

Eureka Math Parent Guide

A GUIDE TO SUPPORT PARENTS AS THEY WORK WITH THEIR STUDENTS IN MATH.

**GRADE 4
MODULE 7**

GRADE FOCUS

Fourth grade mathematics is about (1) developing understanding and fluency with multi-digit multiplication and division; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; and (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

- Module 1: Place Value, Rounding, and Algorithms for Addition and Subtraction
- Module 2: Unit Conversions and Problem Solving with Metric Measurement
- Module 3: Multi-Digit Multiplication and Division
- Module 4: Angle Measure and Plane Figures
- Module 5: Fraction Equivalence, Ordering, and Operations
- Module 6: Decimal Fractions

» **Module 7: Exploring Multiplication**

LET'S CHECK IT OUT!

MODULE 7 FOCUS

In this final module of Grade 4, students build their competencies in measurement as they relate multiplication to the conversion of measurement units. Throughout the module, students explore multiple strategies for solving measurement problems involving unit conversion.

MORE SPECIFICALLY, CHILDREN WILL LEARN HOW TO:

- Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5.
- Use addition, subtraction, multiplication and division to solve multi-step word problems
- Know relative sizes of measurement units within one system of units (e.g. centimeter vs. meter)
- Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money.

TOPIC OVERVIEW

Topics are the lessons within a module that help children master the skills above. Here are the lessons that will guide your child through Module 7:

- Topic A: Lines and Angles
- Topic B: Angle Measurement
- Topic C: Problem Solving with the Addition of Angle Measures
- Topic D: Two-Dimensional Figures and Symmetry

WORDS TO KNOW

- **Customary system of measurement:** measurement system used in the United States that includes such units as yards, pounds, and gallons
- **Customary unit:** e.g., foot, ounce, quart
- **Cup (c):** customary unit of measure for liquid volume
- **Gallon (gal):** customary unit of measure for liquid volume
- **Metric system of measurement:** base ten system of measurement used internationally that includes such units as meters, kilograms, and liters
- **Metric unit:** e.g., kilometer, gram, milliliter
- **Ounce (oz):** customary unit of measure for weight
- **Pint (pt):** customary unit of measure for liquid volume
- **Pound (lb):** customary unit of measure for weight
- **Quart (qt):** customary unit of measure for liquid volume

SAMPLE PROBLEMS

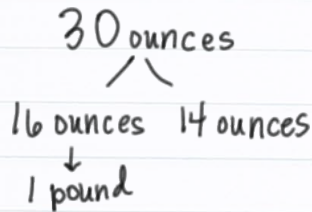
SAMPLE 1

A pound to ounce conversion table like those students create and use in Module 7

Pounds	Ounces
1	16
2	32
3	48
4	64
5	80
6	96
7	112
8	128
9	144
10	160

SAMPLE 2

A number bond decomposes 30 ounces to make a mixed unit of 1 pound 14 ounces



Module 7 further tells the Story of Units by focusing on customary measurement units (gallons, pints, yards, etc.). Students decompose them, convert them, and strengthen their sense of what each customary unit represents. Two-column tables are an important organizational tool that helps students see how the larger and smaller units relate to each other, as well as what a “unit” means in each situation, e.g., 16 ounces = 1 pound.

Two-column tables also reappear as organizational tools in later years, such as when students learn simple linear functions and use the tables to calculate coordinate pairs. In this module, the structure of the table is provided for students in order to scaffold their learning, to record the conversion from larger to smaller units, and to see the multiplicative relationship between two units of measurement.

SAMPLE 3

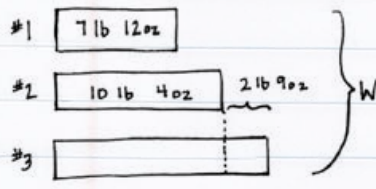
Two different Two-Column Tables featuring customary measurements and time from Module 7

Quarts	Pints
1	
2	
6	
10	
16	

Minutes	Seconds
1	60
2	120
3	180
4	240
5	300
6	360
7	420
8	480
9	540
10	600

SAMPLE 4

One pumpkin weighs 7 pounds 12 ounces. A second pumpkin weighs 10 pounds 4 ounces. A third pumpkin weighs 2 pounds 9 ounces more than the second pumpkin. What is the total weight of all three pumpkins?



The total weight of all 3 pumpkins is 30 pounds 9 ounces.

Solution A

$$\begin{aligned}
 &10 \text{ lb } 4 \text{ oz} \xrightarrow{+2 \text{ lb } 9 \text{ oz}} 12 \text{ lb } 13 \text{ oz} \\
 &7 \text{ lb } 12 \text{ oz} \xrightarrow{+10 \text{ lb } 4 \text{ oz}} 17 \text{ lb } 16 \text{ oz} \xrightarrow{+12 \text{ lb } 13 \text{ oz}} 30 \text{ lb } 13 \text{ oz} \\
 &W = 30 \text{ lb } 13 \text{ oz}
 \end{aligned}$$

Solution B

$$\begin{aligned}
 &10 \text{ lb } 4 \text{ oz} + 2 \text{ lb } 9 \text{ oz} = 12 \text{ lb } 13 \text{ oz} \\
 &W = 7 \text{ lb } 12 \text{ oz} + 10 \text{ lb } 4 \text{ oz} + 12 \text{ lb } 13 \text{ oz} \\
 &= 29 \text{ lb } 29 \text{ oz} \\
 &\quad \quad \quad \uparrow \\
 &\quad \quad \quad 16 \text{ } ^1 \text{ } 13 \\
 &W = 30 \text{ lb } 13 \text{ oz}
 \end{aligned}$$

HOW YOU CAN HELP AT HOME

- As often as possible, notice and discuss customary units like ounces and pounds with your student (in the grocery store, at home, etc.).
- Review time by asking questions such as “How many more minutes until the next hour?” or “How many hours until the next day?”.