

## Table of Contents

### Grade 4 Math

<b>Math: Measurement and Data</b>	<b>1</b>
Essential Skill: Know relative sizes of measurement units within one system of units.	2
Essential Skill: Apply the area formula for polygons in real world and mathematical problems.	2
Essential Skill: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.	3
<b>Numbers and Operations in Base Ten</b>	<b>3</b>
Essential Skill: Use place value understanding to round multi-digit whole numbers to any place.	4
<b>Numbers and Operations: Fractions</b>	<b>4</b>
Essential Skill: Recognize and generate equivalent fractions.	4
Essential Skill: Convert improper fractions to mixed numbers.	5
Essential Skill: Rewrite fractions into decimals; rewrite decimals into fractions.	5
Essential Skill: Read, write, and compare decimals.	6
<b>Operations and Algebraic Thinking</b>	<b>6</b>
Essential Skill: Solve multiplication problems in real world or mathematical problems.	6
Essential Skill: Solve word problems using all four operations.	7
Essential Skill: Investigate factoring.	7

## Math: Measurement and Data

**Essential Skill: Know relative sizes of measurement units within one system of units.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b> Show students a meter stick. Ask: <i>What units does this measure? How are these units related?</i></p>	<p><b><a href="#">Metric Units Movie</a></b> Learn how easy it is to convert centimeters to meters or kilograms to milligrams.</p>	<p><b><a href="#">Create a Video Tutorial</a></b> Make a movie that teaches viewers how to convert between metric units.</p>	<p><b><a href="#">Challenge</a></b> Use critical thinking skills to show what you know about Metric Units.</p>	<p><b><a href="#">Metric vs. Customary</a></b></p>

**Essential Skill: Apply the area formula for polygons in real world and mathematical problems.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b><a href="#">Pre-Assessment</a></b> What formula would you use to solve for the area of a rectangle?</p>	<p><b><a href="#">Area of Polygons Movie</a></b> Discover how to find the area of polygons like triangles, trapezoids,</p>	<p><b><a href="#">Design a How-To</a></b> Make a movie that teaches viewers how to calculate the area of a triangle.</p>	<p><b><a href="#">Quiz</a></b> What did you learn about finding the area of polygons?</p>	<p><b><a href="#">Polygons</a></b></p>

---

	and parallelograms.			
--	---------------------	--	--	--

**Essential Skill: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><u><a href="#">Pre-Assessment</a></u> What is an acute angle?</p>	<p><u><a href="#">Angles Movie</a></u> Learn the difference between acute, obtuse, and right angles.</p>	<p><u><a href="#">Make a Concept Map</a></u> Find angles in objects around you—at school, at home, at the playground. Classify the angles as acute, obtuse, right, or straight.</p>	<p><u><a href="#">Quiz</a></u> What did you learn about angles?</p>	<p><u><a href="#">Geometry</a></u></p>

## Numbers and Operations in Base Ten

**Essential Skill: Use place value understanding to round multi-digit whole numbers to any place.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b>            Show an item, like a box of cereal, with the price.  <i>Ask: How can rounding be helpful when we're shopping?</i></p>	<p><a href="#"><u>Rounding Movie</u></a>            Discover how to use place values to estimate and round numbers.</p>	<p><a href="#"><u>Make-a-Movie</u></a>            Make a BrainPOP-style movie in which Moby describes how rounding can be helpful in real life.</p>	<p><a href="#"><u>Quiz</u></a>            What did you learn about rounding?</p>	<p><a href="#"><u>Decimals</u></a></p>

## Numbers and Operations: Fractions

### Essential Skill: Recognize and generate equivalent fractions.

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b><u>Pre-Assessment</u></b> How is a fraction related to its simplified form?</p>	<p><b><u>Simplifying Fractions Movie</u></b> Discover how simplifying and reducing can cut large and clunky fractions down to size.</p>	<p><b><u>Make a Concept Map</u></b> Put <math>\frac{4}{24}</math> in the center of a map and identify all of its equivalent fractions. Include a statement of how you calculated each equivalent fraction.</p>	<p><b><u>Quiz</u></b> What did you learn about equivalent fractions?</p>	<p><b><u>Adding and Subtracting Fractions</u></b></p>

### Essential Skill: Convert improper fractions to mixed numbers.

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b><u>Pre-Assessment</u></b> What is the easiest way to convert a mixed number to a fraction?</p>	<p><b><u>Mixed Numbers Movie</u></b> Learn how to convert fractions into mixed numbers.</p>	<p><b><u>Make a Concept Map</u></b> Sequence the process of converting a mixed number into an improper fraction.</p>	<p><b><u>Quiz</u></b> What did you learn about equivalent fractions?</p>	<p><b><u>Adding and Subtracting Fractions</u></b></p>

**Essential Skill: Rewrite fractions into decimals; rewrite decimals into fractions.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b><u>Pre-Assessment</u></b> Compare a fraction, decimal, and percent.</p>	<p><b><u>Converting Fractions to Decimals Movie</u></b> Learn how to convert fractions into decimals, and back again.</p>	<p><b><u>Make a Concept Map</u></b> Show the steps to converting fractions into decimals, and decimals into fractions.</p>	<p><b><u>Quiz</u></b> What did you learn about converting fractions into decimals?</p>	<p><b><u>Multiplying and Dividing Fractions</u></b></p>

**Essential Skill: Read, write, and compare decimals.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b> Ask: <i>Why do we use decimals?</i></p>	<p><b><u>Decimals Movie</u></b> Learn about three kinds of decimals, including a very special type that goes on forever without repeating.</p>	<p><b><u>Primary Source Activity</u></b> Examine the baseball card, and use the information to answer the accompanying questions.</p>	<p><b><u>Challenge</u></b> Use critical thinking skills to show what you know about decimals.</p>	<p><b><u>Rounding</u></b></p>

## Operations and Algebraic Thinking

**Essential Skill: Solve multiplication problems in real world or mathematical problems.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b>  <i>Say: Describe a time you use multiplication in your daily life.</i></p>	<p><a href="#">Multiplication Movie</a>            Discover the basics of solving multiplication problems!</p>	<p><a href="#">Make-a-Movie</a>            Tell a real-life story of how you used multiplication to solve a problem.</p>	<p><a href="#">Quiz</a>            What did you learn about multiplication?</p>	<p><a href="#">Distributive Property</a></p>

**Essential Skill: Solve word problems using all four operations.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b>  <i>Ask: What words signal which operation to use in a word problem?</i></p>	<p><a href="#">Word Problems Movie</a>            Learn the difference between a word problem and a regular math problem.</p>	<p><a href="#">Make-a-Movie</a>            Show how to solve a problem from everyday life.</p>	<p><a href="#">Quiz</a>            What did you learn about solving word problems?</p>	<p><a href="#">Problem Solving Using Tables</a></p>

**Essential Skill: Investigate factoring.**

<b>Warm Up</b>	<b>Build Background</b>	<b>Think and Do</b>	<b>Assess</b>	<b>Explore More Topics</b>
<u><a href="#">Pre-Assessment</a></u> Find the factors in a multiplication equation.	<u><a href="#">Factoring Movie</a></u> Discover what factors and multiplication have to do with breaking prime numbers into smaller parts.	<u><a href="#">Make a Concept Map</a></u> Identify all the factors of 45.	<u><a href="#">Quiz</a></u> What did you learn about factoring?	<u><a href="#">Prime Numbers</a></u>