

PLANNED COURSE

SUBJECT AREA: Algebra II/Trigonometry **GRADE/COURSE:** 10/11
Standard And Strand 2.1 Numbers, Number Systems, and Number Relationships

OBJECTIVES	PERFORMANCE INDICATORS	ASSESSMENTS (Variety as per Section 4.52, Chapter 4)
<p>A. Understand concepts such as opposite, reciprocal, absolute value, raising to a power, finding roots and logarithms.</p>	<ol style="list-style-type: none"> 1. Define and use a number's opposite, reciprocal and absolute value. 2. Raise a number to a power using integral, rational and negative exponents. 3. Find specified roots and write them in logarithmic form. 	<p>Homework</p> <p>Written work</p> <p>Teacher observation</p> <p>Projects</p> <p>Group work</p> <p>Quizzes</p> <p>Teacher-made tests</p> <p>Standardized tests</p> <p>Portfolio</p>

SUBJECT AREA:
Standard And Strand

Algebra II/Trigonometry
2.2 Computation and Estimation

GRADE/COURSE: 10/11

OBJECTIVES	PERFORMANCE INDICATORS	ASSESSMENTS (Variety as per Section 4.52, Chapter 4)
A. Develop and use computation concepts, operations and procedures on real numbers in problem solving situations. B. Use estimation to solve problems for which an exact answer is not needed. C. Construct and apply mathematical models, including lines and curves of best fit, to estimate values of related quantities.	1. Solve word problems with real world applications. 1. Use estimation skills to check for reasonableness of answers. 2. Estimate values of radicals. 3. Use scientific notation in approximating and estimating. 1. Write equations for word problems. 2. Include real-life situations.	Homework Written work Teacher observation Projects Group work Quizzes Teacher-made tests Standardized tests Portfolio

SUBJECT AREA: Algebra II/Trigonometry
Standard And Strand 2.3: Measurement and Estimation

GRADE/COURSE: 10/11

OBJECTIVES	PERFORMANCE INDICATORS	ASSESSMENTS (Variety as per Section 4.52, Chapter 4)
<p>A. Use appropriate units of measurement when problem solving.</p> <p>B. Measure and compare angles in degrees and radians.</p>	<p>1. Use proper units of measurement throughout real world application problems.</p> <p>1. Convert angle measures from degree to radian and vice versa.</p> <p>2. Visualize angles on the unit circle to compare their degree and radian equivalence.</p> <p>3. Estimate quadrants where various sized angles would be located, including positive and negative values.</p>	<p>Homework</p> <p>Written work</p> <p>Teacher observation</p> <p>Projects</p> <p>Group work</p> <p>Quizzes</p> <p>Teacher-made tests</p> <p>Standardized tests</p> <p>Portfolio</p>

SUBJECT AREA: Algebra II/Trigonometry
Standard And Strand 2.4: Mathematical Reasoning and Connections

GRADE/COURSE: 10/11

OBJECTIVES	PERFORMANCE INDICATORS	ASSESSMENTS (Variety as per Section 4.52, Chapter 4)
<p>B. Construct valid arguments from stated facts.</p> <p>C. Determine the validity of an argument.</p> <p>D. Use truth tables to reveal the logic of mathematical statements.</p>	<p>1. Use postulates of algebra to construct valid arguments (addition, subtraction, multiplication, and division properties of equality, substitution, distributive property).</p> <p>1. Use algebraic definitions to justify reasoning.</p> <p>1. Use truth tables to determine whether compound statements are true or false.</p>	<p>Homework</p> <p>Written work</p> <p>Teacher observation</p> <p>Projects</p> <p>Group work</p> <p>Quizzes</p> <p>Teacher-made tests</p> <p>Standardized tests</p> <p>Portfolio</p>

