

# Algebra Curriculum

Mr. Holman

*Updated April 2019*

Month	Cluster	Topic	Lessons	Assessments
August/September		<p><u>Topic 1</u> Solving Equations and Inequalities Lessons 1-7</p> <p><u>Mathematical Practices</u> 1,2,3,4,5,6,7,8</p>	<ul style="list-style-type: none"> <li>- Operations on Real Numbers (<i>HSN.RN.B.3</i>)</li> <li>- Solving Linear Equations (<i>HSA.CED.A.1, HSA.REI.A.1, HSA.REI.B.3</i>)</li> <li>- Solving Equations with a Variable on Both Sides (<i>HSN.Q.A.2, HSA.CED.A.1, HSA.REI.A.1, HSA.REI.B.3</i>)</li> <li>- Literal Equations and Formulas (<i>HSN.Q.A.1, HSA.CED.A.1, HSA.CED.A.4</i>)</li> <li>- Solving Inequalities in One Variable (<i>HSA.CED.A.1, HSA.CED.A.3, HSA.REI.B.3</i>)</li> <li>- Compound Inequalities (<i>HSA.CED.A.1, HSA.CED.A.3, HSA.REI.B.3</i>)</li> <li>- Absolute Value Equations and Inequalities (<i>HSA.CED.A.1</i>)</li> </ul>	<ul style="list-style-type: none"> <li>- Topic Readiness Assessment</li> <li>- Lesson Quizzes</li> <li>- 3-Act Math Modeling: Collecting Cans</li> <li>- Topic Assessment</li> <li>- Topic Performance Assessment</li> </ul>

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September/October		<u>Topic 2</u> Linear Equations Lessons 1-4  <u>Mathematical Practices</u> 1,2,3,4,6,7	<ul style="list-style-type: none"><li>- Slope-Intercept Form (<i>HSA.CED.A.2, HHS.ID.C.7</i>)</li><li>- Point-Slope Form (<i>HSA.CED.A.2, HHS.ID.C.7</i>)</li><li>- Standard Form (<i>HSA.CED.A.2, HSA.CED.A.3, HSS.ID.C.7</i>)</li><li>- Parallel and Perpendicular Lines (<i>HSA.CED.A.2</i>)</li></ul>	<ul style="list-style-type: none"><li>- Topic Readiness Assessment</li><li>- Lesson Quizzes</li><li>- 3-Act Math Modeling: How Tall is Tall?</li><li>- Eiffel Tower Graphing Project</li><li>- Paper Airplane Graphing Activity</li><li>- Topic Assessment</li><li>- Topic Performance Assessment</li></ul>

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October/November		<p><u>Topic 3</u> Linear Functions Lessons 1-6</p> <p><u>Mathematical Practices</u> 1,2,3,4,6,7,8</p>	<ul style="list-style-type: none"> <li>- Relations and Functions (<i>HSF.IF.A.1</i>)</li> <li>- Linear Functions (<i>HSF.IF.A.1</i>, <i>HSF.IF.A.2</i>, <i>HSF.IF.B.5</i>, <i>HSF.LE.A.2</i>)</li> <li>- Transforming Linear Functions (<i>HSF.IF.B.5</i>, <i>HSF.IF.C.7</i>, <i>HSF.BF.A.1</i>, <i>HSF.BF.B.3</i>)</li> <li>- Arithmetic Sequences (<i>HSF.IF.A.3</i>, <i>HSF.BF.A.1</i>, <i>HSF.BF.A.1.A</i>, <i>HSF.BF.A.2</i>, <i>HSF.LE.A.2</i>)</li> <li>- Scatter Plots and Lines of Fit (<i>HSS.ID.B.6</i>, <i>HSS.ID.B.6.A</i>, <i>HSS.ID.B.6c</i>, <i>HSS.ID.C.7</i>)</li> <li>- Analyzing Lines of Fit (<i>HSS.ID.B.6</i>, <i>HSS.ID.B.6.A</i>, <i>HSS.ID.B.6.B</i>, <i>HSS.ID.B.6.C</i>, <i>HSS.ID.C.8</i>, <i>HSS.ID.C.9</i>)</li> </ul>	<ul style="list-style-type: none"> <li>- Topic Readiness Assessment</li> <li>- Lesson Quizzes</li> <li>- 3-Act Math Modeling: The Express Line</li> <li>- Topic Assessment</li> <li>- Topic Performance Assessment</li> </ul>

