

Algebra 2 Syllabus

School Year: 2017-18

Certificated Teacher: [Click here to enter text.](#)

Desired Results

Course Title: Algebra 2

Credit: ____ one semester (.5) ____x__ two semesters (1.0)

Prerequisites and/or recommended preparation:

Completion of Geometry

Estimate of hours per week engaged in learning activities:

5 hours of class work per week per 18-week semester

Instructional Materials:

All learning activities (resources, assignments, assessments) are contained within or referenced in the student's online course. The online course is accessed via login and password assigned by student's school (web account) or emailed directly to student upon enrollment, with the login website.

Other resources required/Resource Costs:

Other resources required/Resource Costs:

This course requires a MathXL for School account that will be provided by your course instructor. Holt McDougal Geometry 2011 – online videos, examples, and activities.

Course Description:

Building on their work with linear, quadratic, and exponential functions, students extend their repertoire of functions to include poly- nomial, rational, and radical functions. Students work closely with abilities to model situations and to solve equations, including solving quadratic equations over the set of complex numbers and solving exponential equations using the properties of logarithms. The process standards; problems solving, communication and connections apply throughout this course. Through the content and process standards, students will experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. Use of the graphing calculator is an integral part of this course.

Enduring Understandings for Course (Performance Objectives):

What will students understand (about what big ideas) because of the course?

We can use a variety of mathematical tools to describe our world and help solve daily problems.

Course Learning Goals (including WA State Standards, Common Core Standards, and National Standards):

What is the key knowledge and skill needed to develop the desired understandings?

**Algebra 2 Unit 1: Quadratics
Model with Mathematics (SMP4)**

Learning Targets

- Use Quadratic Functions to solve problems in context (Graphs, Data Tables, and Functions) (S-ID.B.6)
- Define appropriate quantities for the purpose of descriptive modeling (N-Q.A.2)
- Fit a Quadratic Function to data (S-ID.B.6)
- Write a function that describes a relationship between two quantities. Determine an explicit expression, a recursive process, or steps for calculation from a context (F-BF.A.1)

Seeing Structure in Mathematics (SMP7)

- Identify and explain the effect on the graph of replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$, and $f(x + k)$ for both positive and negative values of k (F-BF.B.3)
- Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically (A-REI.C.7)

Quadratic Functions

- Solve quadratic equations in one variable; *Solutions may be non-real* (A-REI.B.4)
 - a. Solve quadratic equations by inspection (e.g., for), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation
 - b. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b
- Solve quadratic equations with real coefficients that have complex solutions (N-CN.C.7)
- Write an explicit or recursive expression to represent a quadratic relationship (F-BF.A.1)
- Derive the equation of a parabola given a focus and directrix (G-GPE.A.2)

Complex Numbers

- Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real (N-CN.A.1)
- Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers (N-CN.A.2)

Algebra 2 Unit 2: Polynomials

Learning Targets

Target 2A: Look for and make use of structure (SMP7)

- Use the structure of polynomial expressions to identify ways to rewrite it (A-SSE.A.2)

Target 2B: Construct viable arguments and critique the reasoning of others (SMP3)

- Prove polynomial identities and use them to describe numerical relationships. For example, the polynomial identity $(x^2 + y^2)^2 = (x^2 - y^2)^2 + (2xy)^2$ can be used to generate Pythagorean triples (A-APR.C.4)
- Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$ (A-REI.D.11)

Target 2C: Finding solutions, zeros, and roots of polynomials

- Identify zeros of polynomials when suitable factorizations are available (A-APR.B.3)
- Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a , the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $x - a$ is a factor of $p(x)$ (A-APR.B.2)
- Understand the relationship between zeros and factors of polynomials (A-APR.B)

- Find solutions (where $f(x) = g(x)$) approximately using tables of values or successive approximations. Include linear, polynomial, absolute value functions (A-REI.D.11)

Target 2D: Graphically analyze polynomials

- Use the zeros to construct a rough graph of the function defined by the polynomial (A-APR.B.3)
- Represent and solve equations and inequalities graphically (A-REI.D)
- Find solutions (where $f(x) = g(x)$) approximately using technology to graph the functions. Include linear, polynomial, absolute value functions (A-REI.D.11)
- Interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship (F-IF.4)
- Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. Graph polynomial functions, identifying zeros when suitable factorizations are available and using end behavior. (F-IF.7c)
- Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions) (F-IF.9)

Algebra 2 Unit 3: Exponential and Logarithmic Functions

Learning Targets

Target 3A: Model with Mathematics (SMP 4)

