

# MATH PARENT GUIDE – UNIT 7

# 4



## IMPORTANT CONCEPTS YOUR STUDENT SHOULD KNOW AND ACTIVITIES TO DO AT HOME

### MEASUREMENT

#### “I Can” Help My Student

- **I can** decompose rectilinear figures into non-overlapping squares and rectangles to find the total area of the rectilinear figure.
- **I can** describe the relative sizes of measurement units (e.g., km, m, cm; kg, g; lb, oz; L, mL; hr, min, sec).
- **I can** represent a larger unit as a multiple of smaller units within the same system of measurement
- **I can** use the four operations to solve word problems including distance, time, volume, mass, and money.
- **I can** represent measurements using diagrams.
- **I can** explain the formulas for area and perimeter, and use them to solve problems.
- **I can** create a line plot with given data set of measurement using fractions as a unit, and use it to solve problems.



#### KEY WORDS TO KNOW

**measure:** unit specified by a scale, such as an inch, or a system of measurement, such as the metric system.

**metric:** the base-ten measuring system based on the meter, liter, and gram as units of length, capacity, and mass.

**customary:** the system of measurement commonly used in the United States. Common units are: (length) inches, feet, yards, and miles; (weight) ounces, pounds, and tons; (capacity) ounces, cups, pints, quarts, and gallons.

**convert (conversion):** to express (a quantity) in alternative units – i.e., 12 feet = 4 yards.

**distance:** the property created by the space between two objects or points.

**line plot:** a line plot shows the spread of data; each piece of data is represented by an “X.”

**perimeter:** distance around a figure; measured in *units*.

**area:** number of square units needed to cover the inside of a plane; measured in *square units*.

**elapsed time:** the amount of time that passes between two points in time.



#### What should my student already know before beginning this unit?

- ✓ Able to tell and write time to the nearest minute, and solve addition and subtraction problems involving time intervals.
- ✓ Able to measure and estimate liquid volumes and masses of objects, and solve one-step word problems with this information.
- ✓ Use a ruler to measure to the nearest half-inch and fourth-inch.
- ✓ Recognize the area of a shape and understand that a square with a side length of “1 unit” is called the “unit square.”



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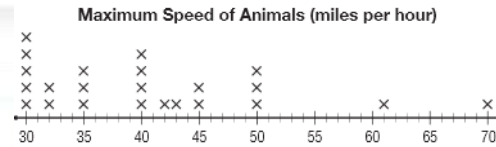


## MEASUREMENT

### Important Concepts Addressed in this Unit

- In this unit, students will:
- investigate what it means to measure length, weight, liquid volume, time, and angles using tools
  - understand how different units within a system (customary and metric) are related
  - know relative measurement sizes of units within one system of units (km, m, cm; kg, g; lb, oz; L, ml; hr, min, sec).
  - solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including simple fractions or decimals.
  - make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ )
  - solve problems involving addition and subtraction of fractions by using information presented in line plots
  - apply the area and perimeter formulas for rectangles in real world and mathematical problems.
  - decompose rectilinear figures into non-overlapping squares and rectangles to find the total area recognize angles as geometric shapes that are formed when two rays share a common endpoint, and understand concepts of angle measurement
  - measure angles in whole number degrees using a protractor
  - recognize angle measurement as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the measures of the parts.

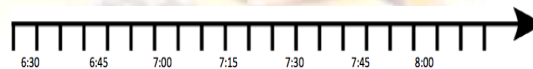
### Sample Problems



**Sample Problem 1:** How many animals represented in the line plot have a maximum speed of 45 miles per hour?

**Sample Problem 2:** A bakery is 13 yards wide and 23 yards long. The baker wants to put a wooden shelf around the inside of the bakery. The wooden shelving costs \$4.00 per yard. How much will the baker's shelf cost?

**Sample Problem 3:** At 7:00 a.m. Candace wakes up to go to school. It takes her 8 minutes to shower, 9 minutes to get dressed and 17 minutes to eat breakfast. How many minutes does she have until the bus comes at 8:00 a.m.? Use the number line to help solve the problem.



### How You Can Help Your Student

#### Interactive Learning Games

##### Convert Metric Units:

<http://www.sheppardsoftware.com/mathgames/measurement/>

##### Convert All Metric Units:

<http://www.quia.com/mc/9260.html>

##### Choose the Appropriate Metric Measure:

<http://ca.ixl.com/math/grade-4/choose-the-appropriate-metric-unit-of-measure>

##### Measurement Matching Game:

[http://www.quia.com/mc/1107467.html?A\\_P\\_rand=788731188](http://www.quia.com/mc/1107467.html?A_P_rand=788731188)

##### Matching Game for Ounces, Pounds, and

Tons: <http://www.oswego.org/ocsd-web/match/matchgeneric.asp?filename=ccarrollweight>

##### Finding Equivalent Measures:

[http://www.harcourtschool.com/activity/c\\_on\\_math/g04c24.html](http://www.harcourtschool.com/activity/c_on_math/g04c24.html)