SUBJECT AREA: Algebra II/Trigonometry

GRADE/COURSE: 10/11

Standard And Strand 2.5: Mathematical Problem Solving and Communication

OBJECTIVES	PERFORMANCE INDICATORS	ASSESSMENTS (Variety as per Section 4.52, Chapter 4)
<p>A. Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.</p> <p>B. Use symbols, mathematical terminology, standard notation, mathematical rules, graphing and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas and results.</p>	<p>1. Use ideas from algebra, geometry and trigonometry to solve real world problems involving several steps.</p> <p>2. Write each step of the problem using proper form and labels.</p> <p>1. Write a step-by-step description to explain the process used in solving open-ended word problems.</p>	<p>Homework</p> <p>Written work</p> <p>Teacher observation</p> <p>Projects</p> <p>Group work</p> <p>Quizzes</p> <p>Teacher-made tests</p> <p>Standardized tests</p> <p>Portfolio</p>

SUBJECT AREA: Algebra II/Trigonometry
Standard And Strand 2.6: Statistics and Data Analysis

GRADE/COURSE: 10/11

OBJECTIVES	PERFORMANCE INDICATORS	ASSESSMENTS (Variety as per Section 4.52, Chapter 4)
<p>A. Use standard deviation and variance as they relate to a random sample.</p> <ul style="list-style-type: none"> • Use statistical terminology. <p>B. Use appropriate technology to organize and analyze data.</p> <ul style="list-style-type: none"> • Become familiar with various methods of representing data. <p>C. Determine regression equation of best fit.</p>	<p>1. Given a particular scenario and several possibilities of how to choose a sample, students will select the best example of a random sample.</p> <p>2. Given a set of data, find the mean, median, mode, variance and standard deviation.</p> <p>1. Use graphing software or a graphing calculator to organize and visually represent data.</p> <p>2. Represent data using scatter plots, box-and-whisker plots, stem-and-leaf diagrams.</p> <p>1. Use a scatter plot to identify the correlation shown by a set of data.</p> <p>2. Approximate the best-fitting line for positive or negative correlations and determine its equation.</p>	<p>Homework</p> <p>Written work</p> <p>Teacher observation</p> <p>Projects</p> <p>Group work</p> <p>Quizzes</p> <p>Teacher-made tests</p> <p>Standardized tests</p> <p>Portfolio</p>

SUBJECT AREA: Algebra II/Trigonometry
Standard And Strand 2.7: Probability and Predictions

GRADE/COURSE: 10/11

OBJECTIVES	PERFORMANCE INDICATORS	ASSESSMENTS (Variety as per Section 4.52, Chapter 4)
<p>A. Compare odds and probability.</p> <p>B. Apply probability and statistics involving a sample to generalize its results to the entire population.</p> <p>C. Draw a conclusion regarding the validity of a probability or statistical argument and justify the conclusion.</p>	<p>1. Find the probability that an event will occur and determine the odds in favor of that event occurring.</p> <p>1. Calculate chi-square values and use them to test hypotheses.</p>	<p>To assess the performance indicators, the following will be used:</p> <p>Homework</p> <p>Written work</p> <p>Teacher observation</p> <p>Projects</p> <p>Group work</p> <p>Quizzes</p> <p>Teacher-made tests</p> <p>Standardized tests</p> <p>Portfolio</p>

SUBJECT AREA: Algebra II/Trigonometry
Standard And Strand 2.8: Algebra and Functions

GRADE/COURSE: 10/11

OBJECTIVES	PERFORMANCE INDICATORS	ASSESSMENTS (Variety as per Section 4.52, Chapter 4)
<p>A. Analyze a given set of data for the existence of a pattern algebraically and graphically.</p> <p>B. Give examples of patterns that occur in data from other disciplines.</p> <p>C. Use patterns, sequences and series to solve routine and non-routine problems.</p> <p>D. Formulate expressions, equations, inequalities, systems of equations, systems of inequalities, and matrices to model routine and non-routine problem situations.</p>	<p>Find patterns in a sequence and produce a mathematical model.</p> <p>Graph a given set of data. Look for any patterns that may occur.</p> <p>Use a table to record data. See if a pattern is developing. Write a formula to express the pattern.</p> <p>Identify and generate arithmetic and geometric sequences.</p> <p>Find the nth term of an arithmetic or geometric sequence.</p>	<p>Homework</p> <p>Written work</p> <p>Teacher observation</p> <p>Projects</p> <p>Group work</p> <p>Quizzes</p> <p>Teacher-made tests</p> <p>Standardized tests</p> <p>Portfolio</p>

