

**Common Core Standards for Mathematics**

**Content Standards**

**Ratios and Proportional Relationships**

**CCSS.MATH.CONTENT.7.RP.A:** Analyze proportional relationships and use them to solve real-world and mathematical problems.

**The Number System**

**CCSS.MATH.CONTENT.7.NS.A:** Apply and extend previous understandings of operations with fractions

**Expressions and Equations**

**CCSS.MATH.CONTENT.7.EE.A:** Use properties of operations to generate equivalent expressions.

**CCSS.MATH.CONTENT.7.EE.B:** Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

**Geometry**

**CCSS.MATH.CONTENT.7.G.A:** Draw construct, and describe geometrical figures and describe the relationships between them.

**CCSS.MATH.CONTENT.7.G.B:** Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

**Statistics and Probability**

**CCSS.MATH.CONTENT.7.SP.A:** Use random sampling to draw inferences about a population.

**CCSS.MATH.CONTENT.7.SP.B:** Draw informal comparative inferences about two populations.

**CCSS.MATH.CONTENT.7.SP.C:** Investigate chance processes and develop, use, and evaluate probability models.

**Mathematical Practices**

**CCSS.MATH.PRACTICE.MP1:** Make sense of problems and persevere in solving them.

**CCSS.MATH.PRACTICE.MP2:** Reason abstractly and quantitatively.

**CCSS.MATH.PRACTICE.MP3:** Construct viable arguments and critique the reasoning of others.

**CCSS.MATH.PRACTICE.MP4:** Model with mathematics.

**CCSS.MATH.PRACTICE.MP5:** Use appropriate tools strategically.

**CCSS.MATH.PRACTICE.MP6:** Attend to precision.

**CCSS.MATH.PRACTICE.MP7:** Look for and make use of structure.

**CCSS.MATH.PRACTICE.MP8:** Look for and express regularity in repeated reasoning.

\* Mathematical Practices are incorporated within all units.

**Technology**

SMART Board, iPads, calculators, Google Meet, Google Classroom, Google Drive, Khan Academy

Mathematics 7<sup>th</sup> Grade

Standards	Essential Questions	Content	Skills	Assessment	Resources
<p><b>Ratios and Proportional Relationships</b> CCSS.MATH.CONTENT.7.RP.A</p>	<p><b>Ratios and Proportional Relationships</b> How are proportional relationships used to solve real-world and mathematical problems?</p>	<p><b>Ratios and Proportional Relationships</b> -Unit rates -Quantities -Ratios -Graphs -Diagrams -Equations -Coordinate planes -Origins -Constant</p>	<p><b>Ratios and Proportional Relationships</b> -Compute unit rates -Decide whether two quantities are proportional using ratio tables and graphs -Understand difference between rate and unit rate -Graph ordered pairs on a coordinate plane -Understand ratio in terms of consumer math</p>	<p><b>Ratios and Proportional Relationships</b> -Quizzes -Tests</p>	<p><b>Ratios and Proportional Relationships</b> <i>-Big Ideas Math Course 2 by Big Ideas Learning LLC (2019)</i></p>
<p><b>The Number System</b> CCSS.MATH.CONTENT.7.NS.A</p>	<p><b>The Number System</b> How are integers applied in the real-world?</p>	<p><b>The Number System</b> -Integers -Absolute value -Operations of integers -Order of operations -Rational numbers -Irrational numbers -Additive inverse</p>	<p><b>The Number System</b> -Identify and represent integers -Order and compare integers -Identify and describe absolute value -Justify the rules for integers -Solve real-world and mathematical problems involving the four operations with rational numbers -Convert rational numbers to decimal numbers -Apply properties of operations as strategies to perform operations with rational numbers -Understand an integer can be divided by a non-zero number creating a quotient that is a rational number</p>	<p><b>The Number System</b> -Quizzes -Tests</p>	<p><b>The Number System</b> <i>-Big Ideas Math Course 2 by Big Ideas Learning LLC (2019)</i></p>