- Determine an explicit expression or steps for calculation from a context. **(F-BF.A.1.a)**
- Construct exponential functions, including geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). **(F-LE.A.2)**
- Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. **(S-ID.B.6)**
- Fit a function to the data; use functions fitted to data to solve problems in the context of the data. *Use given functions or choose a function suggested by the context.* **(S-ID.B.6.a)**

Target 3B: Using Exponential and Logarithmic Functions – Equivalent forms

- Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. **(A-SSE.B.3)**
- Use the properties of exponents to transform expressions for exponential functions. *For example the expression 1.15^t can be rewritten as $(1.15^{1/12})^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.* **(A-SSE.B.3.c)**
- Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. **(F-IF.C.8)**
- Use the properties of exponents to interpret expressions for exponential functions. *For example, identify percent rate of change in functions such as $y = (1.02)^t$, $y = (0.97)^t$, $y = (1.01)^{12t}$, $y = (1.2)^{t/10}$, and classify them as representing exponential growth or decay.* **(F-IF.C.8.b)**

Target 3C: Understanding Representations of Logarithmic and Exponential Functions

- For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.* **(F-IF.B.4)**
- Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. **(F-IF.B.6)**
- Graph exponential and logarithmic functions, showing intercepts and end behavior. **(F-IF.C.7.e)**

- Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.* **(F-IF.C.9)**
- Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.* **(F-BF.A.3)**

Target 3D: Solving Exponential and Logarithmic Equations

- Create equations and inequalities in one variable and use them to solve problems. **(A-CED.A.1)**
- Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. **(A-REI.D.11)**
- Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents. **(F-BF.B.5)**
- For exponential models, express as a logarithm the solution to $ab^{ct} = d$ where a , c , and d are numbers and the base b is 2, 10, or e ; evaluate the logarithm using technology. **(F.LE.A.4)**

Algebra 2 Unit 4: Rational Functions

Learning Targets

Target 4A: Model with Mathematics (SMP 4)

- Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational functions. **(A-CED.A.1)**
- Write a function that describes a relationship between two quantities. **(F-BF.A)**
- Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model. **(F-BF.A.1b)**
- Build new functions from existing functions. Find inverse functions. Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. For example, $f(x) = 2x^3$ or $f(x) = \frac{(x+1)}{(x-1)}$ for $x \neq 1$. **(F-BF.A.4a)**

Target 4B: Structure of Expressions (SMP 7)

- Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$. **(A-SSE.A.2)**
- Rewrite simple rational expressions in different forms; write $\frac{a(x)}{b(x)}$ in the form $q(x) + \frac{r(x)}{b(x)}$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system. **(A-APR.D.6)**

Target 4C: Solving with Rational Equations

- Understand solving equations as a process of reasoning and explain the reasoning **(A-REI.A)**

- Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. **(A-REI.A.1)**
- Solve simple rational equations in one variable, and give examples showing how extraneous solutions may arise. **(A-REI.A.2)**

Target 4D: Graphing Rational Functions

- Represent and solve equations and inequalities graphically. Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. **(A-REI.D.11)**
- Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. **(F-IF.C.7)**
- Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior. **(F-IF.C.7d)**

Algebra 2 Unit 5: Radical Functions

Learning Targets

Target 5A: Constructing Viable Arguments

- Define appropriate quantities for the purpose of descriptive modeling. **(N-Q.A.2)**
- Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. **(A-REI.A.1)**

Target 5B: Graphing Radical Functions

- Relate the domain of a function to its graph, and, when applicable, to the quantitative relationship it describes. **(F-IF.B.5)**
- Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.* **(F-BF.B.3)**
- For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. ★ **(F-IF.B.4)**

Target 5C: Solving Radical Equations

- Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise. **(A-REI.A.2)**
- Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. For example, $f(x) = 2x^3$ or $f(x) = (x+1)/(x-1)$ for $x \neq 1$ **(F-BF.B.4.a)**

Target 5D: Seeing Structure in Simplifying Radical Expressions

- Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For

example, we define $5^{1/3}$ to be the cube root of 5 because we want $(5^{1/3})^3 = 5(1/3)^3$ to hold, so $(5^{1/3})^3$ must equal 5. **(N-RN.A.1)**

- Rewrite expressions involving radicals and rational exponents using the properties of exponents. **(N-RN.A.2)**

Algebra 2 Unit 6: Statistics

Learning Targets

Target 6A: Make sense of problems and persevere in solving them. (SMP 1)

- Understand statistics as a process for making inferences about population parameters based on a random sample from that population. (S-IC.A.1)
- Evaluate reports based on data. (S-IC.B.6)

Target 6B: Construct a viable argument and critique the reasoning of others (SMP 3)

- Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. *For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?* (S-IC.A.2)
- Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant. (S-IC.B.5)

