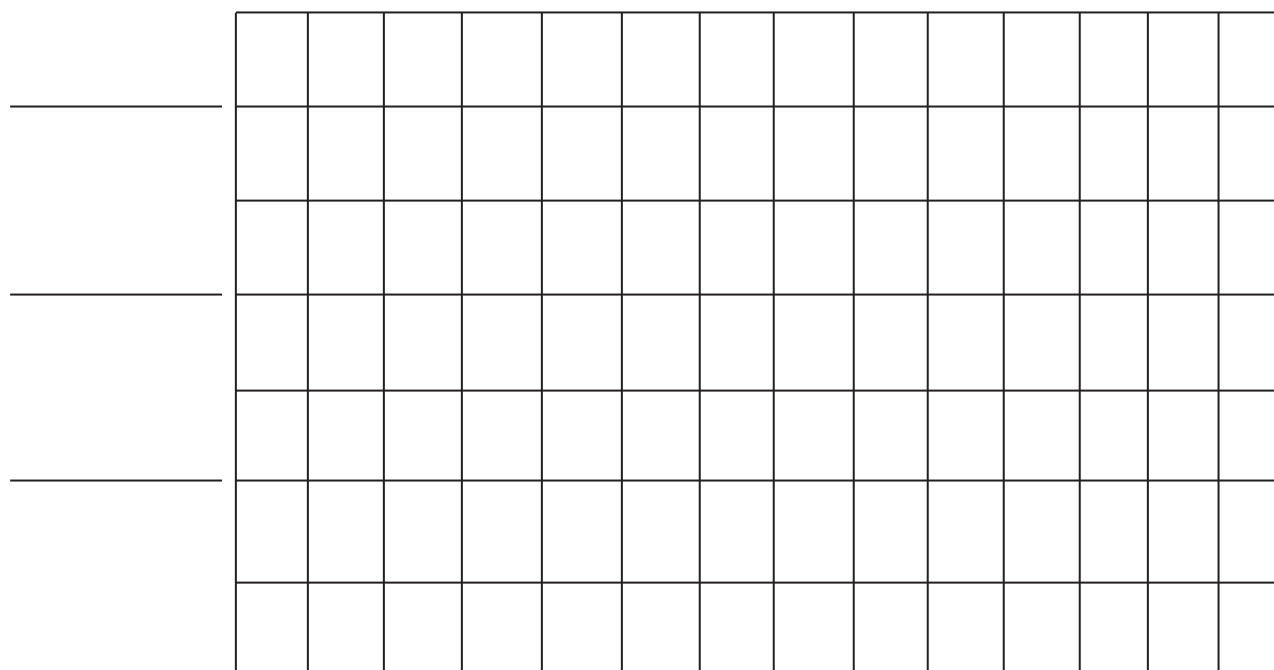
Name _____

Date _____

1. Complete the bar graph using the table with the types of reptiles at the local zoo. Then, answer the following questions.

Types of Reptiles			
Snakes	Lizards	Turtles	Tortoises
13	11	7	8

Title: _____



0 _____

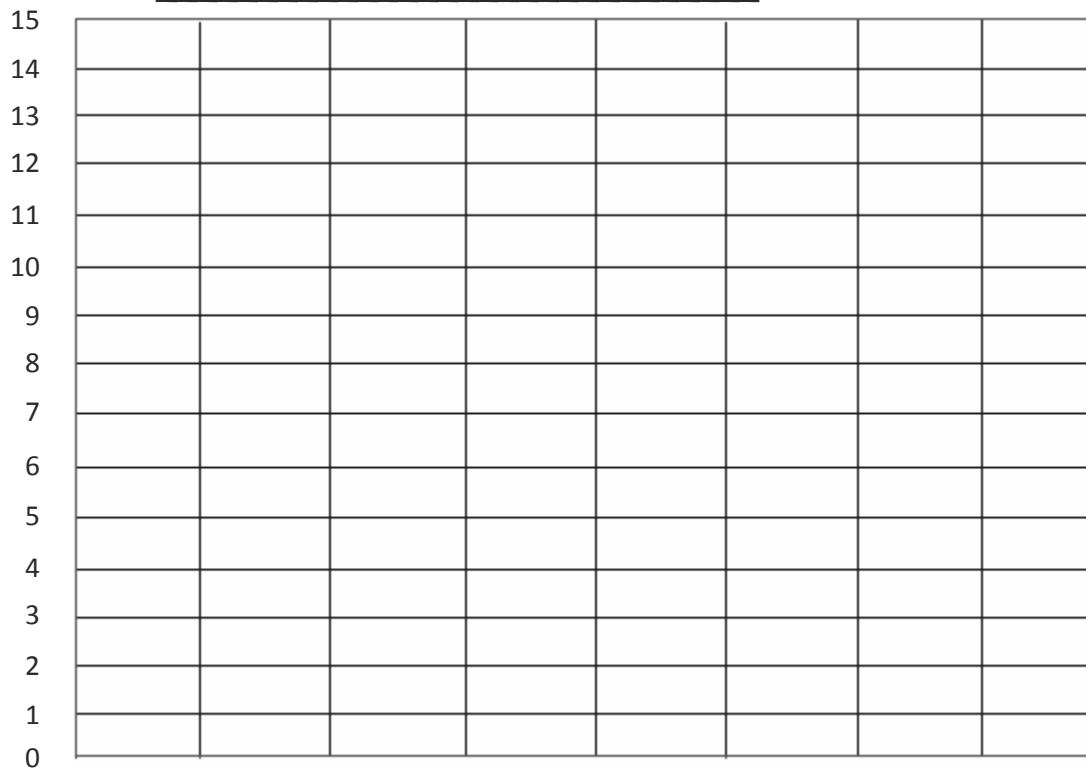
- How many reptiles are at the zoo? _____
- How many more snakes and lizards than turtles are at the zoo? _____
- How many fewer turtles and tortoises than snakes and lizards are at the zoo?