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Month	Cluster	Topic	Lessons	Assessments
November/ December		<u>Topic 4</u> Systems of Linear Equations and Inequalities Lessons 1-5  <u>Mathematical</u> <u>Practices</u> 1,2,3,4,5,7	<ul style="list-style-type: none"><li>- Solving Systems of Equations by Graphing (<i>HSA.REI.C.6</i>)</li><li>- Solving Systems of Equations by Substitution (<i>HSA.CED.A.3, HSA.REI.C.6</i>)</li><li>- Solving Systems of Equations by Elimination (<i>HSA.CED.A.3, HSA.REI.C.5</i>)</li><li>- Linear Equations in Two Variables (<i>HSA.REI.B.3, HSA.REI.D.12, HSA.CED.A.3</i>)</li><li>- Systems of Linear Inequalities (<i>HSA.CED.A.3, HSA.REI.D.12</i>)</li></ul>	<ul style="list-style-type: none"><li>- Topic Readiness Assessment</li><li>- Lesson Quizzes</li><li>- 3-Act Math Modeling: Get Up There!</li><li>- Topic Assessment</li><li>- Topic Performance Assessment</li></ul>

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Month	Cluster	Topic	Lessons	Assessments
January/February		<p><u>Topic 6</u> Exponents and Exponential Functions Lessons 1-5</p> <p><u>Mathematical Practices</u> 1,2,3,4,7,8</p>	<ul style="list-style-type: none"> <li>- Rational Exponents and Properties of Exponents (<i>HSN.RN.A.1, HSN.RN.A.2</i>)</li> <li>- Exponential Functions (<i>HSF.IF.B.4, HSF.IF.B.5, HSF.IF.B.6, HSF.LE.A.1</i>)</li> <li>- Exponential Growth and Decay (<i>HSA.CED.A.2, HSA.SSE.A.1.B, HSA.SSE.B.3.C, HSF.LE.A.1.A, HSF.LE.A.2, HSF.LE.B.5</i>)</li> <li>- Geometric Sequences (<i>HSF.IF.A.3, HSF.BF.A.2, HSF.LE.A.2</i>)</li> <li>- Transformations of Exponential Functions (<i>HSF.BF.B.3, HSF.IF.B.4, HSF.IF.C.9</i>)</li> </ul>	<ul style="list-style-type: none"> <li>- Topic Readiness Assessment</li> <li>- Lesson Quizzes</li> <li>- 3-Act Math Modeling: Big Time Pay Back</li> <li>- Topic Assessment</li> <li>- Topic Performance Assessment</li> </ul>

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Month	Cluster	Topic	Lessons	Assessments
February/March		<p><u>Topic 7</u> Polynomials and Factoring Lessons 1-7</p> <p><u>Mathematical Practices</u> 1,2,3,4,5,7,8</p>	<ul style="list-style-type: none"> <li>- Adding and Subtracting Polynomials (<i>HSA.APR.A.1</i>)</li> <li>- Multiplying Polynomials (<i>HSA.APR.A.1</i>)</li> <li>- Multiplying Special Cases (<i>HSA.APR.A.1</i>)</li> <li>- Factoring Polynomials (<i>HSA.APR.A.1, HSA.SSE.A.2</i>)</li> <li>- Factoring <math>x^2 + bx + c</math> (<i>HSA.SSE.A.1, HSA.SSE.A.1.A, HSA.SSE.A.1.B</i>)</li> <li>- Factoring <math>ax^2 + bx + c</math> (<i>HSA.SSE.A.1, HSA.SSE.A.1.A, HSA.SSE.A.1.B</i>)</li> <li>- Factoring Special Cases (<i>HSA.SSE.A.1, HSA.SSE.A.1.A, HSA.SSE.A.1.B, HSA.SSE.A.2</i>)</li> </ul>	<ul style="list-style-type: none"> <li>- Topic Readiness Assessment</li> <li>- Lesson Quizzes</li> <li>- 3-Act Math Modeling: Who's Right?</li> <li>- Topic Assessment</li> <li>- Topic Performance Assessment</li> </ul>