Target 6C: Understanding Data Using Statistics

- Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. (S-IC.B.3)
- Use data from a sample survey to estimate a population mean or proportion; develop a margin of error with simulation models for random sampling. (S-IC.B.4)
- Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve. (S-ID.A.4)

Algebra 2 Unit 7: Trigonometric Functions

Learning Targets

Target 7A: Modeling

- Define appropriate quantities for descriptive modeling. **(N-Q.A.2)**
- For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. ★ **(F-IF.B.4)**
- Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. ★ **(F-IF.B.6)**
- Model periodic phenomena with trigonometric functions. Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline. ★ **(F-TF.B.5)**

Target 7B: Seeing Structure and Attending to Precision

- Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. ★ Graph trigonometric functions showing period, midline, and amplitude. **(F-IF.C.7.e)**

- Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). **(F-IF.C.9)**
- Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.* **(F-BF.B.3)**

Target 7C: Graphing Trigonometric Functions

- For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. ★ **(F-IF.B.4)**
- Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.* **(F-BF.B.3)**
- Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. ★ Graph trigonometric functions showing period, midline, and amplitude. **(F-IF.C.7.e)**

Target 7C: The Unit Circle

- Extend the domain of trigonometric functions using the unit circle. Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle. **(F-TF-A.1)**
- Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle. **(F-TF-A.2)**
- Prove and apply trigonometric identities. Prove the Pythagorean Identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle. **(F-TF-C.8)**

Evidence of Assessment

What evidence will be collected to determine whether or not the understandings have been developed, the knowledge and skill attained, and the state standards met? [Anchor the work in performance tasks that involve application, supplemented as needed by prompted work, quizzes, observations, and assessments]

Performance Tasks:

- The students will work through a web based math program (MathXL) to master the unit targets based on CCSS-M.
- Once the work is complete in MathXL, the students will assess their knowledge on unit quizzes and end of unit assessment.

Other Evidence (self-assessments, observations, work samples, quizzes, tests and so on):

- Quizzes/Assessments in MathXL
- Unit assessments based on CCSS-M

Types of Learning Activities

Indicate from the table below all applicable learning strategies that may be used in the course.

Direct Instruction	Indirect Instruction	Experiential Learning	Independent Study	Interactive Instruction
<input type="checkbox"/> Structured Overview <input type="checkbox"/> Mini presentation <input type="checkbox"/> Drill & Practice <input type="checkbox"/> Demonstrations <input checked="" type="checkbox"/> Other (List)	<input type="checkbox"/> Problem-based <input type="checkbox"/> Case Studies <input type="checkbox"/> Inquiry <input type="checkbox"/> Reflective Practice <input type="checkbox"/> Project <input type="checkbox"/> Paper <input type="checkbox"/> Concept Mapping <input type="checkbox"/> Other (List)	<input type="checkbox"/> Virt. Field Trip <input type="checkbox"/> Experiments <input checked="" type="checkbox"/> Simulations <input type="checkbox"/> Games <input type="checkbox"/> Field Observ. <input type="checkbox"/> Role-playing <input type="checkbox"/> Model Bldg. <input type="checkbox"/> Surveys <input type="checkbox"/> Other (List)	<input type="checkbox"/> Essays <input checked="" type="checkbox"/> Self-paced computer <input type="checkbox"/> Journals <input type="checkbox"/> Learning Logs <input type="checkbox"/> Reports <input type="checkbox"/> Directed Study <input type="checkbox"/> Research Projects <input checked="" type="checkbox"/> Other (List)	<input checked="" type="checkbox"/> Discussion <input type="checkbox"/> Debates <input type="checkbox"/> Role Playing <input type="checkbox"/> Panels <input type="checkbox"/> Peer Partner Learning <input type="checkbox"/> Project team <input type="checkbox"/> Laboratory Groups <input type="checkbox"/> Think, Pair, Share <input type="checkbox"/> Cooperative Learning <input type="checkbox"/> Tutorial Groups <input type="checkbox"/> Interviewing <input type="checkbox"/> Conferencing <input type="checkbox"/> Other (List)
Other: Click here to enter text.				

Course Learning Goals (including WA State Standards, Common Core Standards, and National Standards):

Learning Activities

Learning activities (as provided in the student friendly course schedule posted in online course) and contains the scope and sequence of performance tasks, activities and assessments by semester, unit, and weeks.

These learning activities are aligned with the successful completion of the course learning goals and progress towards these learning activities will be reported monthly on a progress report.