- Write a comparison question that can be answered using the data on the bar graph.

2. Complete the bar graph with labels and numbers, using the number of underwater animals Emily saw while scuba diving.

Underwater Animals			
Sharks	Stingrays	Starfish	Seahorses
6	9	14	13

Title: _____



- a. How many more starfish than sharks did Emily see? _____
- b. How many fewer stingrays than seahorses did Emily see? _____
- c. Write a comparison question that can be answered using the data on the bar graph.

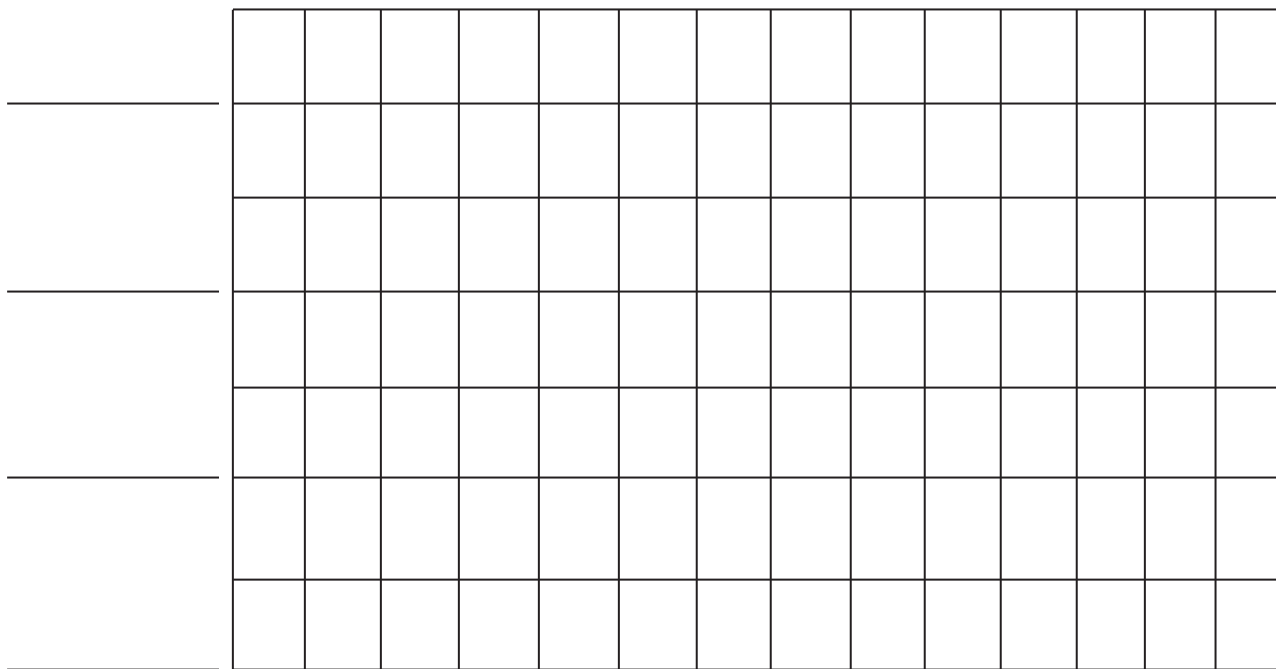
Name _____ Date _____

1. Use the table to complete the bar graph. Then, answer the following questions.

Number of Nickels

Justin	Melissa	Meghan	Douglas
13	9	12	7

Title: _____



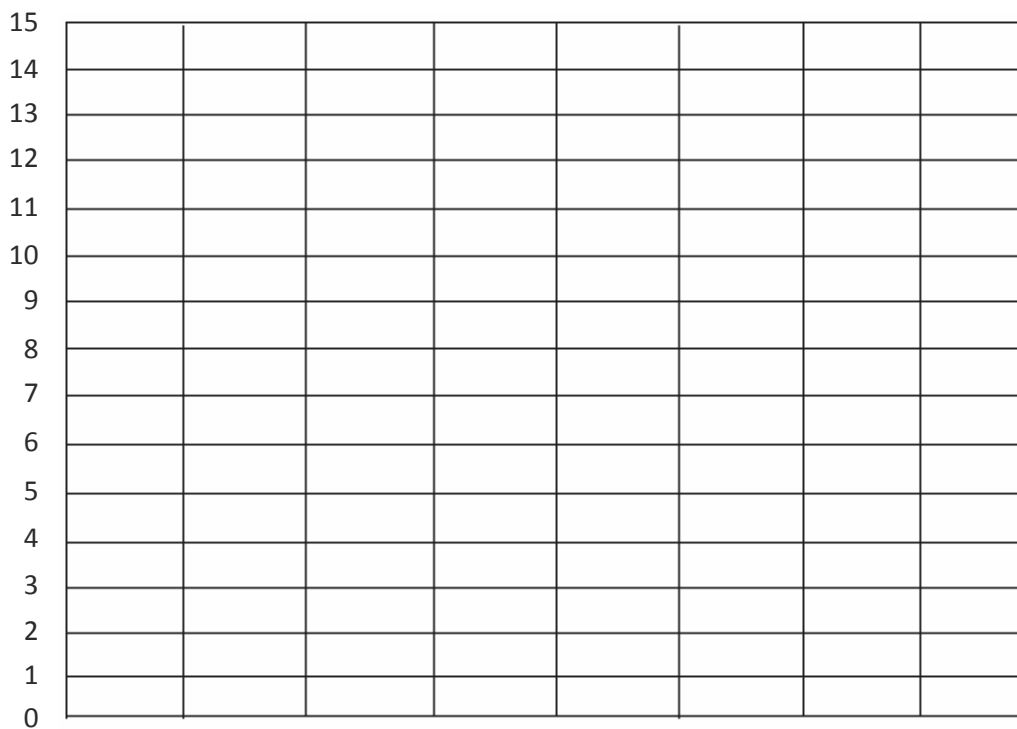
- How many more nickels does Meghan have than Melissa? _____
- How many fewer nickels does Douglas have than Justin? _____
- Circle the pair that has more nickels, Justin and Melissa or Douglas and Meghan.
How many more? _____
- What is the total number of nickels if all the students combine all their money?

2. Use the table to complete the bar graph. Then, answer the following questions.

Dimes Donated

Kylie	Tom	John	Shannon
12	10	15	13

Title: _____



- How many dimes did Shannon donate? _____
- How many fewer dimes did Kylie donate than John and Shannon? _____
- How many more dimes are needed for Tom to donate the same as Shannon and Kylie? _____
- How many dimes were donated in total? _____

Name _____

Date _____

