

**Berlin Brothersvalley School District**  
**Berlin High School**  
**Algebra II**  
**3rd Nine Weeks**

<b>Big Idea(s) for ____ nine weeks</b>	<b>Concept(s) of ____ nine weeks</b>	<b>Competencies of ____ nine weeks</b>	<b>Essential Questions for ____ nine weeks</b>
<p>Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.</p> <p>Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.</p>	<p><b>Students will know...</b></p> <ul style="list-style-type: none"> <li>● Graphs of systems</li> <li>● Substitution method</li> <li>● Elimination method</li> <li>● Inverses of Matrices</li> <li>● Linear Programing</li> <li>● Graphs of Systems of Linear Inequalities</li> <li>● Quadratics</li> <li>● Graph Translation Theorem</li> </ul>	<p><b>Students will be able to...</b></p> <ul style="list-style-type: none"> <li>● Solve systems by graphing</li> <li>● Solve systems using substitution</li> <li>● Solve systems using elimination</li> <li>● Solve systems using Matrices</li> <li>● Graph systems of linear inequalities</li> <li>● Complete linear programming problems</li> <li>● Identify Quadratics</li> <li>● Graph Quadratics</li> </ul>	<p>How are relationships represented mathematically?</p> <p>What makes a tool and/or strategy appropriate for a given task?</p> <p>How can expressions, equations and inequalities be used to quantify, solve, model, and/or analyze mathematical situations?</p>

<u>Topics</u>	<u>Approx # of weeks</u>	<u>PA Standards</u>	<u>Assessment Anchors &amp; Eligible Content</u>
Solving Systems using graphs and tables Solving systems using substitution Solving Systems using linear combinations Inverses of Matrices Solving Systems using Matrices Graphing Inequalities Systems of linear inequalities Linear Programing	7 weeks	<p><b>CC.2.2.HS.C.3</b> Write functions or sequences that model relationships between two quantities.</p> <p><b>CC.2.2.HS.D.7</b> Create and graph equations or inequalities to describe numbers or relationships.</p> <p><b>CC.2.2.HS.D.10</b> Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically</p> <p><b>CC.2.2.HS.D.3</b> Extend the knowledge of arithmetic operations and apply to polynomials.</p> <p><b>CC.2.2.HS.D.5</b> Use polynomial identities to solve problems</p>	A1.1.2.1.1 A1.1.2.1.2 A1.1.2.1.3 A1.2.1.1.1 A1.2.1.1.2 A1.2.1.1.3 A1.2.1.2.1 A1.2.1.2.2 A1.2.2.1.3 A1.2.2.1.4 A2.1.3.1.1 A2.1.3.1.2 A2.1.3.1.3 A2.1.3.1.4 A2.1.3.2.1 A2.1.3.2.2 A2.2.1.1.1 A2.2.1.1.2 A2.2.1.1.3 A2.2.1.1.4 A2.2.2.1.1 A2.2.2.1.2 A2.2.2.1.3 A2.2.2.1.4 A1.1.1.5.2 A1.1.1.5.3 A2.1.2.2.1 A2.1.2.2.2

<u>Topics</u>	<u>Approx # of weeks</u>	<u>PA Standards</u>	<u>Assessment Anchors &amp; Eligible Content</u>
Quadratic expressions Absolute values Graph Translation Theorem Graphing Quadratics	2 weeks	<p><b>CC.2.2.HS.D.3</b>            Extend the knowledge of arithmetic operations and apply to polynomials.</p> <p><b>CC.2.2.HS.D.4</b>            Understand the relationship between zeros and factors of polynomials to make generalizations about functions and their graphs.</p> <p><b>CC.2.2.HS.D.6</b>            Extend the knowledge of rational functions to rewrite in equivalent forms</p>	A1.1.1.5.1 A1.1.1.5.2 A1.1.1.5.3 A2.1.2.2.1 A2.1.2.2.2 A2.1.2.2.1 A2.1.2.2.2

Standards Legend: Essential Important Supplementary