SUBJECT AREA: Algebra II/Trigonometry
Standard And Strand 2.9: Geometry

GRADE/COURSE: 10/11

OBJECTIVES	PERFORMANCE INDICATORS	ASSESSMENTS (Variety as per Section 4.52, Chapter 4)
G. Solve problems using analytic geometry. H. Construct a geometric figure and its image using various transformations. J. Analyze figures in terms of the kinds of symmetries they have.	Use the distance formula to find the distance between any two points in the plane. Find the coordinates of the midpoint of a segment, given the coordinates of the endpoints. Sketch a graph showing vertical translation, stretching or shrinking. Sketch a graph showing horizontal translation, stretching or shrinking.	Homework Written work Teacher observation Projects Group work Quizzes Teacher-made tests Standardized tests Portfolio

SUBJECT AREA: Algebra II/Trigonometry
Standard And Strand 2.10: Trigonometry

GRADE/COURSE: 10/11

OBJECTIVES	PERFORMANCE INDICATORS	ASSESSMENTS (Variety as per Section 4.52, Chapter 4)
A. Use graphing calculators to display periodic and circular functions and describe properties of the graphs. B. Identify, create, and solve practical problems involving right triangles using the trigonometric functions and the Pythagorean Theorem.	Identify periodic functions from their graph. Graph the trigonometric functions. Determine the period and the amplitude. Use trigonometric ratios to solve right triangles, including those relating to real-world situations.	Homework Written work Teacher observation Projects Group work Quizzes Teacher-made tests Standardized tests Portfolio

SUBJECT AREA: Algebra II/Trigonometry
Standard And Strand 2.11: Concepts of Calculus

GRADE/COURSE: 10/11

OBJECTIVES	PERFORMANCE INDICATORS	ASSESSMENTS (Variety as per Section 4.52, Chapter 4)
A. Determine maximum and minimum values of a function over a specified interval. B. Interpret maximum and minimum values in problem situations. D. Determine sums of finite sequences of numbers and infinite geometric series.	Determine the maximum or minimum values for polynomial functions over specified intervals. Determine maximum and minimum values in multi-step problems. Determine the sum of a finite series. Calculate a specific term in a geometric sequence given a non-integer common ratio.	Homework Written work Teacher observation Projects Group work Quizzes Teacher-made tests Standardized tests Portfolio

Algebra 2 / Trigonometry Resources

1. Bellman, Bragg, Chapin, Gardella. Advanced Algebra, Prentice-Hall Inc., 2001.
ISBN: 0-13-050183-2.
2. Cohen. Algebra and Trigonometry, Brooks/Cole, 1997. ISBN: 0-314-06922-4.
3. Collins, Cuevas, Foster, Gordon. Algebra 2, McGraw-Hill Companies, Inc., 2001.
ISBN: 0-07-822889-1.
4. Larson, Boswell, Kanold, Stiff. Algebra 2, McDougal Littell Inc., 2001.
ISBN: 0-395-97890-4.
5. Schultz, Ellis, Hollowell, Kennedy, Engelbrecht. Algebra 2, Holt, Rinehart and
Winston, 2003. ISBN: 0-03-066056-4.
6. Smith, Charles, Dossey, Bittinger. Algebra 2 with Trigonometry, Prentice-Hall Inc.,
2001. ISBN: 0-13-051969-3.