Count or add to find the total value of each group of coins.

Write the value using the ¢ or \$ symbol.

1.		_____
2.		_____
3.		_____
4.		_____
5.		_____
6.		_____
7.		_____

8.



9.



10.



11.



12.



13.



14.



15.



Name _____

Date _____

Solve.

1. Owen has 4 dimes, 3 nickels, and 16 pennies. How much money does he have?
2. Eli found 1 quarter, 1 dime, and 2 pennies in his desk and 16 pennies and 2 dimes in his backpack. How much money does he have in all?
3. Carrie had 2 dimes, 1 quarter, and 11 pennies in her pocket. Then, she bought a soft pretzel for 35 cents. How much money does Carrie have left?

4. Ethan had 67 cents. He gave 1 quarter and 6 pennies to his sister. How much money does Ethan have left?
5. There are 4 dimes and 3 nickels in Susan's piggy bank. Nevaeh has 17 pennies and 3 nickels in her piggy bank. What is the total value of the money in both piggy banks?
6. Tison had 1 quarter, 4 dimes, 4 nickels, and 5 pennies. He gave 57 cents to his cousin. How much money does Tison have left?

Name _____

Date _____

Solve.





1. Mr. Chang has 4 ten-dollar bills, 3 five-dollar bills, and 6 one-dollar bills. How much money does he have in all?
2. At her yard sale, Danielle got 1 twenty-dollar bill and 5 one-dollar bills last week. This week, she got 3 ten-dollar bills and 3 five-dollar bills. What is the total amount she got for both weeks?
3. Patrick has 2 fewer ten-dollar bills than Brenna. Patrick has \$64. How much money does Brenna have?

