Eureka Math Parent Guide

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

GRADE 3
MODULE 5

GRADE FOCUS

Third Grade mathematics is about (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes.

- Module 1: Properties of Multiplication and Division and Solving Problems with Units of 2—5 and 10
- Module 2: Place Value and Problem Solving with Units of Measure
- Module 3: Multiplication and Division with Units of 0, 1, 6–9, and Multiples of 10
- Module 4: Multiplication and Area
- » **Module 5: Fractions as Numbers on the Number Line**
- Module 6: Collecting and Displaying Data
- Module 7: Geometry and Measurement Word Problems

LET'S CHECK IT OUT!

MODULE 5 FOCUS

In this 35-day module, students extend and deepen 2nd grade practice with "equal shares" to understanding fractions as equal partitions of a whole. They formalize their knowledge as they work with area models and the number line.

MORE SPECIFICALLY, CHILDREN WILL LEARN HOW TO:

- Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
- Understand a fraction as a number on the number line; represent fractions on a number line diagram.
- Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
  - » Understand two fractions as equivalent (same value) if they are the same size, or the same point on a number line.
  - » Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.
  - » Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form of 3 = 3/1;

recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.

- » Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols ›, =, or ‹, and justify the conclusions, e.g., by using a visual fraction model.
- Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area and describe the area of each part as 1/4 of the area of the shape.

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 5:

- Topic A: Partitioning a Whole into Equal Parts
- Topic B: Unit Fractions and their Relation to the Whole
- Topic C: Comparing Unit Fractions and Specifying the Whole
- Topic D: Fractions on the Number Line
- Topic E: Equivalent Fractions
- Topic F: Comparison, Order, and Size of Fractions

WORDS TO KNOW

- **Unit fraction:** fractions with numerator of 1
- **Non-unit fraction**: fractions with numerators other than 1
- **Fractional unit**: half, third, fourth, etc.
- **Equal parts**: parts with equal measurements
- **Unit interval**: the interval from 0 to 1, measured by length
- **Equivalent fraction:** fractions that are the same size, or the same point on a number line
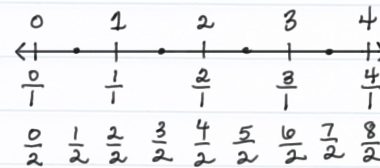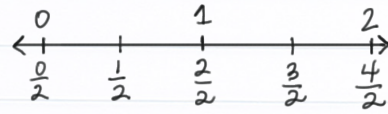- **Copies:** refers to the number of unit fractions in one whole

SAMPLE PROBLEMS

SAMPLE 1

In this activity, students specify and partition a whole into equal parts, identifying and counting unit fractions by folding fraction strips.
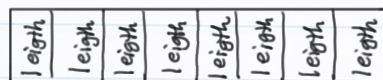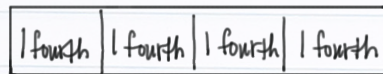
Students will learn to partition number lines into fractional parts, renaming whole numbers as fractions.

1 half	1 half

1 fourth	1 fourth	1 fourth	1 fourth

1 eighth	1 eighth	1 eighth	1 eighth	1 eighth	1 eighth	1 eighth	1 eighth

SAMPLE 2

The number bond is a pictorial representation of part/part/whole relationships showing that smaller numbers (the parts) make up larger numbers (the whole). The number bond is a key model for showing students how to both take apart (decompose) and put together (compose) numbers.

Students become familiar with number bonds in Kindergarten, and they are used repeatedly throughout the grades in various situations. In Grade 3, students compose fractional numbers using number bonds as a powerful tool to see the unit fractions that make up a whole number. They will also use number bonds to decompose whole numbers greater than 1 into fractional parts.

SAMPLE 3

Mr. Ramos wants to nail the TV cord against the wall so no one trips. He puts 7 nails equally spaced along the cord. Draw a number line representing the cord. Label it from 0 at the start of the cord to 1 at the end. Put a mark where Mr. Ramos puts each nail with a fraction.

a. Build a number bond with unit fractions to 1 whole.

b. Write the fraction of the nail that is equivalent to $1/2$ the cord.

b) $\frac{4}{8}$ is equivalent to $\frac{1}{2}$ the cord.
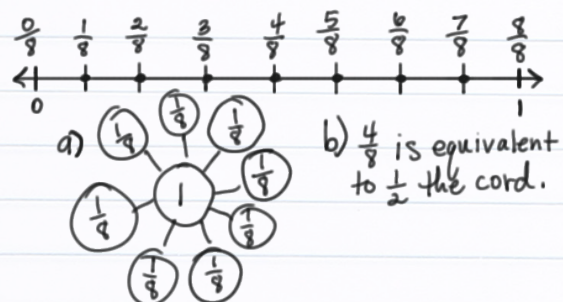
HOW YOU CAN HELP AT HOME

• Continue to review multiplication and division math facts with your student

• Help students practice partitioning household items (pieces of paper, portions of food, a pack of crayons, etc.) into equal parts.