Eureka Math™ Tips for Parents

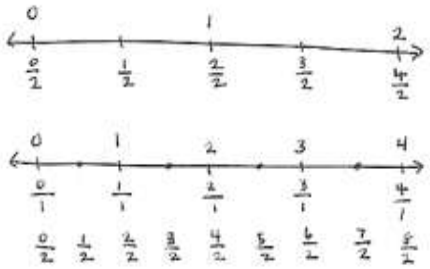
Grade 3
Module 5

Fractions as Numbers on the Number Line

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.

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.



What Came Before this Module: Students explored area as an attribute of two-dimensional figures and related it to their prior work with multiplication.

What Comes After this Module: In Module 6, students will begin work on data collection and representation. Specifically, students will generate and analyze categorical and measurement data.

Key Terms and Ideas

New Terms:

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

Terms and Symbols to Review:

Number Line

Arrays

Equal Shares

Whole

Fraction

Partition

=, <, >

+ How you can help at home:

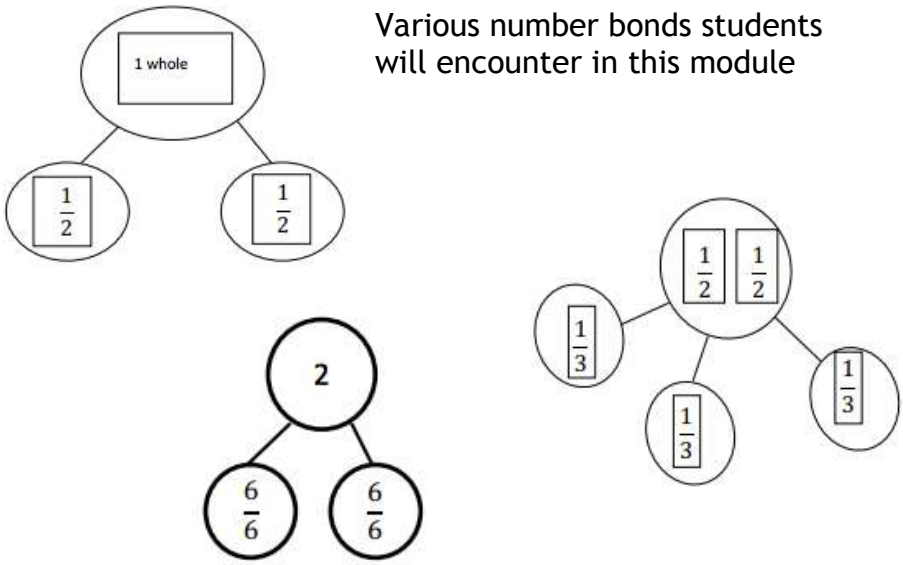
⇒ Continue to review multiplication and division math facts with your student

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

Key Common Core Standards:

- **Develop understanding of fractions as numbers**
  - Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* 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.
- **Reason with shapes and their attributes**
  - Partition shapes into parts with equal areas

Prepared by Erin Schweng, Math Coach



Various number bonds students will encounter in this module

Spotlight on Math Models:

Number Bonds

You will often see this mathematical representation in *A Story of Units*.

A Story of Units has several key mathematical "models" that will be used throughout a student's elementary years.

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.

Module 5 Sample Problem

(Example taken from Lesson 22)

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 ½ the cord.