

COMPONENT	OBJECTIVES	COMPETENCY
I Polynomial Functions	<ol style="list-style-type: none"> <li>1. Evaluate and graph a polynomial function including linear, quadratic, and variation functions.</li> <li>2. Demonstrate knowledge of and apply the remainder and factor theorems.</li> <li>3. Apply the Fundamental Theorem of Algebra (MA.A.2.4.3)</li> <li>4. Determine real and complex roots of polynomial functions. (MA.A.2.4.2) (MA.A.2.4.3)</li> <li>5. Apply transformations to polynomial functions.</li> <li>6. Use polynomial functions to solve real-world application problems.</li> </ol>	<p>A. Evaluate, graph, and apply polynomial functions using tables, graphs, matrices models, graphing calculators, computers, projects, and cooperative learning groups. (MA.D.1.4.1)</p>
II Rational Functions	<ol style="list-style-type: none"> <li>1. Evaluate and graph a rational function</li> <li>2. Determine asymptotes and points of discontinuity. (MA.A.2.4.1)</li> <li>3. Use rational functions to solve real-world application problems.</li> </ol>	<p>A. Evaluate, graph and apply rational functions using tables, graphs, models, graphing calculators, computers and cooperative learning groups. (MA.D.1.4.1)</p>
III Statistics	<ol style="list-style-type: none"> <li>1. Interpret and evaluate statistical measures: e.g, relative frequency mode, median, mean, percentile, quartile, correlation, variance, and standard deviation. (MA.E.1.4.2)</li> <li>2. Interpret and display statistical data in the appropriate form as graphs, tables, histograms, box plots, and scatter plots. (MA.E.1.4.1)</li> <li>3. Apply transformations to statistical data.</li> <li>4. Use the Central Limit Theorem to estimate solutions to problems. (MA.B.4.4.1)</li> </ol>	<p>A. Demonstrate knowledge of statistical measures, distributions and graphs using tables, computers, graphing calculators, projects, and cooperative learning groups.</p>

COMPONENT	OBJECTIVES	COMPETENCY
IV Probability	<p>5. Determine a line of best fit and use it to predict an event.</p> <p>6. Test a hypothesis using confidence intervals. (MA.B.4.4.1)</p> <p>1. Evaluate and use counting principles to solve problems fundamental principle of counting, combinations, and permutations. (MA.E.2.4.1)</p> <p>2. Demonstrate knowledge of the binomial theorem</p> <p>3. Determine the probability of a single or a compound event. (MA.E.2.4.2)</p> <p>4. Determine whether events are mutually exclusive, independent, or dependent. (MA.E.2.4.2)</p> <p>5. Graph a probability distribution and determine its mean. (MA.E.1.4.2)</p> <p>6. Use a table of random numbers to simulate an event.</p> <p>7. Identify and compute binomial probabilities. (MA.E.2.4.2)</p> <p>8. Use Z scores and a table of values for the standard normal distribution to determine the probability of an event. (MA.E.2.4.1)</p>	<p>A. Demonstrate knowledge of probability measures and distributions by devising and carrying out experiments and simulations using models, graphing calculators, computers, projects, and cooperative learning groups.</p>

COMPONENT	OBJECTIVES	COMPETENCY
<p>V Exponential and Logarithmic Functions</p>	<ol style="list-style-type: none"> <li>1. Evaluate expressions having rational exponents. (MA.A.1.4.4)</li> <li>2. Simplify expressions with rational exponents by applying the properties of exponents.</li> <li>3. Graph exponential functions.</li> <li>4. Define a logarithmic function as the inverse of an exponential function. (MA.A.1.4.4)</li> <li>5. Evaluate and graph logarithmic function with base 10 and base e. (MA.A.1.4.4)</li> <li>6. Compare domain and ranges of both exponential and logarithmic functions.</li> <li>7. Compare graphs and discuss axis of symmetry.</li> <li>8. Simplify expressions using the properties of logarithms. (MA.A.1.4.4)</li> <li>9. Solve exponential equations (MA.A.1.4.4)</li> <li>10. Solve logarithmic equations (MA.A.1.4.4)</li> <li>11. Use exponential functions to describe real-world situations</li> <li>12. Use logarithmic functions to describe real-world situations.</li> </ol>	<p>A. Demonstrate knowledge of exponential and logarithmic functions using graphing calculators, computers, models, projects, and cooperative learning groups.</p>

COMPONENT	OBJECTIVES	COMPETENCY
<p>VI Trigonometric and Circular Functions</p>	<ol style="list-style-type: none"> <li>1. Convert between angle measures in degrees and radian measure of arc length</li> <li>2. Write the values of the six trigonometric ratios for the acute angles in a given right triangle. (MA.C.3.4.1)</li> <li>3. Solve problems using the trigonometric ratios of angle measures. (MA.C.3.4.1)</li> <li>4. Write the values of the six circular functions for a given rotation.</li> <li>5. Differentiate between the domains of trigonometric and circular functions.</li> <li>6. Solve problems using the Law of Sines and the Law of Cosines.</li> <li>7. Demonstrate knowledge of trigonometric identities including <math>\cos(A + B)</math>, <math>\sin(A + B)</math>, <math>\cos 2A</math> and <math>\sin 2A</math>.</li> <li>8. Evaluate and graph the six trigonometric and six circular functions.</li> <li>9. Understand the connection between trigonometric and circular functions.</li> <li>10. Apply transformations (amplitude, period, phase, shift, and vertical shift) to graphs of trigonometric and circular functions. (MA.D.1.4.2)</li> <li>11. Use circular functions to model and describe periodic real-world functions.</li> <li>12. Graph and evaluate inverse trigonometric and circular functions.</li> <li>13. Solve trigonometric and circular equations and verify identities.</li> <li>14. Write complex numbers in polar form. (MA.A.1.4.3)</li> </ol>	<p>A. Evaluate, graph, and apply trigonometric and circular functions using graphing calculators, computers, models, projects, and cooperative learning groups.</p>

COMPONENT	OBJECTIVES	COMPETENCY
	<p>15. Use De Moivre's Theorem to find roots of complex numbers. (MA.A.2.4.3)</p> <p>16. Graph polar equations.</p> <p>17. Understand the connections between trigonometric functions and polar coordinates, and complex numbers. (MA.A.1.4.4)</p> <p>18. Explore fractals using the computer.</p>	