Eureka Math Parent Tips

Fifth Grade Module 3

Addition and Subtraction of Fractions

Students’ understanding of addition and subtraction of fractions extends from earlier work with fraction equivalence and decimals. This module marks a significant shift away from the elementary grades’ centrality of base ten units to the study and use of the full set of fractional units from Grade 5 forward, especially as applied to algebra.

Louisiana Standards:
- Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
- Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem.
Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

Words to Know:
- Benchmark Fraction
- Like Denominator
- Unlike Denominator
- Equivalent Fraction
- Hundredth
- Tenth
- Numerator
- Denominator
- Whole Unit

Ways to Show Equivalent Fractions

Area Model

Number Line

Addition and Subtraction of Fractions with Unlike Denominators

Step 1: Ask yourself can the fraction one third be added to the fraction one fourth? No, because the units are not the same. We need to find like units.

Step 2: Begin the process of finding like units (denominators) by drawing two rectangular models. Each rectangular model will represent a different unit fraction shown above.

Divide the rectangular model vertically into three equal units. Shade in one unit to represent one out of three.

Divide the rectangular model horizontally into four equal units. Shade in one unit to represent one out of four.

Step 3: Have both rectangular models show the same size units.

Divide the rectangular model showing \( \frac{1}{3} \) into fourths using three horizontal lines.

Divide the rectangular model showing \( \frac{1}{4} \) into thirds using two vertical lines.

Each rectangular model now has 12 units.

Step 4: Rename each fraction showing like units (denominators).

\[ \frac{1}{3} = \frac{4}{12} \quad \text{and} \quad \frac{1}{4} = \frac{3}{12} \]

are both equivalent fractions

Now, we can add the units.

\[ \frac{4}{12} + \frac{3}{12} = \frac{7}{12} \]
The goal of *Eureka Math* is to produce students who are not merely literate, but fluent, in mathematics.
A community center has three swimming pools. The water level of each pool is measured at 8:00 p.m. each night. Two of the measurements from Saturday night are shown.

- The water level in the first pool is \( \frac{5}{12} \) feet deep.
- The water level in the second pool is \( \frac{3}{8} \) feet deep.

**Part A**

What is the difference in depth between the water levels of the second pool and the first pool, in feet?

**Part B**

The water level in the third pool is \( 2 \frac{3}{4} \) feet deeper than the second pool. What is the total depth of the water level in the third pool, in feet?

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**How you can help at home…**

- Create or pick numbers to make fractions. Add, subtract, simplify, create equivalent fractions, or draw a model of the fraction you have.
- Find examples of fractions around the house or neighborhood. Add, subtract, multiply, divide or simplify the fractions that you find.
- Create numbers to use in fractions. Draw these fractions as parts of a whole or set.
- Use measuring cups when baking or cooking.
- Draw different shapes. Divide them into different fractions.