

# Eureka Math Parent Guide

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

GRADE 5  
MODULE 2

## GRADE FOCUS

Fifth grade mathematics is about (1) developing fluency with addition and subtraction of fractions, (2) understanding multiplication and division of fractions in limited cases, (3) extending division to two-digit divisors, (4) developing fluency with whole number and decimal operations to the hundredths, and (5) developing understanding of volume.

- Module 1: Place Value and Decimal Fractions
- » **Module 2: Multi-Digit Whole Number and Decimal Fraction Operations**
- Module 3: Addition and Subtraction of Fractions
- Module 4: Multiplication and Division of Fractions and Decimal Fractions
- Module 5: Addition and Multiplication with Volume and Area
- Module 6: Problem Solving with the Coordinate Plane

LET'S CHECK IT OUT!

## MODULE 2 FOCUS

In this module, we will be building up our knowledge of first multiplication and then division. We will start with whole numbers and then move to decimals as we practice different ways to model these operations.

MORE SPECIFICALLY, CHILDREN WILL LEARN HOW TO:

- Write and interpret numerical expressions, e.g., "Add 8 and 7, then multiply by 2" is represented as  $2 \times (8 + 7)$
- Perform operations with multi-digit whole numbers and with decimals to the hundredths, e.g.,  $46 \times 72$ , 3.1
- Convert like measurement units within a given measurement system, e.g., 5 cm is 0.05 m

## 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 2:

- Topic A: Mental Strategies for Multi-Digit Whole Number Multiplication
- Topic B: The Standard Algorithm for Multi-Digit Whole Number Multiplication
- Topic C: Decimal Multi-Digit Multiplication
- Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication
- Topic E: Mental Strategies for Multi-Digit Whole Number Division
- Topic F: Partial Quotients and Multi-Digit Whole Number Division
- Topic G: Partial Quotients and Multi-Digit Decimal Division
- Topic H: Measurement Word Problems with Multi-Digit Division

## WORDS TO KNOW

- **Decimal:** A fraction whose denominator is a power of ten
- **Decimal Fraction:** A proper fraction whose denominator is a power of ten, e.g.  $2/10$ ,  $7/100$
- **Equation:** A statement that the values of two expressions are equal
- **Estimate:** Approximation of the value of a quantity or number
- **Product:** The result of a multiplication
- **Quotient:** The result of dividing one quantity by another
- **Remainder:** The number left over when one integer is divided by another
- **Unit Form:** Place value counting, e.g., 34 is stated as 3 tens 4 ones

$$3 \times 2 = 6$$

↖ product

$$6 \div 2 = 3$$

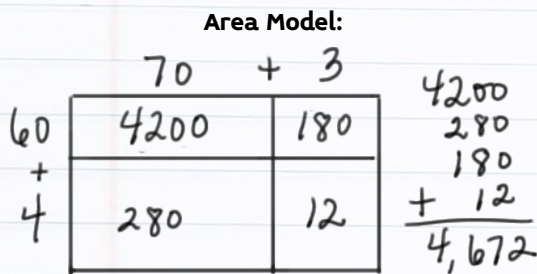
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# SAMPLE PROBLEMS

## SAMPLE 1

The area model of multiplication helps students 1) break down complicated multiplication problems in to more manageable steps, and 2) understand the concept—namely place value—behind the traditional algorithm.

Solve:  $64 \times 73$



**Traditional Algorithm in 4 steps:**

$$\begin{array}{r}
 64 \\
 \times 73 \\
 \hline
 3 \times 4 = 12 \\
 3 \times 60 = 180 \\
 70 \times 4 = 280 \\
 70 \times 60 = 4200 \\
 \hline
 4,672
 \end{array}$$

**Traditional Algorithm in 2 steps:**

$$\begin{array}{r}
 21 \\
 64 \\
 \times 73 \\
 \hline
 192 \\
 4480 \\
 \hline
 4,672
 \end{array}$$

Eventually, we want students to be able to do the 2-step algorithm quickly, but the area model helps them understand why the algorithm works.

## SAMPLE 2

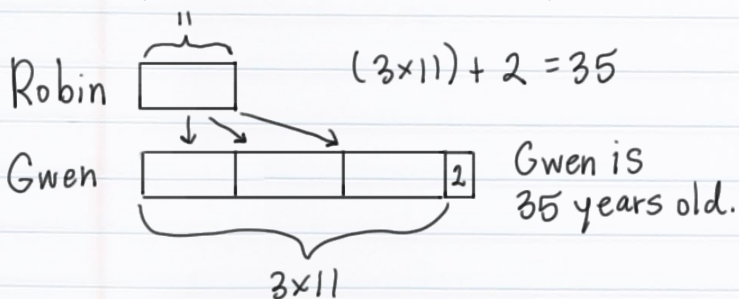
The tape diagram is a powerful model that students can use to solve various kinds of problems. In second grade, you will often see this model as an aid to addition and subtraction problems. Tape diagrams are also called "bar models" and consist of a simple bar drawing that students make and adjust to fit a word problem. They then use the drawing to discuss and solve the problem.

As students move through the grades, tape diagrams provide an essential bridge to algebra. Below is a sample word problem from Module 2 solved using a tape diagram to show the parts of the problem.



## SAMPLE 3

Robin is 11 years old. Her mother, Gwen, is 2 years more than 3 times Robin's age. How old is Gwen?



# HOW YOU CAN HELP AT HOME

- Become familiar with the area model, a different method of multiplying than you may have learned.
- Continue to review the place value system with your child.
- Discuss mathematical patterns, such as  $5 \times 9$ ,  $5 \times 90$ ,  $50 \times 90$ ,  $50 \times 900$ , etc.