

<b>Grade: 3</b> <b>Subject:</b> Mathematics	<b>Unit 11: Exploring Fractions, Decimals, Probability, and Division with Remainders</b>
<b>Big Idea/Rationale</b>	<ul style="list-style-type: none"> <li>• Introduces the meaning of fraction and basic computation involving fractions. Hands-on activities help students visualize what it means to add, subtract, and compare fractions with the same denominator or different denominators. Students apply their understanding of fractions to write the probability of simple events. To connect fractions with division, the final section of this unit introduces students to division with remainders, improper fractions, and mixed numbers.</li> </ul>
<b>Enduring Understanding (Mastery Objective)</b>	<p>Students will understand that:</p> <ul style="list-style-type: none"> <li>• A region can be divided into equal-sized parts in different ways. Equal size parts of a region have the same area but not necessarily the same shape.</li> <li>• A fraction describes the division of a whole (region, set, segment) into equal parts. The bottom number of a fraction tells how many equal parts are indicated.</li> <li>• The same fractional amount can be represented by an infinite set of different but equivalent fractions.</li> <li>• To compare two fractions, the whole must be the same size. The fraction which represents a greater part of the whole is the greater fraction.</li> <li>• To add or subtract with like denominators add or subtract the numerators and write the sum or the difference over the common denominator. To add or subtract with unlike denominators, change to an equivalent fraction with like denominators.</li> <li>• An improper fraction is one in which the numerator is greater than the denominator.</li> <li>• A mixed number is one in which there is a combination of a whole number and a fraction.</li> <li>• Decimals show fractional parts of a whole.</li> </ul>
<b>Essential Questions (Instructional Objective)</b>	<ul style="list-style-type: none"> <li>• How can you divide a region into equal parts?</li> <li>• How can you write a fraction to name part of a whole?</li> <li>• How can you write a fraction to name part of a set?</li> <li>• How can you use models to compare fractions?</li> <li>• How can you add and subtract fractions?</li> <li>• What is an improper fraction?</li> <li>• What is a mixed number?</li> <li>• How can you write a decimal and a fraction for the same part of a whole?</li> </ul>
<b>Content (Subject Matter)</b>	<ul style="list-style-type: none"> <li>• Use fraction strips to explore unit fractions</li> <li>• Write non-unit fractions as sums of unit fractions.</li> <li>• Represent fractions in a variety of ways.</li> <li>• Use fractions to represent parts of sets.</li> </ul>

- Find a unit fraction of an amount.
- Make “as many as” comparison statements, and represent them with multiplication equations.
- Make comparison statements about information in a bar graph.
- Solve word problems involving comparisons and multiplication.
- Make “as many as” comparison statements.
- Solve word problems involving multiplications.
- Discover a method for multiplying a whole number by any fraction.
- Interpret circle graphs.
- Identify fractions on a circle graph.
- Understand the meaning of probability, how to determine the probability of an event, and predict future events.
- Understand how probability relates to fractions.
- Informally explore equivalent fractions.
- Make discoveries about equivalent fractions while playing a game.
- Find equivalent fractions.
- Find equivalent fractions by multiplying.
- Find equivalent fractions by dividing.
- Add fractions with unlike and like denominators.
- Understand the term rename as it relates to fractions.
- Recognize common error in adding fractions.
- Compare and subtract like fractions.
- Compare and subtract unlike fractions by finding equivalent fractions with a common denominator.
- Solve word problems that involve comparing, adding, and subtraction fractions.
- Locate points on a number line.
- Add and subtract fractions on a number line.
- Compare fractions on a number line.
- Explore related fractions and decimals.
- Understand improper fractions and mixed numbers.
- Apply the terms improper fractions and mixed number.
- Rename improper fractions as mixed numbers and mixed numbers as improper fractions.
- Explore division with remainders.
- Understand and apply the term remainder.
- Write answers as a number plus a remainder or as mixed numbers.
- Solve word problems involving division with remainders.
- Practice dividing with remainders.
- Solve word problems involving division with remainders.
- Solve a variety of problems using mathematical concepts and skills. Use the mathematical processes of problem solving, connections, reasoning and proof, communications, and representation.

<b>Skills/ Benchmarks (CCSS Standards)</b>	<ul style="list-style-type: none"> <li>• <b>3.NF.A.1:</b> Understand a fraction <math>1/b</math> as the quantity formed by 1 part when a whole is partitioned into <math>b</math> equal parts; understand a fraction <math>a/b</math> as the quantity formed by <math>a</math> parts of size <math>1/b</math>.</li> <li>• <b>3.NF.A.2.A:</b> Represent a fraction <math>1/b</math> on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into <math>b</math> equal parts. Recognize that each part has size <math>1/b</math> and that the endpoint of the part based at 0 locates the number <math>1/b</math> on the number line.</li> <li>• <b>3.NF.A.2.B:</b> Represent a fraction <math>a/b</math> on a number line diagram by marking off a lengths <math>1/b</math> from 0. Recognize that the resulting interval has size <math>a/b</math> and that its endpoint locates the number <math>a/b</math> on the number line.</li> <li>• <b>3.NF.A.3.A:</b> Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.</li> <li>• <b>3.NF.A.3.B:</b> Recognize and generate simple equivalent fractions, e.g., <math>1/2 = 2/4</math>, <math>4/6 = 2/3</math>. Explain why the fractions are equivalent, e.g., by using a visual fraction model.</li> <li>• <b>3.NF.A.3.C:</b> Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.</li> <li>• <b>3.NF.A.3.D:</b> 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 <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual fraction model.</li> <li>• <b>3.MD.B.3:</b> Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.</li> <li>• <b>2.G.A.2:</b> Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.</li> <li>• <b>Mathematical Practices</b></li> </ul>
<b>Materials and Resources</b>	<ul style="list-style-type: none"> <li>• Math Expressions, Student Journals, Manipulatives, Math themed literature, BrainPop, IXL Mathematics</li> </ul>