

# 8<sup>th</sup> Grade Math Curriculum

Mr. Holman

*Updated April 2019*

Month	Cluster	Topic	Lessons	Assessments
August/September	Major: 8.EE.A 8.NS.A	<u>Topic 1</u> Real Numbers Lessons 1-10  <u>Mathematical Practices</u> 1,2,3,4,5,6,7,8	<ul style="list-style-type: none"> <li>- Rational Numbers as Decimals (<i>8.NS.A.1</i>)</li> <li>- Understand Irrational Numbers (<i>8.NS.A.1</i>)</li> <li>- Compare and Order Real Numbers</li> <li>- Evaluate Square Roots and Cube Roots (<i>8.EE.A.2</i>)</li> <li>- Solve Equations Using Square Roots and Cube Roots (<i>8.EE.A.2</i>)</li> <li>- Use Properties of Integer Exponents (<i>8.EE.A.1</i>)</li> <li>- More Properties of Exponents (<i>8.EE.A.1</i>)</li> <li>- Use Powers of 10 to Estimate Quantities (<i>8.EE.A.3</i>)</li> <li>- Understand Scientific Notation (<i>8.EE.A.4</i>)</li> <li>- Operations with Numbers in Scientific Notation (<i>8.EE.A.4</i>)</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-Topic Assessment</li> <li>- Lesson Quizzes</li> <li>- Mid-Topic Checkpoint and Performance Task</li> <li>- 3-Act Math Modeling: Hard-Working Organs</li> <li>- STEM Project - Going Going Gone</li> <li>- Topic Assessment</li> </ul>

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Month	Cluster	Topic	Lessons	Assessments
October/November	Major: 8.EE.B 8.EE.C	<u>Topic 2</u> Analyze and Solve Linear Equations Lessons 1-9  <u>Mathematical Practices</u> 1,2,3,4,6,7,8	<ul style="list-style-type: none"> <li>- Collect Like Terms to Solve Equations (8.EE.C.7b)</li> <li>- Solve Equations with Variables on Both Sides (8.EE.C.7b)</li> <li>- Solve Multi-Step Equations (8.EE.C.7b)</li> <li>- Equations with No Solutions and Infinitely Many Solutions (8.EE.C.7a)</li> <li>- Compare Proportional Relationships (8.EE.B.5)</li> <li>- Connect Proportional Relationships and Slope (8.EE.B.6)</li> <li>- Analyze Linear Equations: <math>y=mx</math> (8.EE.B.6)</li> <li>- Understand the y-intercept of a Line (8.EE.B.6)</li> <li>- Linear Equations: <math>y=mx+b</math> (8.EE.B.6)</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-Topic Assessment</li> <li>- Lesson Quizzes</li> <li>- Mid-Topic Checkpoint and Performance Task</li> <li>- 3-Act Math Modeling: Powering Down</li> <li>- STEM Project - Modeling Population Growth</li> <li>- Topic Assessment</li> <li>- Cumulative/Benchmark Assessment (Topics 1-2)</li> <li>- Designing a Paper Airplane with Graphing Equations</li> </ul>

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Month	Cluster	Topic	Lessons	Assessments
November/ December	Major:  8.F.A 8.F.B	<u>Topic 3</u> Use Functions to Model Relationships Lessons 1-6  <u>Mathematical Practices</u> 1,2,3,4,5,7,8	<ul style="list-style-type: none"> <li>- Understand Relations and Functions (8.F.A.1)</li> <li>- Connect Representations of Functions (8.F.A.1)</li> <li>- Compare Linear and Nonlinear Functions (8.F.A.2, 8.F.A.3)</li> <li>- Construct Functions to Model Linear Relationships (8.F.A.2, 8.F.B.4)</li> <li>- Intervals of Increase and Decrease (8.F.B.5)</li> <li>- Sketch Functions from Verbal Descriptions (8.F.B.5)</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-Topic Assessment</li> <li>- Lesson Quizzes</li> <li>- Mid-Topic Checkpoint and Performance Task</li> <li>- 3-Act Math Modeling: Every Drop Counts</li> <li>- STEM Project - Modeling Population Growth</li> <li>- Topic Assessment</li> </ul>

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Month	Cluster	Topic	Lessons	Assessments
December	Supporting: 8.SP.A	<u>Topic 4</u> Investigate Bivariate Data Lessons 1-5  <u>Mathematical            Practices</u> 1,2,3,4,7,8	<ul style="list-style-type: none"> <li>- Construct and Interpret Scatter Plots (<i>8.SP.A.1</i>)</li> <li>- Analyze Linear Associations (<i>8.SP.A.2, 8.F.A.3, 8.F.B.4</i>)</li> <li>- Use Linear Models to Make Predictions (<i>8.SP.A.3, 8.F.A.3, 8.F.B.4</i>)</li> <li>- Interpret Two-Way Frequency Tables (<i>8.SP.A.4</i>)</li> <li>- Interpret Two-Way Relative Frequency Tables (<i>8.SP.A.4</i>)</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-Topic Assessment</li> <li>- Lesson Quizzes</li> <li>- Mid-Topic Checkpoint and Performance Task</li> <li>- 3-Act Math Modeling: Reaching Out</li> <li>- Topic Assessment</li> <li>- Cumulative/Benchmark Assessment (Topics 1-4)</li> </ul>

