EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

During the next week, our math class will learn to sort pictures and information into categories and to record that **data** in a **table**. We will also learn to create and use **picture graphs** and **bar graphs** to organize and represent a data set with up to four categories per graph. We will discover that organizing information this way makes it easier to compare and use data to answer questions and solve problems.

You can expect to see homework that asks your child to do the following:

- Sort pictures into categories to complete a table with **tally marks** or numbers.

- Use data from a table to create a picture graph that includes a title, **symbols**, categories, and a **legend**, and use the data to answer questions.

- Use data from a table to create a bar graph that includes a title, categories, and a **scale**, and use the data to answer questions.

- Write comparison questions based on data from a table or graph. For example, "How many fewer animals are reptiles than mammals?"

SAMPLE PROBLEM *(From Lesson 2)*

Use the grid paper below to create a picture graph with data from the table. Then, answer the questions.

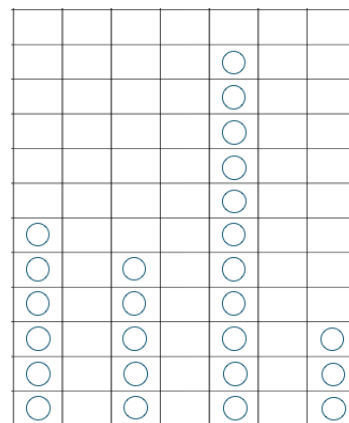a. How many more animals are mammals and fish than birds and reptiles? **7**

$11 + 5 = 16$ $6 + 3 = 9$ $16 - 9 = 7$

b. How many fewer animals are reptiles than mammals? **8**

$11 - 3 = 8$

Central Park Zoo Animal Classification			
Birds	Fish	Mammals	Reptiles
6	5	11	3

Title: *Central Park Zoo Animal Classification*

Birds	Fish	Mammals	Reptiles
		○	
		○	
		○	
		○	
		○	
○		○	
○	○	○	
○	○	○	
○	○	○	○
○	○	○	○
○	○	○	○

Legend: *Each ○ stands for 1 animal.*

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Encourage your child to sort household objects into categories. For example, he can sort groceries by food groups or clothing by color.

- Invite your child to create a picture graph for different types of coins. Give her a small handful of pennies, dimes, nickels, and quarters, and then ask her to sort and organize the coins by type. Encourage your child to draw a picture graph on paper to represent how many of each type of coin are in the groups.

- Invite your child to use a different color for each bar when he creates a bar graph. This helps your child to distinguish the bars from each other.

TERMS

**Data:** A set of facts or pieces of information.

Legend: The notation on a graph explaining what any symbols represent. (See Sample Problem.)

Scale: A number line indicating what the various quantities in a bar graph represent. (See Bar Graph below.)

Symbol: A picture that represents something else (e.g., each ○ stands for 1 coin).

MODELS

Bar Graph: A representation of data using bars.

Animal Classification
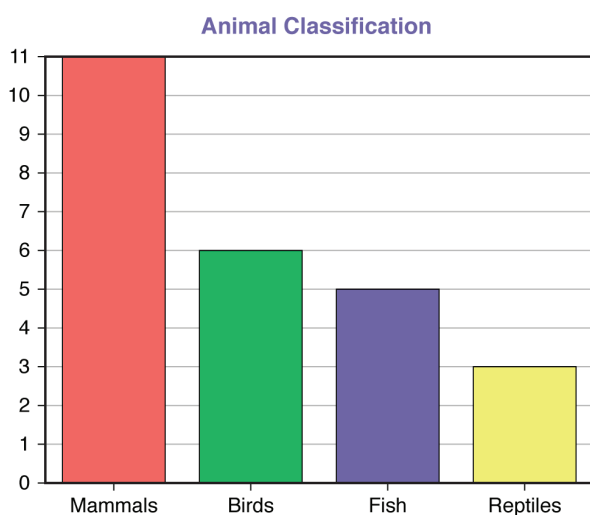
Picture Graph: A representation of data using symbols (pictures).

