

MATH CURRICULUM SUMMARY ~ GRADES 11 & 12

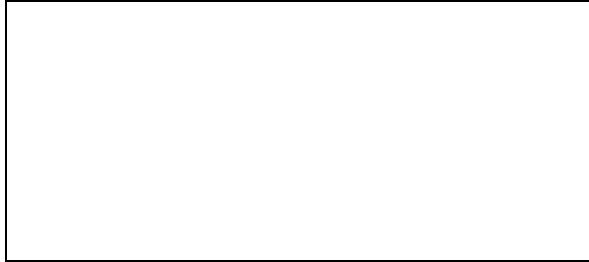
Assessments include: daily work, worksheets, homework, quizzes, tests, math journals, notebooks.

Prerequisites for Calculus	Applications of Derivatives	Applications of Definite Integrals
<ul style="list-style-type: none"> • Coordinate geometry • Relations, functions and their inverses • Review of geometric transformations • Review of trigonometric functions • Review of finding models to fit data using the graphing calculator 	<ul style="list-style-type: none"> • Maxima, Minima and the Mean Value Theorem • First and second derivative tests for relative extrema • Concavity and points of inflection • Limits at infinity • Sketching polynomial, rational, radical and transcendental functions • Optimization problems 	<ul style="list-style-type: none"> • Areas: under a curve, between two curves, and surfaces of revolution • Volumes of solids: using disks, using washers, and using cylindrical shells • Lengths of curves

Limits and Continuity	Integration	Transcendental Functions (OPT.)
<ul style="list-style-type: none"> • Limits as x approaches a single value and one-sided limits • Continuous functions • Sandwich or Squeeze theorem • Formal definition of limits (optional) 	<ul style="list-style-type: none"> • Approximating areas – rectangular, trapezoidal, and Simpson’s methods • Definite integrals • Antiderivatives and indefinite integrals • Fundamental Theorem of Calculus • Indefinite Integrals • Integration by substitution (the Chain Rule in reverse) <p>Instructional Strategies include: cooperative learning groups, integration of technology, mini-lecture, concrete materials, guided practices,</p>	<ul style="list-style-type: none"> * Natural logarithms * The Exponential function * Other exponential and logarithmic functions * Exponential growth
<p style="text-align: center;">Derivatives</p> <ul style="list-style-type: none"> • Definition of derivative in terms of The Tangent Line Problem • Numerical derivatives • Differentiation rules • Rates of change and related rates • Derivatives of trigonometric functions • Implicit differentiation 		

Board Approved 6/06

**CALCULUS
GRADES 11, 12**



independent practice.