Fifth Grade: Module 3

DUVAL Math Parent Tips

DUVAL COUNTY PUBLIC SCHOOLS

Addition and Subtraction of Fractions

In this Module, students build on earlier work with equivalent fractions and decimals to add and subtract fractions with unlike denominators. They will move from concrete examples (paper strips and number lines) to more abstract skills (writing their own math sentences). By the end of this module, students will fluently work through multi-step word problems that contextualize their learning.

What Came Before this Module: Students worked to build knowledge of multiplication and division of whole numbers and decimals.

What Comes After this Module: In Module 4, students will extend their understanding of fraction operations to multiplication and division of both fractions and decimal fractions.

Fifth Grade, Module 3

Special points of interest:

- ✓ Words to Know
- ✓ Sample Problems: Adding and Subtracting Fractions
- ✓ Sample Problems: Making Like Units
- ✓ Standards for Mathematical Practice
- ✓ Want to help with homework?

Words to Know

Denominator: shows the fractional unit, e.g. the fifths in 3 fifths.

Numerator: shows how many fractional units there are, e.g. the 3 in the 3 fifths.

Benchmark Fraction: a very familiar fraction that can be referred to in comparison questions, e.g.– 1/2 is a benchmark fraction for comparing 1/3 and 3/5.

Like Denominators: fractions with the same denominator, e.g. 1/8 and 3/8.

Unlike Denominators: fractions with different denominators, e.g. 1/8 and 1/7.

Equivalent Fraction: fractions that have the same value, though they may look different, e.g. 3/ 5 and 6/10.

Fraction Greater than or equal to 1: eg. 7/3 or 2 1/3.

Questions?

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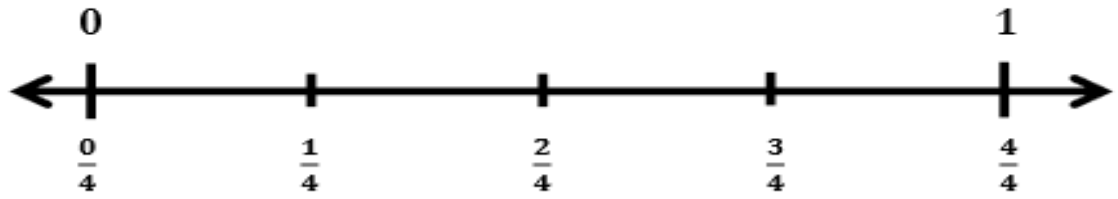
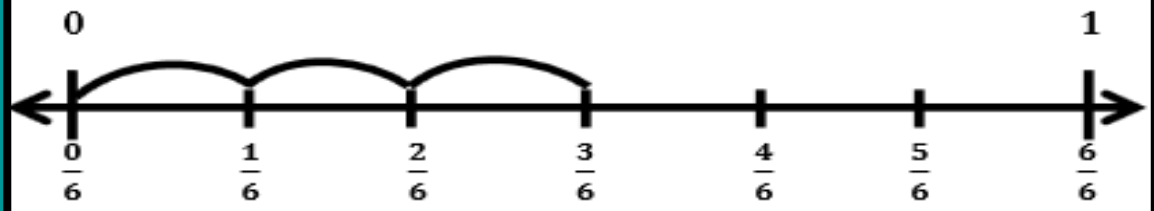
Sample Problems

Mark 0 and 1 above the number line and $\frac{0}{4}, \frac{1}{4}, \frac{2}{4}, \frac{3}{4}$ and $\frac{4}{4}$ below the number line.



Show the expression on a number line then solve.

$$\frac{1}{6} + \frac{1}{6} + \frac{1}{6}$$



$$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{3}{6}$$

$$3 \times \frac{1}{6} = \frac{3}{6}$$

Express the fraction as the sum of two or three equal fractional parts. Rewrite each as a multiplication equation.

$$\frac{24}{5} = \frac{12}{5} + \frac{12}{5} \qquad \frac{24}{5} = 2 \times \frac{12}{5}$$

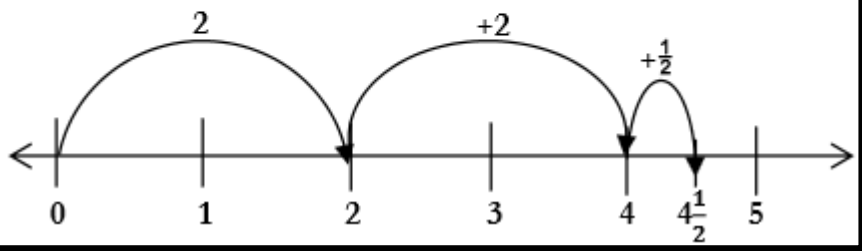
OR

$$\frac{24}{5} = \frac{8}{5} + \frac{8}{5} + \frac{8}{5} \qquad \frac{24}{5} = 3 \times \frac{8}{5}$$

Sample Problems

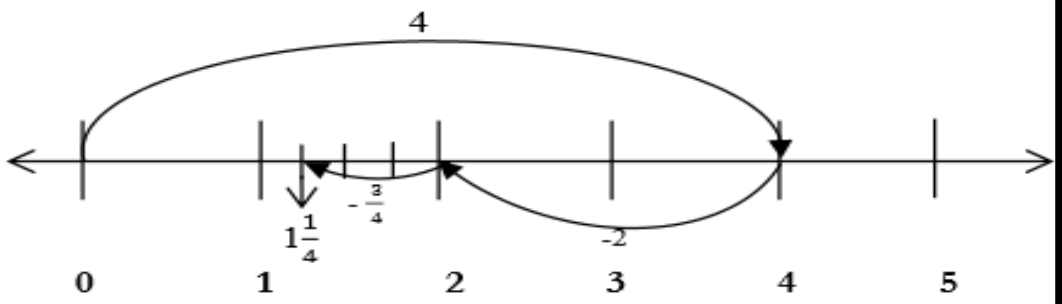
Problem 1: $2 + 2\frac{1}{2} = 4\frac{1}{2}$

Step 1: Add the whole numbers.
Step 2: Add the fraction.



Problem 2: $4 - 2\frac{3}{4} = 1\frac{1}{4}$

Step 1: Subtract the whole numbers.
Step 2: Subtract the fraction.



Problem 3: $\frac{3}{4} - \frac{1}{5} = \left(\frac{3x5}{4x5}\right) + \left(\frac{1x4}{5x4}\right)$

$\frac{15}{20} + \frac{4}{20} = \frac{19}{20}$

Step 1: Make like units numerically.
Step 2: Add fractions.

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Standards for Mathematical Practice

Mathematical Practices Addressed in this Module:

MP. 5 Use appropriate tools strategically. Mathematically proficient students consider the available tools when solving a mathematical problem.

MP. 6 Attend to precision. Mathematically proficient students try to communicate precisely to others.

MP.7 Look for and make use of structure. Students use knowledge of place value and mixed units to find patterns when converting from a larger unit to a smaller unit.

MP.4 Model with mathematics. Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.

MP.2 Reason abstractly and quantitatively. Mathematically proficient students make sense of quantities and their relationships in problem situations.

MP.3 Construct viable arguments and critique the reasoning of others. Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments.

Interested in learning more?

We have developed 15 minute overviews for Grades 3-5:

http://www.duvalschools.org/Page/17706

Elementary Mathematics: Parent Partnerships for Success Grades 3-5