

MATH NEWS

Grade 4, Module 5, Topic E

4th Grade Math

Module 5: Fraction Equivalence, Ordering, and Operations

Math Parent Letter

This document is created to give parents and students a better understanding of the math concepts found in Eureka Math (© 2013 Common Core, Inc.) that is also posted as the Engage New York material which is taught in the classroom. Module 5 of Eureka Math (Engage New York) covers fraction equivalence, ordering, and operations.



Focus Area Topic E:

Extending Fraction Equivalence to Fractions Greater than 1

Words to Know:

Line Plot- shows data on a number line with an **X** or other mark to show frequency.

Fraction greater than 1 - a fraction with a numerator that is greater than the denominator -- sometimes called an improper fraction

Mixed number - number made up of a whole number and a fraction less than one

Unit fraction - fractions with numerator 1

Non-unit fraction - fractions with numerators other than 1

Equivalent fractions - fractions that name the same size or amount

Here's something to think about.



Equivalent fractions are fractions that describe the same amount of something.



$$\frac{1}{2} = \frac{2}{4}$$

OBJECTIVES OF TOPIC E

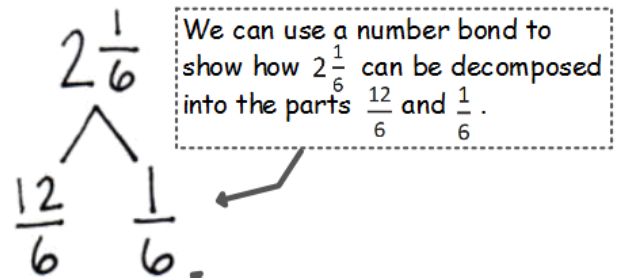
- ▶ Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models.
- ▶ Add and multiply unit fractions to build fractions greater than 1 using visual models.
- ▶ Decompose and compose fractions greater than 1 to express them in various forms.
- ▶ Compare fractions greater than 1 by reasoning using benchmark fractions and by creating common numerators or denominators.
- ▶ Solve word problems with line plots.

Focus Area Topic E:

Extending Fraction Equivalence to Fractions Greater than 1

Decomposition of Fractions Greater than 1

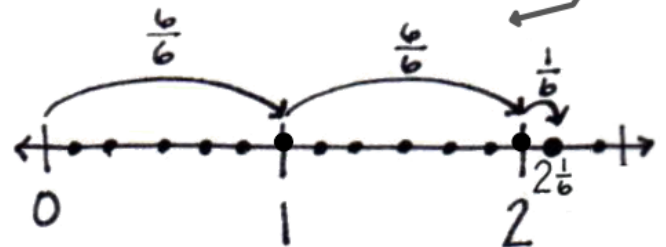
Understanding what a fraction or a mixed number is equal to will help students successfully add and subtract with fractions. In this topic, students will learn to use decomposition and visual models to add and subtract fractions less than 1 to and from whole numbers.



The number bond helps students see that $2\frac{1}{6}$ is equal to $\frac{13}{6}$.

$$2\frac{1}{6} = \frac{12}{6} + \frac{1}{6} = \frac{13}{6}$$

Students may also use a number line to reason about the equivalence of $2\frac{1}{6}$ and $\frac{13}{6}$.



$$2\frac{1}{6} = \frac{6}{6} + \frac{6}{6} + \frac{1}{6} = \frac{13}{6}$$



Focus Area – Topic E:

Extending Fraction Equivalence to Fractions Greater than 1



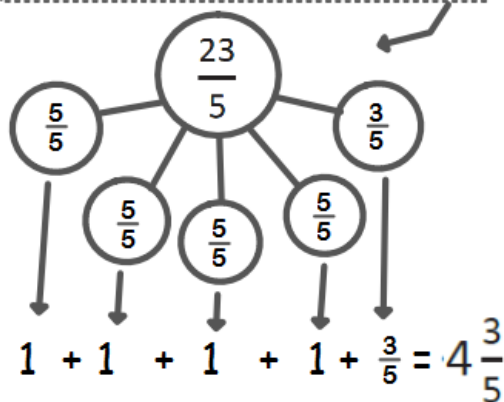
Comparing Fractions by Finding Common Denominators

Sometimes students will need to compare fractions and mixed numbers with unrelated denominators.

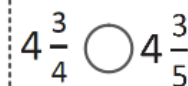
Example Problem and Answer

Compare $4\frac{3}{4}$ and $\frac{23}{5}$

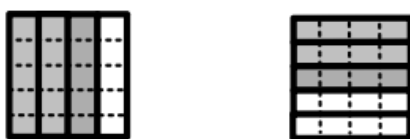
This student first renamed $\frac{23}{5}$ as the mixed number $4\frac{3}{5}$.



After converting $\frac{23}{5}$ to a mixed number, the student realized all they needed to compare was the fractional parts since the whole numbers were the same.



In topic C, students learned to find common denominators using area models.



$$\frac{3}{4} = \frac{15}{20} \qquad \frac{3}{5} = \frac{12}{20}$$

$$\frac{15}{20} > \frac{12}{20}$$

$$4\frac{3}{4} > 4\frac{3}{5}$$

Module 5: Fraction Equivalence, Ordering, and Operations

Data and Line Plots

In topic E, students will create line plots to display a given dataset that includes fraction and mixed number values. To do this, they apply their skill in comparing mixed numbers.

Example Problem and Answer

Problem

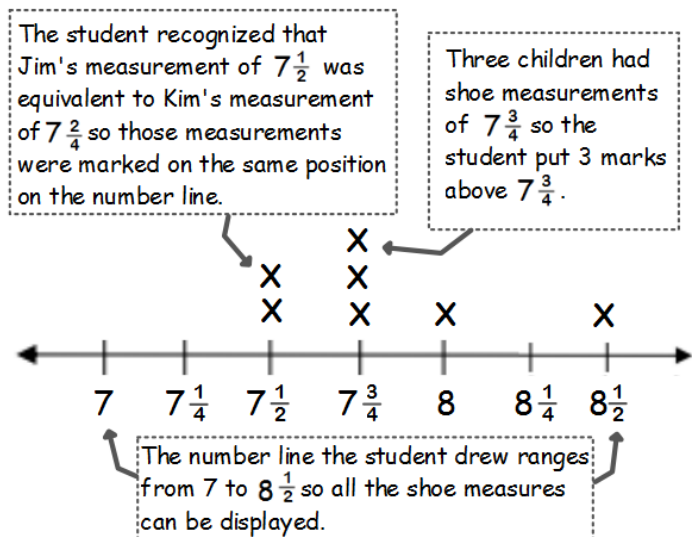
A group of children measured the lengths of their shoes. The results are shown in the table.

Child	Length of Shoe (in inches)
Jim	$7\frac{1}{2}$
Sue	$7\frac{3}{4}$
Kim	$7\frac{2}{4}$
Ted	$8\frac{1}{2}$
Jan	$7\frac{3}{4}$
Max	8
Sam	$7\frac{3}{4}$

Make a line plot to display the data.

Answer

The student's work below shows data on a number line with an X representing each child's shoe measure. So, for each shoe length, there is an X above the measure on number line that matches it. Seven children measured their shoes so there are seven X marks on the line plot.



The number line the student drew ranges from 7 to $8\frac{1}{2}$ so all the shoe measures can be displayed.