Eureka Math Parent Guide

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

GRADE 4
MODULE 5

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 5 FOCUS

In this 41-lesson module, students explore fraction equivalence and extend this understanding to mixed numbers. They compare and represent fractions and mixed numbers using a variety of models. Toward the end of the module, they use what they know to be true about whole number operations to apply to fractions and mixed number operations.

MORE SPECIFICALLY, CHILDREN WILL LEARN HOW TO:

- Generate a number or shape pattern that follows a given rule
- Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models
- Compare two fractions with different numerators and different denominators
- Understand a fraction a/b with a > 1 as a sum of fractions 1/b, e.g. 3/5 = 1/5 + 1/5 + 1/5
- Apply and extend previous understandings of multiplication to multiply a fraction by a whole number
- Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8)

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: Decomposition and Fraction Equivalence
- Topic B: Fraction Equivalence Using Multiplication and Division
- Topic C: Fraction Comparison
- Topic D: Fraction Addition and Subtraction
- Topic E: Extending Fraction Equivalence to Fractions Greater than 1
- Topic F: Addition and Subtraction of Fractions by Decomposition
- Topic G: Repeated Addition of Fractions as Multiplication
- Topic H: Explore a Fraction Pattern

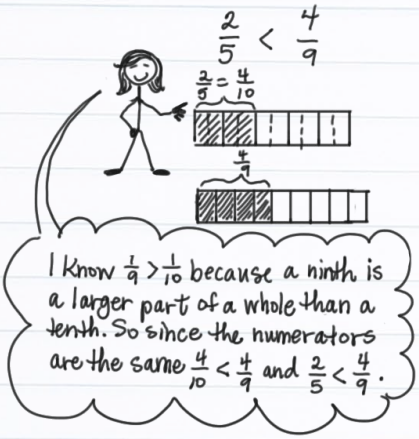
WORDS TO KNOW

- **Benchmark Fraction**: a known reference fraction by which other fractions can be measured, e.g. 0, 1/2, 1/4, 3/4, 1
- **Common denominator**: when two or more fractions have the same denominator
- **Denominator**: bottom number in a fraction
- **Line plot**: display of data on a number line, using an x or another mark to show frequency
- **Mixed number**: number made up of a whole number and a fraction
- **Numerator**: top number in a fraction

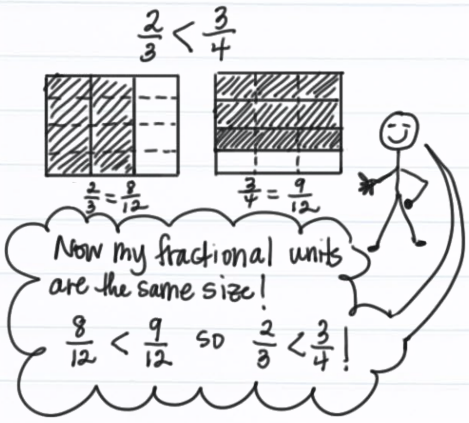
SAMPLE PROBLEMS

SAMPLE 1

Comparison Using Like Numerators

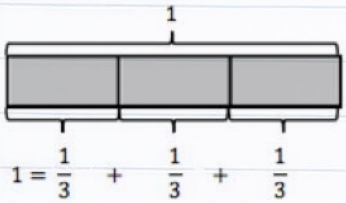


Comparison Using Like Denominators

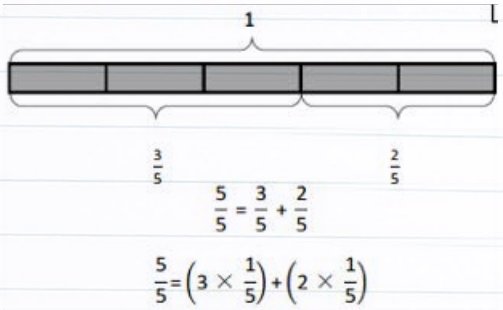


SAMPLE 2

The tape diagram below shows how to break one whole into fifths, and then how those fifths can be grouped and added together to create the whole.

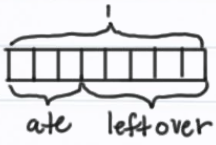


The tape diagram above shows a simple fraction addition problem in which each part of the tape is equal to one-third of the whole.



SAMPLE 3

Mr. Salazar cut his son's birthday cake into equal pieces. Mr. Salazar, Mrs. Salazar, and the birthday boy each ate 1 piece of cake. What fraction of the cake was left?



5/8 of the cake is left.

Solution 1

$1 - \frac{3}{8} = \frac{8}{8} - \frac{3}{8} = \frac{5}{8}$

Solution 2

$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + x = \frac{8}{8}$

$\frac{3}{8} + x = \frac{8}{8}$

$\frac{3}{8} + \frac{5}{8} = \frac{8}{8}$ $x = \frac{5}{8}$

HOW YOU CAN HELP AT HOME

- Continue to practice and review multiplication and division math facts — this greatly supports work with fractions!
- Look for opportunities in daily life to discuss fractional parts and divide objects into equal parts.