Trees in Springfield Park

Types of Trees

= 1 tree
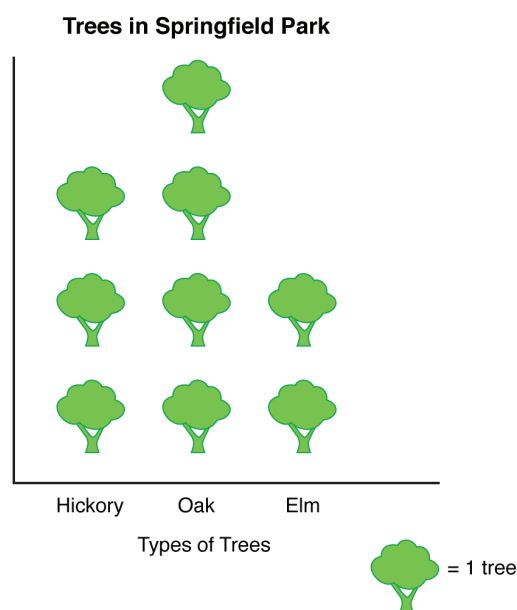
Table: A representation of data using rows and columns.

Toy	Number of Students
Stuffed Animals	11
Toy Cars	5
Blocks	13

Tally Marks: A quick way to record numbers in groups of 5; used in a table or graph to keep track of results.

Ice Cream Flavor	Tally Marks	Votes
Chocolate	||||	4
Strawberry	|||	3
Cookie Dough	⅏ ⅏	10

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KEY CONCEPT OVERVIEW

During the next week, our math class will solve problems involving coins and bills. We will count the total value of a group of coins, skip-counting by fives and tens as needed. We will learn to make change from one dollar by using **counting on** and simplifying strategies (e.g., the arrow way), and we will solve one- and two-step word problems involving money.

You can expect to see homework that asks your child to do the following:

- Count on or add to find the total value of various groups of coins, and write the value by using the ¢ symbol or the $ symbol.

- Use the RDW process and the arrow way, a number bond, or a tape diagram to solve word problems involving money.

- Use the fewest possible coins to show a given amount of money; for example, use a nickel and a quarter to show 30¢.

- Use different strategies, such as the arrow way, to make one dollar or to make change from one dollar.

SAMPLE PROBLEM *(From Lesson 11)*

Solve by using the arrow way and a number bond.

22¢ + **78¢** = 100¢

$$22 \xrightarrow{+8} 30 \xrightarrow{+70} 100$$
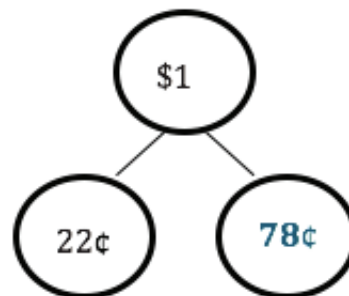
Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Help your child develop coin recognition by showing her a variety of coins and asking her to name each coin and state its value.

- Give your child groups of coins and ask him to count on to find the total value, starting with the coins of greatest value and ending with the coins of least value.

- Help your child practice making one dollar or making change from one dollar by asking her questions such as, "If I have 35¢, how much more do I need to have 100¢, or one dollar?" Give your child coins to show how she counts on to one dollar, and challenge her to record her work by using the arrow way.

TERMS

Count on: To count up from one addend, or number, to the total. For example, in 6 + __ = 8, we can start at 6 and count on two more to reach the total of 8.

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

During the next few days, our math class will revisit and deepen our understanding of concepts related to measurement. We will build on our knowledge of centimeters to learn about another unit of length, the **inch**. We will also learn that just as 100 centimeters form a larger unit called a meter, 12 inches form a larger unit called a **foot**. We will use an inch tile and a technique known as mark and move forward to measure various objects. We will also create an inch ruler and use it to measure and compare the lengths of objects around the classroom.

You can expect to see homework that asks your child to do the following:

- Use an inch tile and the mark and move forward technique to measure household objects.
- Use a student-made inch ruler to measure the length of household objects, and then use the ruler to draw lines equal to the length of each object.
- Use the student-made inch ruler to measure and label the length of each side of various shapes, and then use inches to compare the differences in length.

SAMPLE PROBLEM *(From Lesson 15)*

Measure the length of an object with your ruler. Then, in the space provided, use your ruler to draw a line equal to the length of the object. (NOTE: The scenario below refers to a particular object in one classroom setting. Answers may vary.)

A crayon is __3__ inches. Draw a line that is the same length as the crayon.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Encourage your child to make comparisons and connections between centimeters and inches. For example, a centimeter is shorter than an inch, but your child can use both units in the same way to measure objects.

