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Math: Statistics and Probability

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

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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>Pre-Assessment: Class Discussion 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>Surface Area Movie Learn how to calculate the surface area of a three dimensional object by adding up the total space on every face.</p>	<p>Make a Concept Map Sequence the steps to finding the surface area of a cylinder, triangular prism, or rectangular prism.</p>	<p>Quiz What did you learn about calculating the surface area of three dimensional objects?</p>	<p>Volume of Prisms Area of Polygons</p>

Essential Skill: Solve problems using supplementary and complementary angles.

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

Essential Skill: Identify parallel and perpendicular lines.

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p>Pre-Assessment: Class Discussion <i>Ask: Where do you see parallel lines in the objects in the classroom? At home?</i></p>	<p>Parallel and Perpendicular Lines Movie Explore real-world examples of lines that are parallel, lines that are not parallel, and lines that intersect parallel lines.</p>	<p>Make a Concept Map Show the differences between perpendicular and parallel lines.</p>	<p>Quiz What did you learn about parallel and perpendicular lines?</p>	<p>Angles</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>Pre-Assessment: Class Discussion <i>Ask: Where have you seen exponents before? How are they useful in expressing really large or really small numbers?</i></p>	<p>Exponents Movie Discover how exponents give you the power to express really big (or really small) numbers.</p>	<p>Make a Concept Map Break down the expression $5^5 + 3^2$ from exponential form into standard form, and solve.</p>	<p>Quiz What did you learn about exponents?</p>	<p>Square Roots Multiplying and Dividing Exponents Standard and Scientific Notation</p>

Essential Skill: Use the commutative property to simplify expressions.

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p>Pre-Assessment: Class Discussion</p>	<p>Commutative Property Movie</p>	<p>Make-a-Movie</p>	<p>Quiz What did you learn</p>	<p>Distributive Property</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>Associative Property</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>Pre-Assessment: Class Discussion Ask: <i>How can we break up bigger numbers to help us solve multiplication problems?</i></p>	<p>Distributive Property Movie Discover what the distributive property means, and how you can use it to rewrite a problem for simpler solving.</p>	<p>Make a Concept Map Show some different ways 12×7 can be expressed using the distributive property.</p>	<p>Quiz What did you learn about the distributive property?</p>	<p>Associative Property Commutative Property</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>Pre-Assessment: Class Discussion 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>Equations with Variables Movie Learn about variables, which are the x, y, and z of simplifying and solving algebraic equations.</p>	<p>Make a Concept Map Diagram the process of isolating and solving for the variable in the equation $5y-13=12$.</p>	<p>Challenge Use critical thinking to show what you know about solving equations with variables.</p>	<p>Division Multiplication</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>Pre-Assessment: Class Discussion</p>	<p>Inequalities Movie Uncover the basics of</p>	<p>Make-a-Movie</p>	<p>Quiz What did you learn</p>	<p>Graphing and Solving</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?	Inequalities
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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>Pre-Assessment Divide one fraction by another.</p>	<p>Multiplying and Dividing Fractions Movie Find out how to multiply and divide fractions, and see why dividing can actually make a number bigger!</p>	<p>Make-a-Movie Make a BrainPOP-style movie to help Tim figure out how many $\frac{1}{3}$ cup servings of ice cream are in his $\frac{8}{12}$ carton.</p>	<p>Quiz What did you learn about multiplying and dividing fractions?</p>	<p>Fractions</p>

Essential Skill: Divide multi-digit decimals.

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

Essential Skill: Understand absolute value of rational numbers.

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p>Pre-Assessment: Class Discussion Ask: <i>When we ask about the absolute value of a number, what do we want to know?</i></p>	<p>Absolute Value Movie Explore absolute value by using a numberline, determining the distance from zero, and deciding on positive or negative.</p>	<p>Make a Movie Explain why zero is so important to absolute value.</p>	<p>Quiz What did you learn about absolute value numbers?</p>	<p>Adding and Subtracting Integers</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>Pre-Assessment: Class Discussion Ask: <i>How can the coordinate plane help us to visualize data?</i></p>	<p>Coordinate Plane Movie Learn about an imaginary boundless surface with length and width, but no depth.</p>	<p>Primary Source Investigate the Naval Academy map, and use your knowledge of coordinate planes to answer the accompanying questions.</p>	<p>Challenge Use critical thinking skills to show what you know about coordinate planes.</p>	<p>Slope and Intercept Graphs</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>Pre-Assessment: Class Discussion Ask: <i>What does it mean</i></p>	<p>Ratios Movie Discover what ratios are, and how to use</p>	<p>Make a Concept Map Show different ways that you can express</p>	<p>Challenge Use critical thinking to show what you</p>	<p>Percents Proportions</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.

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><u>Pre-Assessment</u> Solve a word problem about distance, rate, and time.</p>	<p><u>Distance, Rate, and Time Movie</u> Discover how drawing a diagram and tables can help you on your quest to solve distance, rate, and time problems.</p>	<p><u>Play a Game</u> 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><u>Challenge</u> Use critical thinking to show what you know about distance, rate, and time.</p>	<p><u>Acceleration</u></p>

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

Warm Up	Build Background	Think and Do	Assess	Explore More Topics
<p><u>Pre-Assessment</u> Solve a proportion problem to determine the real world distance between two points on a map.</p>	<p><u>Proportions Movie</u> Learn how to set up a proportion problem, and see how proportions can be used in any number of real-life situations.</p>	<p><u>Make a Movie</u> 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><u>Challenge</u> Use critical thinking to show what you know about proportions.</p>	<p><u>Ratios</u> <u>Percents</u></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>Pre-Assessment: Class Discussion Show list of the number</p>	<p><u>Mean, Median, Mode, and Range Movie</u> Learn how mean,</p>	<p><u>Play a Sorting Game</u></p>	<p><u>Quiz</u> What did you learn about mean, median,</p>	<p><u>Statistics</u> <u>Basic Probability</u></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.

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