K-12 Mathematics Fraction Progression

Standards/Cluster	Math	Other Content Areas
1st Grade **1.G.3:** Partition circles and rectangles into two and four equal shares	• Understand that as a shape is broken into more parts, decomposing the pieces from halves to fourths, the parts get smaller	• Partition shapes into $\frac{1}{2}$ s and $\frac{1}{4}$ s • Use the vocabulary of halves, quarters, and fourths
2nd Grade **2.G.3:** Partition circles and rectangles into two, three, or four equal shares	• Recognize that when a shape is cut into four equal pieces, each piece will equal one fourth of its original whole • The whole is described as four fourth • Understand that equal shares can be different shapes within the same whole	• Partition shapes into $\frac{1}{3}$ s • Use the vocabulary of thirds
3rd Grade **3.NF.A:** Develop understanding of fractions as numbers	• Describe the meaning of the denominator and numerator • Understand that the larger a denominator is, the smaller the pieces will be • Generate equivalent fractions • Understand that fractions can be greater than 1	• Write fractions as a symbol • Compare fractions with the same numerator or denominator • Work with unit fractions • Fractions on a number line

4th Grade
4.NF: Number & Operations-Fractions
	• Compare fractions using a variety of representations
	• Compose and decompose fractions into unit fractions
	• Use manipulatives and models to solve a variety of fraction problems involving:
	    o Addition & subtraction
	    o Multiplication of a fraction and a whole number
	• Use decimal notation for fractions with denominators of 10 or 100
		• Find & recognize equivalent fractions
		• Add and subtract fractions with like denominators

5th Grade **5.NF:** Number & Operations-Fractions	• Understand the need for and find common denominators when adding and subtracting fractions • Determine a procedure for multiplying fractions • Solve division problems where the remainder is interpreted as a fraction • Find the area of rectangles with fractional side lengths • Understand multiplication as scaling • Divide unit fractions and whole numbers	• Add, subtract, & multiply fractions • Understand and interpret fractional remainders in division

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6th Grade	**6.NS.A:** Apply and extend previous understanding of multiplication and division to divide fractions by fractions	• Model division of fractions with manipulatives, visual diagrams, and word problems • Interpret what the quotient represents in mathematical and real-world problems	• Multiply or divide fractions in context (you are making $\frac{1}{2}$ recipe that calls for $2\frac{1}{4}$ cups, or 3 recipes that call for $\frac{3}{4}$ *tsp*)
7th Grade	**7.NS.A:** Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	• Add & Subtract rational numbers • Multiply and Divide rational numbers • Use $p \div q$ and $\frac{p}{q}$ notations interchangeably • Simplify complex fractions by recognizing them as division	• Use all four operations with fractions • Convert fractions to decimals • Recognize fraction forms of common decimals
8th Grade	**8.NS.1:** Understand informally that every number has a decimal expansion	• Convert decimals expansions into equivalent fractions using an algorithm • Use strategies other than conversions for some decimal expansions; for example repeating patterns	• Recall common fraction conversions to decimals and percents
High School	**N.RN.A:** Extend the properties of exponents to rational exponents	• Calculate interest based on various compounding periods • Convert between radical and exponential forms	• Explain the meaning of rational exponents within finance • Recognize rational exponents to solve equations involving squares or cubes

- The standards identified are representative of the focus at each grade level to demonstrate the developmental nature of our Learning Standards
- The math skills listed are applicable within the context of the identified standards but do not offer a comprehensive list of skills they describe
- The other content areas are examples to provide possible uses of the math skills within the listed standards