- Encourage your child to think about measurement by asking questions such as the following: "How would you decide which length unit to use to measure the remote control?" "Which unit of length would you use to measure the TV?" "When is it more helpful to use a larger unit?" "When is using smaller units helpful?" "Why is it more efficient to measure with a ruler than with inch tiles or centimeter cubes?"

- Play an estimation game with your child. Challenge her to estimate the length of objects around the home, and then have her measure each object to see how close her estimate is to the actual measurement.

TERMS

Inch (in): A standard unit of length. One inch is about as long as 2.5 centimeters.

Foot (ft): A standard unit of length equal to 12 inches.

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

During the next few days, our math class will explore measurement by using both customary units of length (e.g., inches, feet, **yards**) and metric units of length (e.g., centimeters, meters). We will rotate through various centers and choose appropriate tools to measure a variety of objects. We will develop mental benchmarks for customary units. For example, the width of a quarter is about one inch, and the length of a sheet of paper is about one foot. We will measure the same object twice by using different customary and metric units. This will reinforce prior learning that it takes more smaller units (e.g., centimeters) than larger units (e.g., inches) to measure the same object. Finally, we will measure to compare objects, determining how much longer one is than another.

You can expect to see homework that asks your child to do the following:

- Choose the best unit (e.g., inch, foot, yard) to measure a given object.

- Estimate the length of a given item by using a mental benchmark; then measure the item by using inches, feet, or yards.

- Measure a line by using both centimeters and inches. Compare the measurements and relate the difference to the sizes of the length units.

- Measure and compare two lengths and use addition or subtraction to determine the difference.

SAMPLE PROBLEM *(From Lesson 18)*

Sam draws a line that is 11 centimeters long. Susan draws a line that is 8 inches long. Susan thinks her line is shorter than Sam's because 8 is less than 11. Explain why Susan's reasoning might be incorrect.

Susan's reasoning might be incorrect because the size of the length unit matters. The 8-inch line could be longer than the 11-centimeter line because even though 8 is a smaller number than 11, an inch is a larger length unit than a centimeter.

(NOTE: Susan's line is longer than Sam's.)

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Invite your child to create a list of mental benchmarks. For example, a 12-inch ruler can be a mental benchmark for 12 inches or 1 foot; the width of a door is about 1 yard; the width of a quarter is about 1 inch.

- Play an estimation game with your child. Challenge him to estimate the length of objects around the home, and then have him measure each one to see how close his estimate is to the actual measurement.

- Invite your child to draw one line that is 5 centimeters long and another line that is 5 inches long. Then ask her, "Why is one line longer when the number of units is the same?" (The same number of units makes a longer line when using inches rather than centimeters because inches are longer than centimeters.) OR (It takes more centimeters than inches to measure an object because centimeters are shorter.)

TERMS

Yard (yd): A unit of length equal to 36 inches or 3 feet.

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

During the next few days, our math class will solve word problems involving length. We will also learn to use reference points to identify missing points on a number line. For example, on a number line with 10 as one endpoint and 30 as the other endpoint, we will identify the midpoint as 20. We will also use number lines to show addition and subtraction. For example, we will show 20 centimeters more than 35 centimeters and then write 35 + 20 = 55.

You can expect to see homework that asks your child to do the following:

- Use the RDW process and tape diagrams to solve two-digit addition and subtraction word problems involving customary and metric length units.

- Use known points on a number line to find the distance between hash marks; then use that information to identify other points on the line.

- Model addition and subtraction on a number line, and write an accompanying addition or subtraction sentence.

SAMPLE PROBLEM *(From Lesson 22)*

On both number lines, the unit length is 20 feet.

a. Show 60 feet more than 80 feet on the number line.

80   140
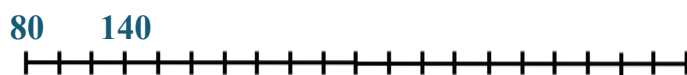
Write an addition sentence to match the number line.
80 + 60 = 140

b. Show 80 feet less than 125 feet on the number line.

45   125

Write a subtraction sentence to match the number line.
125 − 80 = 45

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- To support your child's use of tape diagrams to compare lengths, invite him to measure and cut paper into strips to compare actual lengths. He can measure the difference between two lengths and relate that to an equation. For example, ask your child to measure and cut a strip of paper 11 inches long and write the total length on the strip. Then have him measure and cut a strip 8 inches long and label that strip with its total length. Help your child line up the ends of the strips to resemble a tape diagram and then measure the difference in lengths. Encourage your child to write a related equation (e.g., $11 - 8 = 3$ or $8 + 3 = 11$).