4. On Saturday, Mary Jo received 5 ten-dollar bills, 4 five-dollar bills, and 17 one-dollar bills. On Sunday, she received 4 ten-dollar bills, 5 five-dollar bills, and 15 one-dollar bills. How much more money did Mary Jo receive on Saturday than on Sunday?
5. Alexis has \$95. She has 2 more five-dollar bills, 5 more one-dollar bills, and 2 more ten-dollar bills than Kasai. How much money does Kasai have?
6. Kate had 2 ten-dollar bills, 6 five-dollar bills, and 21 one-dollar bills before she spent \$45 on a new outfit. How much money was not spent?

Name _____

Date _____

Draw coins to show another way to make the same total value.

<p>1. 25 cents</p>  <p>1 dime and 3 nickels = 25 cents</p>	<p>Another way to make 25 cents:</p>
<p>2. 40 cents</p>  <p>4 dimes = 40 cents</p>	<p>Another way to make 40 cents:</p>
<p>3. 60 cents</p>  <p>2 quarters and 1 dime = 60 cents</p>	<p>Another way to make 60 cents:</p>
<p>4. 80 cents</p>  <p>3 quarters and 1 nickel = 80 cents</p>	<p>Another way to make 80 cents:</p>

5. Samantha has 67 cents in her pocket. Write two coin combinations she could have that would equal the same amount.

--	--

6. The store clerk gave Jeremy 2 quarters, 3 nickels, and 4 pennies. Write two other coin combinations that would equal the same amount of change.

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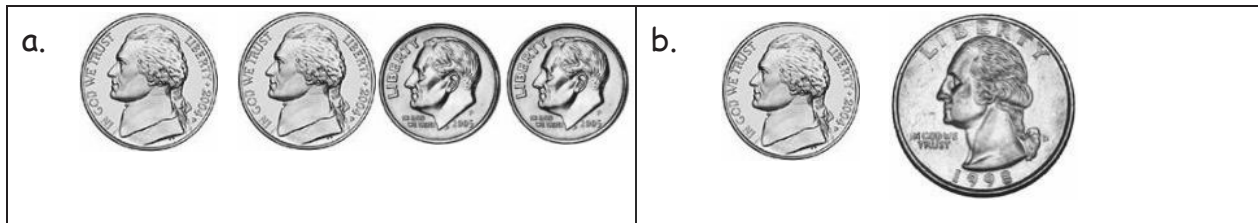
7. Chelsea has 10 dimes. Write two other coin combinations she could have that would equal the same amount.

--	--

Name _____

Date _____

1. Tara showed 30 cents two ways. Circle the way that uses the fewest coins.



What coins from (a) were changed for one coin in (b)?

2. Show 40¢ two ways. Use the fewest possible coins on the right below.

	Fewest coins:
--	---------------

3. Show 55¢ two ways. Use the fewest possible coins on the right below.

	Fewest coins:
--	---------------

4. Show 66¢ two ways. Use the fewest possible coins on the right below.

	Fewest coins:
--	---------------

5. Show 80¢ two ways. Use the fewest possible coins on the right below.

	Fewest coins:
--	---------------

6. Show \$1 two ways. Use the fewest possible coins on the right below.

	Fewest coins:
--	---------------

7. Tara made a mistake when asked for two ways to show 91¢. Circle her mistake, and explain what she did wrong.

3 quarters, 1 dime, 1 nickel, 1 penny	Fewest coins: 9 dimes, 1 penny
---------------------------------------	-----------------------------------

Name _____

Date _____

1. Count up using the arrow way to complete each number sentence. Then, use coins to check your answers, if possible.

a. $25¢ + \underline{\hspace{2cm}} = 100¢$

b. $45¢ + \underline{\hspace{2cm}} = 100¢$

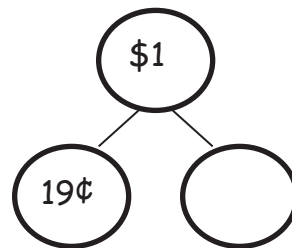
$$25 \xrightarrow{+5} \underline{\hspace{1cm}} \xrightarrow{+} 100$$

c. $62¢ + \underline{\hspace{2cm}} = 100¢$

d. $\underline{\hspace{2cm}} + 79¢ = 100¢$

2. Solve using the arrow way and a number bond.

a. $19¢ + \underline{\hspace{2cm}} = 100¢$



b. $77¢ + \underline{\hspace{2cm}} = 100¢$

c. $100¢ - 53¢ = \underline{\hspace{2cm}}$

3. Solve.

a. _____ + 38¢ = 100¢

b. 100¢ - 65¢ = _____

c. 100¢ - 41¢ = _____

d. 100¢ - 27¢ = _____

e. 100¢ - 14¢ = _____

Name _____ Date _____

Solve using the arrow way, a number bond, or a tape diagram.

