

## Core Content

<b>Cluster Title: Develop understanding of fractions as numbers.</b>
<b>Standard 1:</b> 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 $1/b$ .
<b>MASTERY Patterns of Reasoning:</b>
<b>Conceptual:</b> Students will understand that fractional parts must be equal-sized pieces of the same whole. Students will understand how many equal parts make a whole. Students will understand that as the number of equal pieces in the whole increases, the size of the fractional pieces decreases. Students will understand that the numerator of a fraction is the number of equal parts being considered, e.g., $3/5$ is three $1/5$ units. Students will understand that the denominator of a fraction is the number of equal parts that make up the whole. Students will know the characteristics of a unit fraction (a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into $b$ equal parts.)
<b>Procedural:</b> Students can identify the numerator as the number of equal parts being considered. Students can identify the denominator as the number of equal parts that make up the whole. Students can read and write a fraction. Students can divide a region or set of objects into fractional parts. Students can explain fractions verbally and/or in writing.
<b>Representational:</b> Students can represent fractions using circles, squares, rectangles, fraction bars, number lines, and sets of objects. Students can represent fractions as fair sharing and parts of a whole.

Code: 3NF1

(Note: Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)

### Supports for Teachers

<b>Critical Background Knowledge</b>	
<p><b>Conceptual:</b>                      Students will understand equal and fair shares.                      Students will understand that a region is a geometric figure that can be divided into equal parts.                      Students will understand that sets of objects can be divided into equal parts.                      Students will recognize that equal shares of identical wholes do not have to have the same shape or size.</p> <p><b>Procedural:</b>                      Students can make equal parts.                      Students can use the additive nature of area.                      Students can partition a set of objects or a region into equal groups/pieces</p> <p><b>Representational:</b>                      Students can model equal groups using manipulatives.</p>	
<b>Academic Vocabulary and Notation</b>	
halves ( $1/2$ ), thirds ( $1/3$ ), fourths ( $1/4$ ), sixths ( $1/6$ ), eighths ( $1/8$ ), fraction, numerator, denominator, equal parts	
<b>Instructional Strategies Used</b>	<b>Resources Used</b>
Use models, manipulatives, and fraction sets to represent numerator and denominator.	McMillian, Bruce. <i>Eating Fractions</i> . Scholastic Press, 1991.
Develop understanding of fair shares by sharing objects where each person gets the same amount.	Murphy, Stuart. <i>Give Me Half (MathStart 2)</i> . HarperCollins, 1996.
Partition circles, squares, or rectangles into equal parts.	Adler, David. <i>Fraction Fun</i> . Holiday House, 1997.
Partition a set of objects into equal groups.	Pallota, Jerry. <i>Hershey's Milk Chocolate Bar Fractions Book</i> . Cartwheel Books, 1999.

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<p>Fold paper to create a variety of fractional models.</p> <p>Use time as a reference for real-world application of common fractions.</p> <p>Use pattern blocks, geoboards, fraction sets in various shapes, analog clocks, and various objects (e.g., cars, people, shells, buttons, etc.).</p>	<p>Penner, Lucille R. <i>Clean Sweep Campers</i>. Live Oak Media, 2008.</p> <p><a href="http://www.amathsdictionaryforkids.com">http://www.amathsdictionaryforkids.com</a></p> <p>Fraction bar, fraction pieces, naming fractions at: <a href="http://www.nlvm.usu.edu/en/nav/grade_g_2.html">http://www.nlvm.usu.edu/en/nav/grade_g_2.html</a></p>
<b>Assessment Tasks Used</b>	
<p><b>Skill-Based Task:</b></p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Write the fraction for a visual model.</p> <div style="display: flex; justify-content: center; align-items: center;">  </div> <p>What fraction of the shapes are rectangles? Make a visual model to show a fraction.</p>	<p><b>Problem Task:</b></p> <p>Paul made a garden in the shape of a rectangle and divided it into 5 equal parts. He planted carrots on <math>\frac{3}{5}</math> of the garden. Draw a picture of what Paul's garden might have looked like. Explain your thinking.</p> <p>Pam had 30 cookies. She needed to take <math>\frac{1}{3}</math> of them to a party. How many cookies did she take to the party? Show how you know in numbers, pictures, and words.</p>

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