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**Math: Statistics and Probability**

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Essential Skill: Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

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## Geometry

**Essential Skill: Solve problems involving area and surface area.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b>            Hold up a rectangular three dimensional object, like a book or a tissue box. Ask: <i>How can we use what we know about finding area to find the surface area of this object?</i></p>	<p><a href="#">Surface Area Movie</a>            Learn how to calculate the surface area of a three dimensional object by adding up the total space on every face.</p>	<p><a href="#">Make a Concept Map</a>            Sequence the steps to finding the surface area of a cylinder, triangular prism, or rectangular prism.</p>	<p><a href="#">Quiz</a>            What did you learn about calculating the surface area of three dimensional objects?</p>	<p><a href="#">Volume of Prisms</a>   <a href="#">Area of Polygons</a></p>

**Essential Skill: Solve problems using supplementary and complementary angles.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><a href="#">Pre-Assessment</a> Find a complementary angle.</p>	<p><a href="#">Angels Movie</a> Learn about supplementary and complementary angles.</p>	<p><a href="#">Make a Concept Map</a> Show the relationship between supplementary and complementary angles.</p>	<p><a href="#">Quiz</a> What did you learn about angles?</p>	<p><a href="#">Geometry</a></p>

**Essential Skill: Identify parallel and perpendicular lines.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b> <i>Ask: Where do you see parallel lines in the objects in the classroom? At home?</i></p>	<p><a href="#">Parallel and Perpendicular Lines Movie</a> Explore real-world examples of lines that are parallel, lines that are not parallel, and lines that intersect parallel lines.</p>	<p><a href="#">Make a Concept Map</a> Show the differences between perpendicular and parallel lines.</p>	<p><a href="#">Quiz</a> What did you learn about parallel and perpendicular lines?</p>	<p><a href="#">Angles</a></p>

## Math: Expressions and Equations

**Essential Skill: Write and evaluate numerical expressions involving whole-number exponents.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b>            Ask: <i>Where have you seen exponents before? How are they useful in expressing really large or really small numbers?</i></p>	<p><a href="#">Exponents Movie</a>            Discover how exponents give you the power to express really big (or really small) numbers.</p>	<p><a href="#">Make a Concept Map</a>            Break down the expression <math>5^5 + 3^2</math> from exponential form into standard form, and solve.</p>	<p><a href="#">Quiz</a>            What did you learn about exponents?</p>	<p><a href="#">Square Roots</a></p> <p><a href="#">Multiplying and Dividing Exponents</a></p> <p><a href="#">Standard and Scientific Notation</a></p>

**Essential Skill: Use the commutative property to simplify expressions.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b></p>	<p><a href="#">Commutative Property Movie</a></p>	<p><a href="#">Make-a-Movie</a></p>	<p><a href="#">Quiz</a>            What did you learn</p>	<p><a href="#">Distributive Property</a></p>

<p>Ask: <i>How does the order of the numbers in a subtraction problem impact the difference? How does the order of numbers in an addition problem impact the sum?</i></p>	<p>Learn how the commutative property works for addition and multiplication.</p>	<p>Make a BrainPOP-style movie that explains how the commutative property works.</p>	<p>about the commutative property?</p>	<p><a href="#">Associative Property</a></p>
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**Essential Skill: Use the distributive property to simplify an expression.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b> Ask: <i>How can we break up bigger numbers to help us solve multiplication problems?</i></p>	<p><a href="#">Distributive Property Movie</a> Discover what the distributive property means, and how you can use it to rewrite a problem for simpler solving.</p>	<p><a href="#">Make a Concept Map</a> Show some different ways <math>12 \times 7</math> can be expressed using the distributive property.</p>	<p><a href="#">Quiz</a> What did you learn about the distributive property?</p>	<p><a href="#">Associative Property</a> <a href="#">Commutative Property</a></p>

**Essential Skill: Use variables to represent numbers and write expressions when solving a problem.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b>            Post this problem: <i>Chris needs an extension cord to set up his new video game. How many 2-meter cords will he need to reach 7 meters?</i>            Ask: <i>How can we write an equation that represents this problem?</i></p>	<p><a href="#">Equations with Variables Movie</a>            Learn about variables, which are the x, y, and z of simplifying and solving algebraic equations.</p>	<p><a href="#">Make a Concept Map</a>            Diagram the process of isolating and solving for the variable in the equation <math>5y-13=12</math>.</p>	<p><a href="#">Challenge</a>            Use critical thinking to show what you know about solving equations with variables.</p>	<p><a href="#">Division</a>   <a href="#">Multiplication</a></p>

**Essential Skill: Write an inequality of the form  $x > c$  or  $x < c$  to represent a constraint or condition in a real-world or mathematical problem.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b></p>	<p><a href="#">Inequalities Movie</a>            Uncover the basics of</p>	<p><a href="#">Make-a-Movie</a></p>	<p><a href="#">Quiz</a>            What did you learn</p>	<p><a href="#">Graphing and Solving</a></p>

Ask: <i>How can we compare numbers using symbols?</i>	inequalities.	Show how to use an inequality to represent a real-world situation.	about inequalities?	<a href="#">Inequalities</a>
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## Math: The Number System

**Essential Skill: Compute quotients of fractions, and solve word problems involving division of fractions by fractions.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><a href="#">Pre-Assessment</a> Divide one fraction by another.</p>	<p><a href="#">Multiplying and Dividing Fractions Movie</a> Find out how to multiply and divide fractions, and see why dividing can actually make a number bigger!</p>	<p><a href="#">Make-a-Movie</a> Make a BrainPOP-style movie to help Tim figure out how many <math>\frac{1}{3}</math> cup servings of ice cream are in his <math>\frac{8}{12}</math> carton.</p>	<p><a href="#">Quiz</a> What did you learn about multiplying and dividing fractions?</p>	<p><a href="#">Fractions</a></p>



