



THIRD GRADE MATHEMATICS – Unit 8

Dear Parents,

During this unit, students will focus on problem solving in order to demonstrate fluency with addition and subtraction to 1000 and demonstrate fluency for multiplication and division within 100. Students will solve problems involving measurement and estimation of liquid volumes, and masses of objects.

In addition, students will represent data using picture graphs and bar graphs and interpret the data to solve problems. In Grade 3 students draw picture graphs in which each picture represents more than one object, and they draw bar graphs in which the height of a given bar in tick marks must be multiplied by the scale factor in order to yield the number of objects in the given category.

DEMONSTRATE COMPUTATIONAL FLUENCY IN PROBLEM SOLVING

Students need to:

- Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*
- Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with measurement scale) to represent the problem. (This unit extends students work in Unit 2 to include multiplication and division to solve problems involving measurement quantities). *Note: Students are NOT responsible for doing conversions. However, the comparison between ml and l / g and kg may help students “reason” about volumes and masses.*
- Fluently add and subtract within 1000 using strategies and algorithms based on the following: place value, properties of operations or the relationship between addition and subtraction. *Note: A range of algorithms may be used.*
- Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
- Solve two-step problems involving the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

WAYS PARENTS CAN HELP

- Share and discuss tables and graphs found in newspapers and magazines.
- Conduct a survey among family members or friends and construct a bar graph or pictograph. Ask questions to interpret the data in the graph.
- Create and help your child solve real world 2 step word problems (add or subtract and multiply or divide). For example, we baked 2 trays of 15 cookies. We want to share them equally between 5 bags. How many cookies should we place into each bag?
- Give your child the grocery ads in the newspaper to make a shopping list. Assign a budget. Have your child use mental math to estimate the total cost of the items and then figure out the change. Then ask your child to calculate the actual sum and difference.
- Create and help your child solve some real world measurement problems involving liquid volumes and masses of objects. For example, a 1 liter soda bottle has a liquid volume of 1,000 milliliters. How many milliliters would be in a serving if you shared it among two people, four people, 5 people, 10 people (etc.)?
- Give your child an addition or subtraction problem and have them explain how they solved it.

KEY VOCABULARY

bar graph	horizontal axis	picture graph
data	increase	scale
decrease	interpret	survey
display	key	tally marks
frequency table	organize	title
graph		vertical axis