Mathematics 7<sup>th</sup> Grade

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<p><b>Expressions and Equations</b>                      CCSS.MATH.CONTENT.7.EE.A                      CCSS.MATH.CONTENT.7.EE.B</p>	<p><b>Expressions and Equations</b>                      How can algebraic expressions be simplified?                       How can rewriting an expression show how quantities are related?                       How are one-step and multi-step equations solved?</p>	<p><b>Expressions and Equations</b>                      -Combining like terms                      -Rational coefficients                      -Algebraic expressions                      -Linear expressions                      -Algebraic equations                      -Variables                      -Constants                      -Coefficients                      -Terms                      -Inequalities</p>	<p><b>Expressions and Equations</b>                      -Convert between forms as appropriate and assess reasonableness of answer                      -Use variables to represent quantities                      -Understand that rewriting expressions in different forms can show how quantities are related                      -Write, graph and solve equations                      -Solve and graph word problems involving inequalities                      -Recognize infinite solutions                      -Determine if a value is a solution of an inequality                      -Use the Distributive Property and grouping symbols to simplify expressions and equations</p>	<p><b>Expressions and Equations</b>                      -Quizzes                      -Tests</p>	<p><b>Expressions and Equations</b>                      -<i>Big Ideas Math Course 2 by Big Ideas Learning LLC (2019)</i></p>

Mathematics 7<sup>th</sup> Grade

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<p><b>Geometry</b>                      CCSS.MATH.CONTENT.7.G.A                      CCSS.MATH.CONTENT.7.G.B</p>	<p><b>Geometry</b>                      How are geometric figures drawn, constructed, and describe?                       How are geometric figures related?                       How can types of angles be used to find an unknown measure?                       How is perimeter and area of polygons found?                       How is circumference and area of circles found?                       How is surface area of three-dimensional figures found?</p>	<p><b>Geometry</b>                      -Area                      -Perimeter                      -Circumference                      -Radius                      -Diameter                      -Supplementary                      -Complimentary                      -Obtuse angle                      -Acute angle                      -Straight angle                      -Right angle                      -Polygon                      -Prism                      -Volume                      -Surface area                      -Perpendicular lines                      -Parallel lines                      -Intersecting lines                      -Vertical angles                      -Adjacent angles                      -Corresponding                      -Alternate, interior and exterior angles                      -Congruency                      -Transversal lines                      -Types of triangles                      -Regular and irregular polygons                      -Quadrilaterals                      -Parts of a circle                      -Formulas for area and volume or geometric shapes                      -Scale drawings</p>	<p><b>Geometry</b>                      -Classify and measure all types of angles                      -Use types of angles to find an unknown measure                      -Recognize different shapes when sliced                      -Use geometric vocabulary                      -Find the value of surface area, volume, perimeter and area of geometric shapes                      -Know and use all formulas for geometric shapes                      -Solve simple equations for an unknown angle                      -Draw geometric shapes with given conditions                      -Find interior and exterior angles of triangles</p>	<p><b>Geometry</b>                      -Quizzes                      -Tests</p>	<p><b>Geometry</b>                      -<i>Big Ideas Math Course 2 by Big Ideas Learning LLC (2019)</i></p>

Mathematics 7<sup>th</sup> Grade

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<b>Statistics and Probability</b> CCSS.MATH.CONTENT.7.SP.A CCSS.MATH.CONTENT.7.SP.B	<b>Statistics and Probability</b> How are statistics used to gain information about a population?  How are data sets of two populations compared?	<b>Statistics and Probability</b> -Random sample -Populations -Variabilities -Numerical data -Experimental probability -Theoretical probability -Generalizations -Comparative inferences -Mean absolute deviation -Dot plot	<b>Statistics and Probability</b> -Understand that statistics can be used to understand information about a population -Find the probability of compound events -Use random samples to draw inferences about populations	<b>Statistics and Probability</b> -Quizzes -Tests	<b>Statistics and Probability</b> - <i>Big Ideas Math Course 2 by Big Ideas Learning LLC (2019)</i>
<b>Statistics and Probability</b> CCSS.MATH.CONTENT.7.SP.C	<b>Statistics and Probability</b> How can the likelihood of an event be predicted using probability models?  How can the likelihood of a future event be determined?	<b>Statistics and Probability</b> -Chance events -Probability model -Uniform probability -Relative frequency -Sample space -Unbiased and biased sample -Simulation -Dependent, independent and compound events -Lists, tables, and tree diagrams	<b>Statistics and Probability</b> -Understand the likelihood of an event occurring -Develop probability models to find the likelihood of an event -Compare probabilities from a model to observe frequencies -Identify the outcomes in a sample space -Find probability using sample spaces -Create organized lists, tables, and tree diagrams -Approximate probability of a chance event -Design and use simulation to generate frequencies for compound events	<b>Statistics and Probability</b> -Quizzes -Tests	<b>Statistics and Probability</b> - <i>Big Ideas Math Course 2 by Big Ideas Learning LLC (2019)</i>