1. Kevin had 100 cents. He spent 3 dimes, 3 nickels, and 4 pennies on a balloon.
How much money does he have left?
2. Colin bought a postcard for 45 cents. He gave the cashier \$1. How much change did he receive?
3. Eileen spent 75 cents of her dollar at the market. How much money does she have left?

4. The puzzle Casey wants costs \$1. She has 6 nickels, 1 dime, and 11 pennies. How much more money does she need to buy the puzzle?
5. Garret found 19 cents in the sofa and 34 cents under his bed. How much more money will he need to find to have \$1?
6. Kelly has 38 fewer cents than Molly. Molly has \$1. How much money does Kelly have?
7. Mario has 41 more cents than Ryan. Mario has \$1. How much money does Ryan have?

Name _____

Date _____

1. Kelly bought a pencil sharpener for 47 cents and a pencil for 35 cents. What was her change from \$1?

2. Hae Jung bought a pretzel for 3 dimes and a nickel. She also bought a juice box. She spent 92 cents. How much was the juice box?

3. Nolan has 1 quarter, 1 nickel, and 21 pennies. His brother gave him 2 coins. Now, he has 86 cents. What 2 coins did his brother give him?

4. Monique saved 2 ten-dollar bills, 4 five-dollar bills, and 15 one-dollar bills. Harry saved \$16 more than Monique. How much money does Harry have saved?
5. Ryan went shopping with 3 twenty-dollar bills, 3 ten-dollar bills, 1 five-dollar bill, and 9 one-dollar bills. He spent 59 dollars on a video game. How much money does he have left?
6. Heather had 3 ten-dollar bills and 4 five-dollar bills left after buying a new pair of sneakers for \$29. How much money did she have before buying the sneakers?

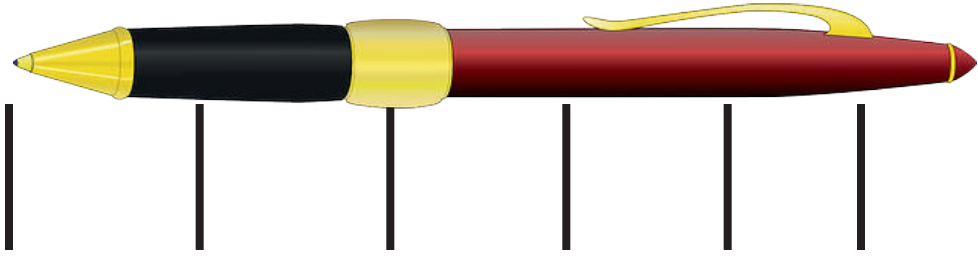
Name _____

Date _____

1. Measure these objects found in your home with an inch tile. Record the measurements in the table provided.

Object	Measurement
Length of a kitchen fork	
Height of a juice glass	
Length across the center of a plate	
Length of the refrigerator	
Length of a kitchen drawer	
Height of a can	
Length of a picture frame	
Length of a remote control	

2. Norberto begins measuring his pen with his inch tile. He marks off where each tile ends. After two times, he decides this process is taking too long and starts to guess where the tile would end and then marks it.



Explain why Norberto's answer will not be correct.

3. Use your inch tile to measure the pen. How many inch tiles long is the pen?

Name _____

Date _____

Measure the length of each household object with your ruler, and then use your ruler to draw a line equal to the length of each object in the space provided.

1. a. A dinner fork is _____ inches.
b. Draw a line that is the same length as the fork.

2. a. A tablespoon is _____ inches.
b. Draw a line that is the same length as the tablespoon.

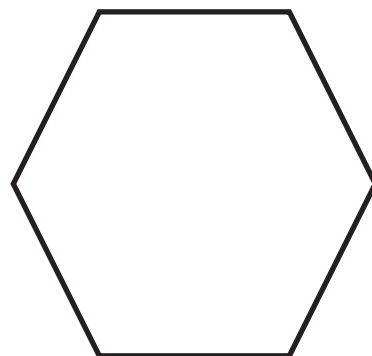
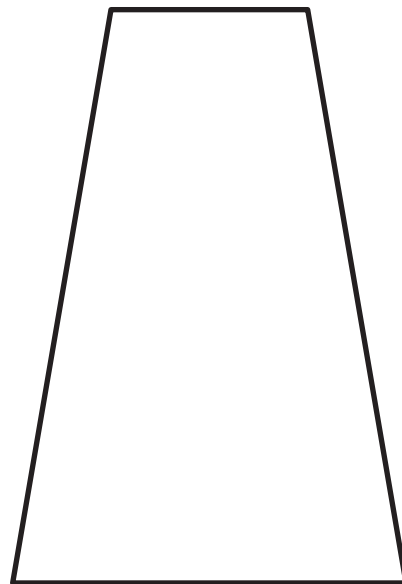
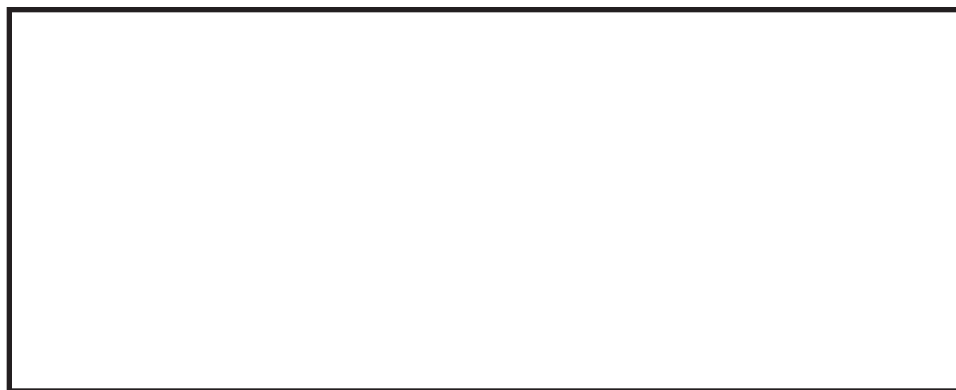
Measure two other household objects.

