**Edwards’ Syllabus ☺ 2018-2019 ☺ Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ☺Block\_\_\_\_\_\_**

**IBMYP A2T Unit 2A: Quadratic Functions and Relations**

**HOMEWORK POLICY:** *In order to receive a 3, you must do the following (.5 off for each incomplete objective):*

1. Write your name and date along with the assignment in the top margin. All of your work must be done in pencil or a black pen.
2. Copy each problem. If you have to do any graphing, it must be done on graph paper.
3. Every problem must be attempted to the best of your ability. Google the concept if you have problems understanding.
4. All algebraic work must be shown, and it should be neat and organized (hint: circle or underline your answers).
5. All assignments should be checked and fully corrected using a red pen before coming to class. Go to **cindyedwards.weebly.com.**
6. *Finally, assess your understanding by filling in the shaded section* ***BEFORE*** *coming to class.*

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| **DATE** | **DAILY LEARNING TARGETS & OBJECTIVES** | | **INDEPENDENT PRACTICE (HOMEWORK)** | **GRADE** |
| Fri/Mon,  Sept. 28/Oct. 1  **Day 00** | **Test on Unit 1**  What’s The Function Introduction | | Introduction of Unit 2 Worksheet  ***Performance Task due next block*** |  |
| L. Target? | Emoji | What Questions do you still have? | What were your AHA Moments? | |
| Tue/Wed,  Oct. 2/3  **Day 01** | Interpreting Graphs: The Flagpole Problem  Relations, Functions, Domain and Range  ***CAV CONNECTION OCTOBER 3 – Adjusted Schedule*** | | IXL D.2 & D.3 (Smart score of at least 90)  Day 01 Domain and Range Part I  **Start Memorizing the Function Family D & R!** |  |
| L. Target? | Emoji | What Questions do you still have? | What were your AHA Moments? | |
| Thu/Fri,  Oct. 4/5  **Day 02** | Domain and Range Review  Transformation of Functions  ***Quiz next block on the Function Family Members/ D & R*** | | Day 02 Domain and Range Part II  Desmos Activity – Link on Schoology  ***Teacher Work Day Mon., Oct. 8: NO SCHOOL!*** |  |
| L. Target? | Emoji | What Questions do you still have? | What were your AHA Moments? | |
| Tue/Wed,  Oct. 9/10  **Day 03** | Modeling Real World Data with Quadratics (Max/Min)  ***PROGRESS REPORTS OCTOBER 9/***  ***PSAT OCTOBER 10 – Abbreviated Schedule*** | | Day 03 Quadratic Applications |  |
| L. Target? | Emoji | What Questions do you still have? | What were your AHA Moments? | |
| Thu/Fri,  Oct. 11/12  **Day 04** | Graphing Quadratic Functions in Vertex Form | | Day 04 Graphing Quadratics in Vertex Form  ***Factoring Practice Quizzes due by Oct. 17/18 – You must show work!***  IXL A1: AA.2, AA.4, and AA.5 |  |
| L. Target? | Emoji | What Questions do you still have? | What were your AHA Moments? | |
| Mon/Tue,  Oct. 15/16  **Day 05** | Graphing Quadratic Functions (Equivalent Forms)  ***Factoring Practice – HONE IN ON YOUR SKILLS!*** | | Day 05 Graphing Quadratic Functions  ***Continue working on the IXL quizzes!*** |  |
| L. Target? | Emoji | What Questions do you still have? | What were your AHA Moments? | |
| Wed/Thu,  Oct. 17/18\*  **Day 06** | Solving Quadratic Equations by Graphing & Factoring  ***CAV CONNECTION OCTOBER 17 – Adjusted Schedule*** | | Day 06 Solving Quadratic Equations by Graphing & Factoring |  |
| L. Target? | Emoji | What Questions do you still have? | What were your AHA Moments? | |
| Fri/Mon,  Oct. 19/22  **Day 07** | Writing Equations of Quadratic Functions | | Day 07 Writing Equations of Quadratic Functions |  |
| L. Target? | Emoji | What Questions do you still have? | What were your AHA Moments? | |
| Tue/Wed,  Oct. 23/24  **Day 08** | **Review Unit 2A** | | Day 08 Unit 2A Test Review Worksheet |  |
| L. Target? | Emoji | What Questions do you still have? | What were your AHA Moments? | |
| Thu/Fri,  Oct. 25/26  **Day 09** | **Test on Unit 2A** | | **TOTAL POINTS:**  Review Radicals Worksheet |  |

**LEARNING TARGETS:**

**Target 1:** I CAN state the domain and range of any relation or function in set builder and interval notation.

**Target 2:** 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) without a graphing calculator and can write an

equation in all 3 form when given its parts.

**Target 3:** I CANapply knowledge of quadratics in real-life contexts (using the graphing calculator AND Desmos).

**Target 4:** I CAN factor quadratic expressions and solve a quadratic equation over the set of real numbers by factoring.

**GUIDING QUESTION/GLOBAL CONTEXT: PERSONAL & CULTURAL EXPRESSION:**

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

How can we maximize or minimize any situation? For example, how can we control the mosquito population?

**INQUIRY QUESTIONS: Be ready to do an essay on any of these questions on the test day!**

**1. Factual:** What do the zeros/roots of a quadratic function represent on the graph?

**2. Conceptual:** How can the discriminant be used to explore the characteristics of a quadratic model?

**3. Debatable:** Is it appropriate to use more than one quadratic form of the same function to explore a real-life problem

and/or situation?

**BIG IDEAS/ENDURING UNDERSTANDINGS (MATH LAWS WE LIVE BY):**

1. Function models of real life relationships enable predictions to be made.
2. The parameters of a function relate to the transformation of the graph.
3. Quadratic patterns model relationships where a maximum or minimum value occurs.
4. The solutions of a quadratic/polynomial equation are the zeros/roots of its related function.

**ESSENTIAL QUESTIONS:**

1. Why is it important to learn a variety of methods for solving quadratic equations? How do you know which is best?
2. What real life situations model a quadratic function?
3. What can factoring tell you about a quadratic expression, equation, or function?

**SOL OBJECTIVES (2009):**

**AII/T.1d** The student, given rational, radical, or polynomial expressions, will

d)factor polynomials completely**.**

**AII/T.4b** The student will solve, algebraically and graphically quadratic equations over the set of complex numbers. Graphing calculators will be used for solving and for confirming the algebraic solutions.

**AII/T.5** The student will solve nonlinear systems of equations, including linear-quadratic and

quadratic- quadratic, algebraically and graphically. Graphing calculators will be used as a tool to visualize graphs and predict the number of solutions.

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

**AII/T.7 a-d** The student will investigate and analyze functions algebraically and graphically. Key concepts include

a) domain and range, including limited and discontinuous domains and ranges;

b) zeros;

c) x- and y-intercepts;

d) intervals in which a function is increasing or decreasing.