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Month	Cluster	Topic	Lessons	Assessments
January/February	Major: 8.EE.C	<u>Topic 5</u> Analyze and Solve Systems of Linear Equations Lessons 1-4  <u>Mathematical Practices</u> 1,2,3,4,6,7,8	<ul style="list-style-type: none"><li>- Estimate Solutions by Inspection (<i>8.EE.C.8b, 8.EE.C.8c</i>)</li><li>- Solve Systems by Graphing (<i>8.EE.C.8a, 8.EE.C.8c</i>)</li><li>- Solve Systems by Substitution (<i>8.EE.C.8b, 8.EE.C.8c</i>)</li><li>- Solve Systems by Elimination (<i>8.EE.C.8b, 8.EE.C.8c</i>)</li></ul>	<ul style="list-style-type: none"><li>- Pre-Topic Assessment</li><li>- Lesson Quizzes</li><li>- Mid-Topic Checkpoint and Performance Task</li><li>- 3-Act Math Modeling: Ups and Downs</li><li>- STEM Project - Water is Life!</li><li>- Topic Assessment</li><li>- Illustrative Math Tasks</li></ul>

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Month	Cluster	Topic	Lessons	Assessments
February/March	Major: 8.G.A	<p><u>Topic 6</u> Congruence and Similarity Lessons 1-10</p> <p><u>Mathematical Practices</u> 1,2,3,4,5,6,7,8</p>	<ul style="list-style-type: none"> <li>- Analyze Translations (8.G.A.1a, 8.G.A.1b, 8.G.A.1c, 8.G.A.3)</li> <li>- Analyze Reflections (8.G.A.1a, 8.G.A.1b, 8.G.A.1c, 8.G.A.3)</li> <li>- Analyze Rotations (8.G.A.1a, 8.G.A.1b, 8.G.A.1c, 8.G.A.3)</li> <li>- Compose Transformations (8.G.A.1a, 8.G.A.1b, 8.G.A.1c, 8.G.A.3)</li> <li>- Understand Congruent Figures (8.G.A.2, 8.G.A.3)</li> <li>- Describe Dilations (8.G.A.3, 8.G.A.4)</li> <li>- Understand Similar Figures (8.G.A.3, 8.G.A.4)</li> <li>- Angles, Lines, and Transversals (8.G.A.5)</li> <li>- Interior and Exterior Angles of Triangles (8.G.A.5)</li> <li>- Angle-Angle Triangle Similarity (8.G.A.5)</li> </ul>	<ul style="list-style-type: none"> <li>- Pre-Topic Assessment</li> <li>- Lesson Quizzes</li> <li>- Mid-Topic Checkpoint and Performance Task</li> <li>- 3-Act Math Modeling: Tricks of the Trade</li> <li>- Topic Assessment</li> </ul>

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Month	Cluster	Topic	Lessons	Assessments
March/April	Major: 8.G.B	<u>Topic 7</u> Understand and Apply the Pythagorean Theorem Lessons 1-4  <u>Mathematical Practices</u> 1,2,3,4,7,8	<ul style="list-style-type: none"><li>- Understand the Pythagorean Theorem (8.G.B.6, 8.G.B.7)</li><li>- Understand the Converse of the Pythagorean Theorem (8.G.B.6, 8.G.B.7)</li><li>- Apply the Pythagorean Theorem to Solve Problems (8.G.B.7)</li><li>- Find Distance in the Coordinate Plane (8.G.B.8)</li></ul>	<ul style="list-style-type: none"><li>- Pre-Topic Assessment</li><li>- Lesson Quizzes</li><li>- Mid-Topic Checkpoint and Performance Task</li><li>- 3-Act Math Modeling: Go with the Flow</li><li>- Topic Assessment</li><li>- Great America Requirement: Creating Problems or Roof Construction</li></ul>

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Month	Cluster	Topic	Lessons	Assessments
May	Additional: 8.G.C	<u>Topic 8</u> Solve Problems Involving Surface Area and Volume Lessons 1-4  <u>Mathematical Practices</u> 1,2,3,4,7,8	<ul style="list-style-type: none"><li>- Find Surface Area of Three-Dimensional Figures (8.G.C.9)</li><li>- Find Volume of Cylinders (8.G.C.9)</li><li>- Find Volume of Cones (8.G.C.9)</li><li>- Find Volume of Spheres (8.G.C.9)</li></ul>	<ul style="list-style-type: none"><li>- Pre-Topic Assessment</li><li>- Lesson Quizzes</li><li>- Mid-Topic Checkpoint and Performance Task</li><li>- 3-Act Math Modeling: Measure Up</li><li>- Topic Assessment</li><li>- Volume Activity: The Great Marshmallow Mystery</li></ul>