- Play Roll and Follow the Rule to help your child maintain or build fluency with addition and subtraction. Give your child a base number such as 9, and then have her roll a die to find the rule. For example, if she rolls a 5, she adds 5 repeatedly: $9 + 5 = 14$, $14 + 5 = 19$, $19 + 5 = 24$. Have your child record as many number sentences as she can for 30 seconds and then switch to a different base number and roll the die for a new rule. Play again with subtraction, starting with a base number such as 40. For example, if your child rolls a 2, she subtracts 2 repeatedly: $40 - 2 = 38$, $38 - 2 = 36$, $36 - 2 = 34$.

- Gather several nickels and invite your child to use them to practice skip-counting by 5's. This will reinforce his familiarity with nickels and prepare him for upcoming lessons on telling time in 5-minute increments.

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

During the next few days, our math class will learn how to display measurement data on a **line plot**. We will begin by measuring the **handspans** of students in the class and recording the data with tally marks on a table. Next, we will learn how to draw a line plot to represent the data. We will answer questions and draw conclusions based on patterns we see on the line plot.

You can expect to see homework that asks your child to do the following:

▪ Measure the handspans of family members, record the data on a table by using tally marks, and ask and answer questions based on the data.

▪ Use the data in a table to create a line plot, answer questions about the data, and describe patterns in the line plot. (See Sample Problem.)

▪ Create comparison questions related to the data displayed on a line plot. (See Sample Problem.)

▪ Draw conclusions about the data in a line plot. For example, looking at the line plot in the Sample Problem, students could draw the conclusion that only a few kids sharpen their pencils a lot because only three pencils are 3 inches long or shorter.

SAMPLE PROBLEM *(From Lesson 24)*

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

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

   The most common pencil length is 5 inches, but 4 inches and 6 inches are also common. Most of the X's are in the middle of the line plot.

b. Create your own comparison question related to the data. (Answers will vary.)

   How many fewer pencils have a length of 4 inches than a length of 5 inches?

Pencil Length (in inches)	Number of Pencils
2	‖
3	∣
4	卌
5	卌 ‖
6	卌 ∣
7	
8	∣
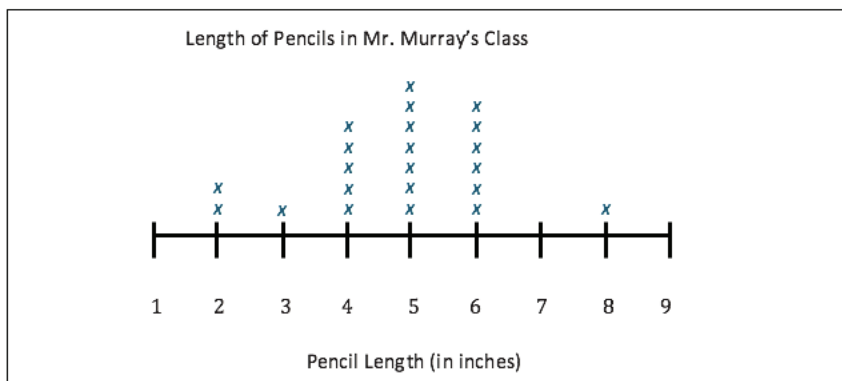
Length of Pencils in Mr. Murray's Class

Pencil Length (in inches)

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

▪ Invite your child to use grid paper to create line plots. Encourage him to place the hash marks for the number line where the grid lines intersect. This practice will also help your child accurately place X's in neat columns above the number line.

▪ Encourage your child to think about the data displayed on the completed handspan line plot from the Lesson 24 Homework. Ask questions such as, "If we compared a line plot showing only the handspans of adults with a line plot showing only the handspans of children, what would we notice? Would the line plots look different? Would the most common handspan length be different?"

▪ Help your child make connections among line plots, tables, bar graphs, and picture graphs by asking questions such as, "Do line plots remind you of other graphs you have used?" "How are the types of graphs similar and different?" "How does each type of graph help you organize and compare information?" "Can you think of a time when you would want or need to organize information?" "How would you decide which type of graph to use?"

TERMS

Handspan: The distance from the tip of the thumb to the tip of the pinkie when the fingers are fully extended.

MODELS

Line Plot: A graphical representation of data.
(See image at right.)

Class Handspans

Inches