

## Implementing Common Core Standards

2<sup>nd</sup> grade:

2. G.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words *halves*, *thirds*, *half of*, *a third of*, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

My students will learn about fractions as being part of a whole. They will write and draw to show understanding of fractional parts and use math vocabulary to describe parts of a whole.

3<sup>rd</sup> grade:

3 NF Develop understanding of fractions as numbers.

1. 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  $1/b$ .  
2. Understand a fraction as a number on the number line; represent fractions on a number line diagram. a. Represent a fraction  $1/b$  on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into  $b$  equal parts. Recognize that each part has size  $1/b$  and that the endpoint of the part based at 0 locates the number  $1/b$  on the number line. b. Represent a fraction  $a/b$  on a number line diagram by marking off  $a$  lengths  $1/b$  from 0. Recognize that the resulting interval has size  $b$  and that its endpoint locates the number  $a/b$  on the number line. 3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. b. Recognize and generate simple equivalent fractions, e.g.,  $1/2 = 2/4$ ,  $4/6 = 2/3$ . Explain why the fractions are equivalent, e.g., by using a visual fraction model. c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual fraction model.

My students will be able to represent fractions on a number line in addition to in the form of models and in writing. They will also learn about the equivalence of fractions and will be able to compare and order fractions. They will understand vocabulary related to fractions and make tangible products to reflect their understanding of fractions.

4<sup>th</sup> grade:

Extend understanding of fraction equivalence and ordering.

1. Explain why a fraction  $a/b$  is equivalent to a fraction  $(n \times a)/(n \times b)$  by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. 2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as  $1/2$ . Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual fraction model. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. 3. Understand a fraction  $a/b$  with  $a > 1$  as a sum of fractions  $1/b$ . a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

My students will extend their knowledge of fractions and will be able to create representations of equivalent fractions. They will be able to explain their thinking about comparing fractions with different numerators and denominators using models, music, learning activities and class discussions. They will also be able to add and subtract fractions with like and unlike denominators. They will understand how to convert improper fractions to mixed numbers and the reverse. They will use their strong knowledge of fractions to solve multi-step word problems involving fractions.