Grade 5	Grade 4	Grade 3	Grades 1 & 2

Coherence

within and across the Grade

- Add and Subtract Fractions with different denominators
- Solve word problems to add/sub fractions using visual models, equations, or benchmark fractions
- Multiply and Divide Fractions
  - Division as equal sharing.
  - Multiply a fraction times a whole number understanding a fraction is a multiple of it's unit fraction.
  - Develop formula for finding the product of two fractions (a/b X c/d = ac/bd) expressed using examples or number lines.
- Division of a whole number by a whole number 5 ÷ 3 is the same as multiplying a whole number by a unit fraction 1/3 X 5
- Division of a unit fraction by a whole number. (1/6 ÷ 3 = 1/ 6 x 3= 1/18)
- Solve word problems – attend to underlying unit quantities
- Multiplication as Scaling (resizing)
  - See products such as 5 x 3 or ½ x 3 as expressions that can be interpreted in terms of a quantity, and as a scaling factor (5 or ½)
  - 5 x 3 = 15 can also be said that 5 x 3 is 5 times as big as 3 without evaluating the product, ½ x 3 as half the size of 3.

- Begin formal understanding of fractions
- Introduce unit fractions.
- Understand the importance of specifying the whole
- Explain what is meant by equal parts
- Know other fractions can be built by making copies of the unit fraction ($\frac{1}{b}$) to make other fractions ($\frac{a}{b}$)
- Introduced to representing fractions on a number line
- Recognize and generate simple equivalent fractions and explain why they are equivalent using visual models.
- Recognize whole numbers as fractions 2= ($\frac{2}{1}=\frac{4}{2}=\frac{6}{3}=\frac{8}{4}$)
- Recognize fractions that are equivalent to whole numbers to express fractions as whole numbers. (1= $\frac{2}{2}=\frac{3}{3}=\frac{4}{4}$)
- Compare Fractions with the same unit fraction
- Compare fractions using location of the points on the number line.

- Are informally introduced to fractions
- Partition shapes into equal shares
- Begin to understand that when a whole shape is decomposed into more equal shares, the size of the share is smaller
- Begin to understand the relationship of equal parts to whole
- Begin to develop the understanding that equal pieces need not have same shape
- Use vocabulary- halves, thirds, fourths, half of, third of, etc. one of four, one of two, etc.

- Use number lines and area models to reason about equivalence.
- Explain why two fractions are equivalent using the multiplication principle using models.
- Use an understanding of equivalent fractions to compare fractions with different numerators and denominators.
- Use benchmarks ½,
- Add and Subtract Fractions with like denominators
- Add and subtract fractions using Use the concept of unit fractions to decompose a fraction in multiple ways ($\frac{5}{3}=\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}$) or $\frac{5}{3}=\frac{2}{3}+\frac{2}{3}+\frac{1}{3}$ etc).
- Add and subtract mixed numbers using a variety of methods.
- Solve problems for addition and subtraction of fractions
- Multiply Fractions
  - by a whole number
  - using the concept of unit fractions and understanding of multiplication of whole numbers, (5 x 1/3 = 1/3+ 1/3 + 1/3 + 1/3+ 1/3).
  - See a fraction as the product of whole number and fraction 7X 1/5= 7/5
  - Solve word problems involving fraction x whole number