IB MYP Algebra 2 & Trigonometry

Unit 2A: Quadratic Functions and Equations

1st Quarter ♦ 2016-2017

IBMYP Statement of Inquiry: Many real-life patterns have a parabolic form, which can be represented and explored using a quadratic model.

DATE	TOPIC	TEXT REFERENCE	IXL Extra Practice	ASSIGNMENT	PA#
September 30 (F) *Day 1*	• Unit 1 Review • Relations and Functions • Domain and Range • Transformations with Functions	2-1 2-7, 5-7	A2: D.1 – D.5 P.1 – P.6	Complete the Unit 1 Review and **CHECK IT BEFORE NEXT CLASS** using the posted key	**PA8**
October 4 (Tu)	**Unit 1 SUMMATIVE ASSESSMENT: Absolute Value Functions and Equations**			Domain and Range I WS Finish the Transformations of Functions WS (from Day 1)	**PA9**
October 6 (Th) *Day 2*	• Modeling Real World Data with Quadratic Functions – Quadratic Regression and Max/Min Values	5-2	A2: J.1-J.3, J.11	Quadratic Models Homework WS	**PA10**
October 10 (M): Professional Day for Staff – No School for Students					
October 11 (Tu) *Progress Reports Issued* *Day 3*	***QUIZ: Function Families*** • Graphing Quadratic Functions from Vertex Form	5-1	A2: T.1, T.2, T.4, T.5	Graphing Quadratics from Vertex Form Homework WS Unit 1 IBMYP Assessment	**PA11**
October 13 (Th) *Day 4*	• Graphing Quadratic Functions using Equivalent Quadratic Forms • Solving Quadratic Equations by Graphing	5-1 5-2	A2: T.1, T.2, T.4, T.5	Graphing Quadratic Functions HW WS	**PA12**
October 17 (M) *Day 5*	***QUIZ: Days 1-3*** • Factoring Quadratic Expressions Review	0-3	A2: I.1 – I.5 A1: AA.1 – AA.6	Factoring Practice HW WS Quizizz Factoring Assessment	**PA13**
October 19 (W) *Adjusted Schedule - PSAT* *Day 6*	• Solving Quadratic Equations by Factoring	5-3	A2: J.5 A2: J.6	Solving Quadratic Equations by Factoring WS	**PA14**
October 21 (F) *Day 7*	• Unit 2A Review	0-3, 2-7, 5-1–5-3, 5-7		Complete the Unit 2A Review and **CHECK IT BEFORE NEXT CLASS** using the posted key	**PA15**
October 24 (M) *Day 8*	• **Unit 2A SUMMATIVE ASSESSMENT: Quadratic Functions and Equations**	0-3, 2-7, 5-1–5-3, 5-7		Simplifying Square Roots Review Homework WS	**PA16**

Unit 2 Overview

Students will identify and sketch graphs of parent functions and find domains and ranges of functions including linear, piecewise, greatest integer and absolute value functions. Students will then be able to graph these functions using transformations. Students will also graph linear, square, and absolute value inequalities.

The BIG Ideas for Unit 2 are . . .

- Function models of real life relationships enable predictions to be made.
- The parameters of a function relate to the transformation of the graph
- The solutions of a quadratic equation are the zeros/roots of its related function.

Unit 2 Virginia Standards of Learning

AII/T.4 The students will solve, algebraically and graphically,

a. Absolute value equations and inequalities

Graphing calculators will be used for solving and for confirming algebraic solutions.

AII/T.6 The students will recognize the general shape of function families (absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic) and will convert between graphic and symbolic forms of functions. A transformational approach to graphing will be employed.

AII/T.7 The students will investigate and analyze functions algebraically and graphically. Key concepts include

a. Domain and range, including limited and discontinuous domains and ranges.

Unit 2 Essential Questions

Be sure to answer these questions as we progress through the unit. Some or all of them will be used as essay questions on your unit assessment. ☺

- How do the parameters of a function determine the shape of its graph?
- What are examples of real life situations that can be modeled by a quadratic function?
- What are the zeros of a quadratic function?
- How do we determine which method to solve quadratic equations is most efficient?
- Why is it important to learn a variety of methods for solving quadratic equations?

Unit 2A Learning Targets		*Skill Mastered* ✓	*Summative Assessment Score (points)*	*Summative Assessment %*
Learning Target Set **A**	I can state the domain and range of any relation or function using set builder notation and interval notation.			
Learning Target Set **B**	I can graph a quadratic function, and state all of its parts (vertex, roots/zeros, intercepts, axis of symmetry, domain and range) in any form (standard, vertex, intercept) with and without a graphing calculator.			
Learning Target Set **C**	I can answer the essential questions and related questions regarding the unit, and apply knowledge of quadratics in real-life contexts (using a graphing calculator).			
Learning Target Set **D**	I can factor a quadratic expression and solve a quadratic equation over the set of real numbers by factoring.			