3. a. _____ is _____ inches.
b. Draw a line that is the same length as the _____.

4. a. _____ is _____ inches.
b. Draw a line that is the same length as the _____.

5. a. What was the longest object you measured? _____
b. What was the shortest object you measured? _____
c. The difference between the longest object and the shortest object is _____ inches.

6. Measure and label the length of each side of each shape in inches using your ruler.



- The longer side of the rectangle is _____ inches.
- The shorter side of the rectangle is _____ inches.
- The longer side of the rectangle is _____ inches longer than the shorter side of the rectangle.
- The shortest side of the trapezoid is _____ inches.
- The longest side of the trapezoid is _____ inches.
- The longest side of the trapezoid is _____ inches longer than the shortest side.
- Each side of the hexagon is _____ inches.
- The total length around the hexagon is _____ inches.



Name _____

Date _____

1. Circle the unit that would best measure each object.

Height of a door	inch / foot / yard
Textbook	inch / foot / yard
Pencil	inch / foot / yard
Length of a car	inch / foot / yard
Length of your street	inch / foot / yard
Paint brush	inch / foot / yard

2. Circle the correct estimate for each object.

- a. The height of a flagpole is more than / less than / about the same as the length of a yardstick.
- b. The width of a door is more than / less than / about the same as the length of a yardstick.
- c. The length of a laptop computer is more than / less than / about the same as the length of a 12-inch ruler.
- d. The length of a cellphone is more than / less than / about the same as the length of a 12-inch ruler.

3. Name 3 objects in your classroom. Decide which unit you would use to measure that object. Record it in the chart in a full statement.

Object	Unit
a.	I would use _____ to measure the length of _____.
b.	
c.	

4. Name 3 objects in your home. Decide which unit you would use to measure that object. Record it in the chart in a full statement.

Object	Unit
a.	I would use _____ to measure the length of _____.
b.	
c.	

Name _____

Date _____

Estimate the length of each item by using a mental benchmark. Then, measure the item using feet, inches, or yards.

Item	Mental Benchmark	Estimation	Actual Length
a. Length of a bed			
b. Width of a bed			
c. Height of a table			
d. Length of a table			
e. Length of a book			

Item	Mental Benchmark	Estimation	Actual Length
f. Length of your pencil			
g. Length of a refrigerator			
h. Height of a refrigerator			
i. Length of a sofa			

Name _____ Date _____

Measure the lines in inches and centimeters. Round the measurements to the nearest inch or centimeter.

1. _____

_____ cm

_____ in

2. _____

_____ cm

_____ in

3. _____

_____ cm

_____ in

4. _____

_____ cm

_____ in

5. a. Draw a line that is 5 centimeters in length.
- b. Draw a line that is 5 inches in length.
6. a. Draw a line that is 7 inches in length.
- b. Draw a line that is 7 centimeters in length.
7. Takeesha drew a line 9 centimeters long. Damani drew a line 4 inches long. Takeesha says her line is longer than Damani's because 9 is greater than 4. Explain why Takeesha might be wrong.
-
-
-
8. Draw a line that is 9 centimeters long and a line that is 4 inches long to prove that Takeesha is wrong.

Name _____ Date _____

Measure each set of lines in inches and write the length on the line. Complete the comparison sentence.

1. Line A _____

Line B _____

Line A measured about _____ inches. Line B measured about _____ inches.

Line A is about _____ inches **longer** than Line B.

2. Line C _____

Line D _____

Line C measured about _____ inches. Line D measured about _____ inches.

Line D is about _____ inches **shorter** than Line C.