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Month	Cluster	Topic	Lessons	Assessments
April/May		<p><u>Topic 8</u> Quadratic Functions Lessons 1-5</p> <p><u>Mathematical Practices</u> 1,2,3,4,5,6,7,8</p>	<ul style="list-style-type: none"> <li>- Key Features of Graphs of Quadratic Functions (<i>HSA.CED.A.2, HSF.IF.B.6, HSF.BF.B.3</i>)</li> <li>- Quadratic Functions in Vertex Form (<i>HSF.IF.C.7, HSF.BF.B.3</i>)</li> <li>- Quadratic Functions in Standard Form (<i>HSF.IF.B.4, HSF.IF.7.A, HSF.IF.C.8, HSF.IF.C.9</i>)</li> <li>- Modeling with Quadratic Functions (<i>HSF.IF.A.2, HSS.ID.B.6.A, HSS.ID.B.6.B</i>)</li> <li>- Comparing Linear, Exponential, and Quadratic Models (<i>HSF.LE.A.3, HSS.ID.B.6.A</i>)</li> </ul>	<ul style="list-style-type: none"> <li>- Topic Readiness Assessment</li> <li>- Lesson Quizzes</li> <li>- 3-Act Math Modeling: The Long Shot</li> <li>- Topic Assessment</li> <li>- Topic Performance Assessment</li> </ul>

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Month	Cluster	Topic	Lessons	Assessments
May		<p><u>Topic 9</u> Solving Quadratic Equations Lessons 1-7</p> <p><u>Mathematical Practices</u> 1,2,3,4,5,6,7</p>	<ul style="list-style-type: none"> <li>- Solving Quadratic Equations Using Graphs and Tables (<i>HSA.CED.A.1, HSA.CED.A.2, HSA.REI.B.4.B, HSA.REI.D.11</i>)</li> <li>- Solving Quadratic Equations by Factoring (<i>HSA.SSE.B.3.A, HSA.APR.B.3, HSA.REI.B.4.B, HSF.IF.C.8.A</i>)</li> <li>- Rewriting Radical Expressions (<i>HSN.RN.A.2</i>)</li> <li>- Solving Quadratic Equations Using Square Roots (<i>HSA.CED.A.1, HSA.SSE.A.2, HSA.REI.B.4.B</i>)</li> <li>- Completing the Square (<i>HSA.REI.B.4.A, HSA.SSE.B.3.B, HSF.IF.C.8.A</i>)</li> <li>- The Quadratic Formula and the Discriminant (<i>HSA.SSE.B.3, HSA.CED.A.1, HSA.REI.B.4.A, HSA.REI.B.4B</i>)</li> <li>- Solving Nonlinear Systems of Equations (<i>HSA.REI.C.7, HSA.REI.D.11</i>)</li> </ul>	<ul style="list-style-type: none"> <li>- Topic Readiness Assessment</li> <li>- Lesson Quizzes</li> <li>- 3-Act Math Modeling: Unwrapping Change</li> <li>- Topic Assessment</li> <li>- Topic Performance Assessment</li> </ul>



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## TOPICS NOT COVERED

Month	Cluster	Topic	Lessons	Assessments
		<u>Topic 5</u> Piecewise Functions Lessons 1-4	<ul style="list-style-type: none"><li>- The Absolute Value Function</li><li>- Piecewise-Defined Functions</li><li>- Step Functions</li><li>- Transformations of Piecewise-Defined Functions</li></ul>	
		<u>Topic 10</u> Working with Functions Lessons 1-7	<ul style="list-style-type: none"><li>- The Square Root Function</li><li>- The Cube Root Function</li><li>- Analyzing Functions Graphically</li><li>- Translations of Functions</li><li>- Compressions and Stretches of Functions</li><li>- Operations with Functions</li><li>- Inverse Functions</li></ul>	
		<u>Topic 11</u> Working with Functions Lessons 1-5	<ul style="list-style-type: none"><li>- Analyzing Data Displays</li><li>- Comparing Data Sets</li><li>- Interpreting the Shapes of Data Displays</li><li>- Standard Deviation</li><li>- Two-Way Frequency Tables</li></ul>	