

**Mathematics Scope and Sequence**  
**Vashon Island High School: Advanced Algebra and Trigonometry**

<b>First Trimester</b>	<b>Second Trimester</b>	<b>Third Trimester</b>
<p>Real numbers and equations (Ch. 1)</p> <ul style="list-style-type: none"> <li>Brief review of Algebra 1 –working with variables and equations</li> </ul> <p>Equations and inequalities (Ch. 2)</p> <ul style="list-style-type: none"> <li>Literal equations and formulas</li> <li>Solving inequalities</li> <li>Conjunctions and disjunctions</li> <li>Absolute value equations</li> <li>Absolute value inequalities</li> </ul> <p>Functions and graphs (Ch. 3)</p> <ul style="list-style-type: none"> <li>The coordinate plane</li> <li>Relations and functions</li> <li>Graphing equations</li> <li>Composition of functions</li> <li>Inverse functions</li> <li>Slope</li> <li>Parallel and perpendicular lines</li> <li>Equations of a line</li> </ul> <p>Systems of equations and inequalities (Ch. 4)</p> <ul style="list-style-type: none"> <li>Direct variation</li> <li>Graphing method</li> <li>Elimination method</li> <li>Substitution method</li> <li>Determinants and Cramer’s rule (Ch. 5)</li> <li>Matrix method (optional)</li> </ul> <p>Polynomials (Ch. 6)</p> <ul style="list-style-type: none"> <li>Exponents and monomials</li> <li>Polynomials</li> <li>Addition and subtraction</li> <li>Multiplication and division</li> <li>Factoring</li> <li>Solving polynomial equations</li> </ul> <p>Rational expressions (Ch. 7)</p> <ul style="list-style-type: none"> <li>Negative exponents and scientific notation</li> <li>Simplifying rational expressions</li> <li>Multiplying and dividing</li> <li>Adding and subtracting</li> </ul>	<p>Rational expressions continued (Ch. 7)</p> <ul style="list-style-type: none"> <li>Complex rational expressions</li> <li>Solving rational equations</li> </ul> <p>Irrational and complex numbers (Ch. 8)</p> <ul style="list-style-type: none"> <li>Roots and radicals</li> <li>Multiplying and dividing radicals</li> <li>Adding and subtracting radicals</li> <li>Solving radical equations</li> <li>Coordinate geometry</li> <li>Imaginary numbers</li> <li>Operations over the complex numbers</li> </ul> <p>Quadratic functions (Ch. 9)</p> <ul style="list-style-type: none"> <li>Graphing quadratic functions</li> <li>Completing the square</li> <li>The quadratic formula</li> <li>The discriminant</li> <li>Solving quadratic equations</li> <li>Quadratic inequalities</li> </ul> <p>Polynomial functions (Ch. 10)</p> <ul style="list-style-type: none"> <li>Dividing polynomials</li> <li>Synthetic division</li> <li>Remainder and factor theorems</li> <li>Solving polynomial equations</li> <li>Polynomial functions</li> </ul> <p>Conic sections (Ch. 11)</p> <ul style="list-style-type: none"> <li>Circles</li> <li>Parabolas</li> <li>Ellipses</li> <li>Hyperbolas</li> </ul> <p>Exponential and logarithmic functions (Ch. 12)</p> <ul style="list-style-type: none"> <li>Rational exponents</li> <li>Real exponents and exponential functions</li> <li>Logarithmic functions</li> <li>Properties of logarithms</li> <li>Evaluating logarithms</li> <li>Exponential equations</li> </ul>	<p>Trigonometric functions (Ch. 1)</p> <ul style="list-style-type: none"> <li>Functions and the coordinate plane</li> <li>Distance formula</li> <li>Angles</li> <li>Degrees and radians</li> <li>Angular and linear velocity</li> <li>Sine and cosine functions</li> <li>Trigonometric functions</li> <li>Special angles</li> <li>Evaluating trigonometric functions</li> </ul> <p>Graphing trigonometric functions (Ch. 2)</p> <ul style="list-style-type: none"> <li>Periodic functions and symmetry</li> <li>Sine and cosine graphs</li> <li>Amplitude and period</li> <li>Phase shift and vertical shift</li> <li>Tangent and cotangent graphs</li> <li>Secant and cosecant graphs</li> <li>Combined graphs</li> </ul> <p>Right triangle trigonometry and basic identities (Ch. 3)</p> <ul style="list-style-type: none"> <li>Solving right triangles</li> <li>Angles of elevation and depression</li> <li>Applications</li> <li>Fundamental identities</li> <li>Equivalent trigonometric expressions</li> <li>Proving identities</li> <li>Graphing identities</li> </ul> <p>Oblique triangles (Ch. 4)</p> <ul style="list-style-type: none"> <li>The law of sines</li> <li>The law of cosines</li> <li>The area of a triangle</li> <li>Heron’s formula</li> <li>Vectors in the plane</li> </ul> <p>Trigonometric identities (Ch. 5)</p> <ul style="list-style-type: none"> <li>Sum and difference identities</li> <li>Double angle identities</li> <li>Half angle identities</li> </ul>