3. Solve. Check your answers with a related addition or subtraction sentence.

a. 8 inches - 5 inches = _____ inches

_____ inches + 5 inches = 8 inches

b. 8 centimeters + _____ centimeters = 19 centimeters

c. 17 centimeters - 8 centimeters = _____ centimeters

d. _____ centimeters + 6 centimeters = 18 centimeters

e. 2 inches + _____ inches = 7 inches

f. 12 inches - _____ = 8 inches

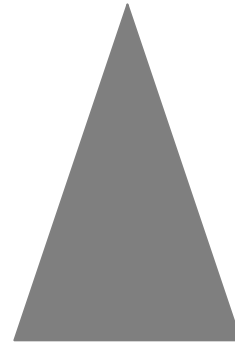
Name _____

Date _____

Solve using tape diagrams. Use a symbol for the unknown.

1. Luann has a piece of ribbon that is 1 yard long. She cuts off 33 inches to tie a gift box. How many inches of ribbon are not used?
2. Elijah runs 68 yards in a 100-yard race. How many more yards does he have to run?
3. Chris has a 57-inch piece of string and another piece that is 15 inches longer than the first. What is the total length of both strings?

4. Janine knitted 12 inches of a scarf on Friday and 36 inches on Saturday. She wants the scarf to be 72 inches long. How many more inches does she need to knit?
5. The total length of all three sides of a triangle is 120 feet. Two sides of the triangle are the same length. One of the equal sides measures 50 feet. What is the length of the side that is not equal?



?

6. The length of one side of a square is 3 yards. What is the combined length of all four sides of the square?

Name _____ Date _____

Find the value of the point on each part of the meter strip marked by a letter.

For each number line, one unit is the distance from one hash mark to the next.

1.



Each unit has a length of _____ centimeters.

A = _____

2.



Each unit has a length of _____ centimeters.

B = _____

3.

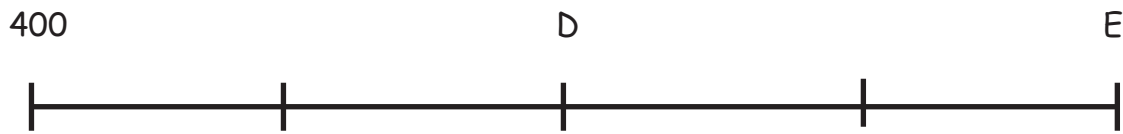


Each unit has a length of _____ centimeters.

C = _____

2•7

4. Each hash mark represents 5 more on the number line.



What is the difference between D and E? _____

D = _____

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

5. Each hash mark represents 10 more on the number line.



What is the difference between the two endpoints? _____.

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

6. Each hash mark represents 10 more on the number line.



What is the difference between the two endpoints? _____.

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

Name _____

Date _____

1. Each unit length on both number lines is 10 centimeters.

(Note: Number lines not drawn to scale.)

- a. Show 20 centimeters more than 35 centimeters on the number line.



- b. Show 30 centimeters more than 65 centimeters on the number line.



- c. Write an addition sentence to match each number line.

2. Each unit length on both number lines is 5 yards.

- a. Show 35 yards less than 80 yards on the following number line.

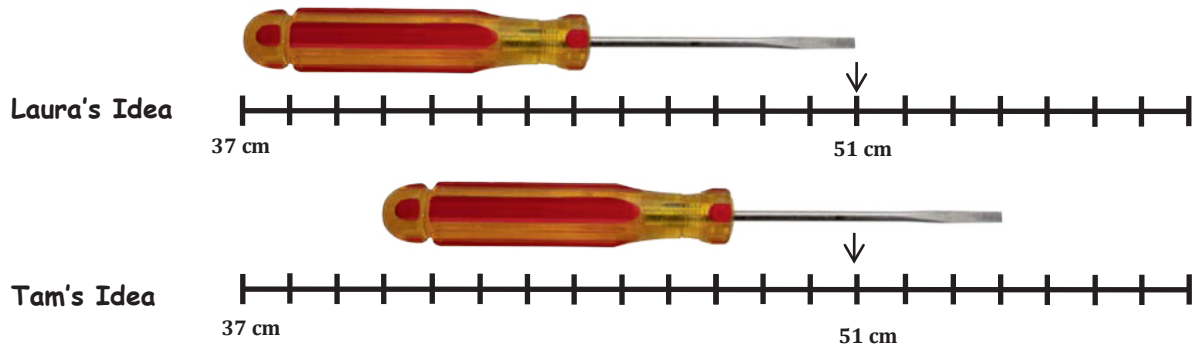


- b. Show 25 yards less than 100 yards on the number line.



- c. Write a subtraction sentence to match each number line.

3. Laura's meter strip got cut off at 37 centimeters. To measure the length of her screwdriver, she writes "51 cm - 37 cm." Tam says it's easier to move the screwdriver over 3 centimeters. What is Tam's subtraction sentence? Explain why she's correct.