**Essential Skill: Divide multi-digit decimals.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b>            Ask: <i>When might you need to divide numbers that have decimals?</i></p>	<p><a href="#">Dividing Decimals Movie</a>            Learn tips and tricks for dividing decimals.</p>	<p><a href="#">Make-a-Movie</a>            Shows how Tim and Moby can evenly split the cost of a \$12.48 pizza.</p>	<p><a href="#">Challenge</a>            Use critical thinking skills to show what you know about dividing decimals.</p>	<p><a href="#">Multiplying Decimals</a>   <a href="#">Comparing Prices</a></p>

**Essential Skill: Understand absolute value of rational numbers.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b>            Ask: <i>When we ask about the absolute value of a number, what do we want to know?</i></p>	<p><a href="#">Absolute Value Movie</a>            Explore absolute value by using a numberline, determining the distance from zero, and deciding on positive or negative.</p>	<p><a href="#">Make a Movie</a>            Explain why zero is so important to absolute value.</p>	<p><a href="#">Quiz</a>            What did you learn about absolute value numbers?</p>	<p><a href="#">Adding and Subtracting Integers</a></p>

**Essential Skill: Solve problems by graphing points in all four quadrants of the coordinate plane.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b>            Ask: <i>How can the coordinate plane help us to visualize data?</i></p>	<p><a href="#">Coordinate Plane Movie</a>            Learn about an imaginary boundless surface with length and width, but no depth.</p>	<p><a href="#">Primary Source</a>            Investigate the Naval Academy map, and use your knowledge of coordinate planes to answer the accompanying questions.</p>	<p><a href="#">Challenge</a>            Use critical thinking skills to show what you know about coordinate planes.</p>	<p><a href="#">Slope and Intercept</a>   <a href="#">Graphs</a></p>

## Math: Ratios and Proportions

**Essential Skill: Understand ratio, and use ratios to solve problems.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b>            Ask: <i>What does it mean</i></p>	<p><a href="#">Ratios Movie</a>            Discover what ratios are, and how to use</p>	<p><a href="#">Make a Concept Map</a>            Show different ways that you can express</p>	<p><a href="#">Challenge</a>            Use critical thinking to show what you</p>	<p><a href="#">Percents</a>   <a href="#">Proportions</a></p>

<i>when an ad states 4 out of 5 people recommend something? What are some other ways to express these numbers?</i>	them.	Moby's scoring ratio of 12 out of 48 basketball shots.	know about ratios.	
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**Essential Skill: Understand the relationship between rate, distance and time, and apply it to solve problems.**

<b>Warm Up</b>	<b>Build Background</b>	<b>Think and Do</b>	<b>Assess</b>	<b>Explore More Topics</b>
<p><b><u>Pre-Assessment</u></b> Solve a word problem about distance, rate, and time.</p>	<p><b><u>Distance, Rate, and Time Movie</u></b> Discover how drawing a diagram and tables can help you on your quest to solve distance, rate, and time problems.</p>	<p><b><u>Play a Game</u></b> Use the Shopping Unit Rate game to answer the following question: How much money does Tim spend if he buys 9 apples a week for 12 weeks?</p>	<p><b><u>Challenge</u></b> Use critical thinking to show what you know about distance, rate, and time.</p>	<p><b><u>Acceleration</u></b></p>

**Essential Skill: Understand proportions and use proportions to solve problems.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b><u>Pre-Assessment</u></b> Solve a proportion problem to determine the real world distance between two points on a map.</p>	<p><b><u>Proportions Movie</u></b> Learn how to set up a proportion problem, and see how proportions can be used in any number of real-life situations.</p>	<p><b><u>Make a Movie</u></b> 5 tickets to a carnival cost \$45. Make a movie that explains how to set up a proportion to determine how much money 7 tickets would cost.</p>	<p><b><u>Challenge</u></b> Use critical thinking to show what you know about proportions.</p>	<p><b><u>Ratios</u></b>  <b><u>Percents</u></b></p>

**Math: Statistics and Probability**

**Essential Skill: Understand how to find the measures of central tendency (mean, median, mode, and range).**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b>Pre-Assessment: Class Discussion</b> Show list of the number</p>	<p><b><u>Mean, Median, Mode, and Range Movie</u></b> Learn how mean,</p>	<p><b><u>Play a Sorting Game</u></b></p>	<p><b><u>Quiz</u></b> What did you learn about mean, median,</p>	<p><b><u>Statistics</u></b>  <b><u>Basic Probability</u></b></p>

<p>of baskets scored by all members of any team over the last season.  <i>Ask: How can we analyze this information to learn more about this team's scoring patterns last season?</i></p>	<p>median, mode, and range help you work with sets and data.</p>	<p>Sort data sets based on their mean, median, range, and mode.</p>	<p>and mode?</p>	
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**Essential Skill: Display numerical data in plots on a number line, including dot plots, histograms, and box plots.**

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><b><u>Pre-Assessment</u></b>            What information can we learn from a graph?</p>	<p><b><u>Graphs Movie</u></b>            Learn how graphs help people visualize data and make sense of it.</p>	<p><b><u>Primary Source</u></b>            Analyze the graphs in all three sources, and answer the accompanying questions.</p>	<p><b><u>Quiz</u></b>            What did you learn about graphs?</p>	<p><b><u>Statistics</u></b>   <b><u>Graphing Linear Equations</u></b></p>