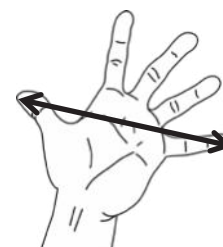
4. Alice measured her belt to be 22 inches long using a yardstick, but she didn't start her measurement at zero. What might be the two endpoints of her belt on her yardstick? Write a subtraction sentence to match your idea.
5. Isaiah ran 100 meters on a 200-meter track. He started running at the 19-meter mark. On what mark did he finish his run?

Name _____

Date _____

Measure your handspan and record the length here: _____

Then, measure the handspans of your family members and write the lengths below.



Name:

Handspan:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

1. Record your data using tally marks on the table provided.

Handspan	Tally of Number of People
3 inches	
4 inches	
5 inches	
6 inches	
7 inches	
8 inches	

a. What is the most common handspan length? ____

b. What is the least common handspan length? ____

c. Ask and answer one comparison question that can be answered using the data above.

Question:

Answer:

2. a. Use your ruler to measure the lines below in inches. Record the data using tally marks on the table provided.

Line A _____

Line B _____

Line C _____

Line D _____

Line E _____

Line F _____

Line G _____

Line Length	Number of Lines
Shorter than 4 inches	
Longer than 4 inches	
Equal to 4 inches	

- b. How many more lines are shorter than 4 inches than equal to 4 inches?

- c. What is the difference between the number of lines that are shorter than 4 inches and those that are longer than 4 inches? _____
- d. Ask and answer one comparison question that could be answered using the data above.

Question: _____

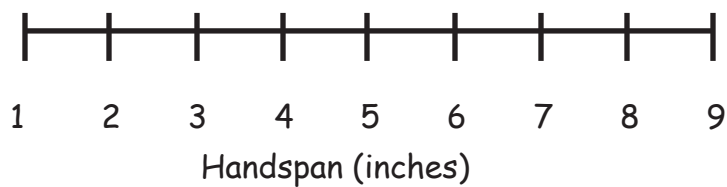
Answer: _____

Name _____ Date _____

1. Use the data in the table to create a line plot and answer the question.

Handspan (inches)	Number of Students
2	
3	
4	
5	
6	
7	
8	

Handspans of Students in Ms. DeFransico's Class



Describe the pattern you see in the line plot:

2. Use the data in the table to create a line plot and answer the questions.

Length of Right Foot (centimeters)	Number of Students
17	
18	
19	
20	
21	
22	
23	

Lengths of Right Feet of Students in Ms. DeFransico's Class

Line Plot

- a. Describe the pattern you see in the line plot.

- b. How many feet are longer than 20 centimeters? _____

- c. How many feet are shorter than 20 centimeters? _____

- d. Create your own comparison question related to the data.

Name _____

Date _____

Use the data in the charts provided to create line plots and answer questions.

1. The chart shows the lengths of the necklaces made in arts and crafts class.

Length of Necklaces	Number of Necklaces
16 inches	3
17 inches	0
18 inches	4
19 inches	0
20 inches	8
21 inches	0
22 inches	9
23 inches	0
24 inches	16

Title _____

Line Plot

- a. How many necklaces were made? _____

- b. Draw a conclusion about the data in the line plot:

2. The chart shows the heights of towers students made with blocks.

Height of Towers	Number of Towers
15 inches	9
16 inches	6
17 inches	2
18 inches	1

Title _____

Line Plot

- a. How many towers were measured? _____
- b. What tower height occurred most often? _____
- c. If 4 more towers were measured at 17 inches and 5 more towers were measured at 18 inches, how would it change how the line plot looks?

- d. Draw a conclusion about the data in the line plot:

Name _____

Date _____

Use the data in the table provided to create a line plot and answer the questions.
Plot only the lengths of shoelaces given.

1. The table below describes the lengths of student shoelaces in Ms. Henry's class.

Length of Shoelaces (inches)	Number of Shoelaces
27	6
36	10
38	9
40	3
45	2

- a. How many shoelaces were measured? _____
- b. How many more shoelaces are 27 or 36 inches than 40 or 45 inches? _____
- c. Draw a conclusion as to why zero students had a 54-inch shoelace.
- _____
2. For this data, a **line plot** / **table** (circle one) is easier to read because...
- _____

Use the data in the table provided to create a line plot and answer questions.

3. The table below describes the lengths of crayons in centimeters in Ms. Harrison's crayon box.

Length (centimeters)	Number of Crayons
4	4
5	7
6	9
7	3
8	1

a. How many crayons are in the box? _____

b. Draw a conclusion as to why most of the crayons are 5 or 6 centimeters:





Video tutorials: <http://bit.ly/eurekapusd>
Info for parents: <http://bit.ly/pusdmath>