Algebra 2A First Semester Learning Activities

Unit 1 Quadratics

This unit extends students' previous work with quadratic relations and equations. In the context of quadratics, students are introduced to the complex number system and complex solutions (**N-CN.A.1 and 2**). Students use finite differences to fit quadratic models to data. They also make connections among the general, vertex, and factored forms of a quadratic function, and they learn how to transform between forms to obtain needed information about the function.

Unit 2 Polynomials

This unit builds on students' previous work with linear and quadratic functions to help students make sense of the behavior they see in the larger family of polynomial functions. The unit leads students to understand that polynomials form a system analogous to the integers; namely, they are closed under operations of addition,

subtraction, and multiplication. Students learn how polynomials model some behavior with varying rates of change, and they see how the degree of the polynomial relates to the number of real zeros and the number of local extreme values of the polynomial function. Students then apply this knowledge to choose appropriate models for situations based on how quantities in this situation vary with emphasis on short term and end behavior. Understanding polynomial functions is useful for future work in calculus and for curve fitting in statistics and computer science.

Unit 3 Exponentials and Logarithms

In this unit students strengthen their understanding of the inverse relationship while making connections between exponential and logarithmic functions. Students learn how to use exponential functions to model changes in the values of the dependent variable produced through repeated multiplication by a positive constant. Through fitting models to data, students solidify their understanding of the characteristics of an exponential function. Students then numerically and graphically investigate the transcendental number e and learn about its role in the compounding of interest. Students develop properties of logarithms and use these properties to solve problems algebraically. Finally, students explore the effects of the parameters on the graphs of exponential and logarithmic functions.

Algebra 2B Second Semester Learning Activities

Unit 4 Rationals

The study of rational functions of the form $f(x) = p(x)/q(x)$, where $p(x)$ and $q(x)$ are polynomials, naturally builds from the previous unit. Students learn about the general characteristics and behavior of rational functions and apply their knowledge of transforming functions to create and understand graphs of rational functions. Students formulate rational equations that arise from rational functions. They learn strategies for identifying and applying the algebraic skills needed to solve these rational equations in a variety of situations.

Unit 5 Radicals

Students explore transformations on the parent square root function to model data and they formulate equations arising from square root functions. They explore solutions for these equations using tables and graphs, and they learn how the inverse relationship between square root and quadratic functions facilitates solving these equations analytically. They also investigate the notion of extraneous roots.

Unit 6 Statistics

Drawing correct conclusions from data is highly dependent on how the data are collected. In particular, "cause and effect" conclusions can only arise from properly conducted experiments, in which the researcher actively imposes a treatment. In this unit students study design of experiments based on three fundamental principles: control of outside variables, randomization, and replication within the experiment. This unit is an introduction to these and other key issues in experimental design.

Unit 7 Trigonometry

Students are introduced to periodic functions and define three trigonometric functions: $y = \sin \alpha$, $y = \cos \alpha$ and $y = \tan \alpha$. Students learn to transform these functions just as they have transformed other types of functions. The parameter that affects the period of these functions is explored. Radians are introduced in

connection to circular functions and trigonometric functions. By the end of this unit, students will have a conceptual understanding of how these functions are generated and used to model various situations.

1st Semester Algebra 2 Learning Activities

Week 1

- Get Logged into Blackboard
- Complete the Welcome Unit
- The work in this course is comprised of watching instructional videos in blackboard and then doing corresponding assignments in the program called MathXLforSchool. In order to receive your account for mathxforschool you need to complete the Welcome Unit and contact your teacher.

Week 2

- **Start Unit 1**
- Watch the videos on **Graphing Quadratic Functions** and then complete the assignment in mathxforschool.
- Watch the videos on **Quadratic Functions in Standard Form** and then complete the assignment in mathxforschool.

Week 3

- Watch the videos on **Parabolas** and then complete the assignment in mathxforschool.
- Watch the videos on **Factoring Review (optional)** and then complete the assignment in mathxforschool.
- Watch the videos on **Solving Quadratics by Factoring and Graphing** and then complete the assignment in mathxforschool.

Week 4

- Watch the videos on **Completing the Square** and then complete the assignment in mathxforschool.
- **Unit 1 Mid Unit Quiz** complete the quiz in mathxforschool.

Week 5

- Watch the videos on **Complex Numbers and Roots** and then complete the assignment in mathxforschool.
- Watch the videos on **The Quadratic Formula** and then complete the assignment in mathxforschool.

Week 6

- Watch the videos on **Quadratic Inequalities** and then complete the assignment in mathxforschool.
- Watch the videos on **Curve Fitting with Quadratic Models** and then complete the assignment in mathxforschool.

Week 7

- Watch the videos on **Operations with Complex Numbers** and then complete the assignment in mathxforschool.
- **Unit 1 Review** complete the assignment in mathxforschool.
- **Unit 1 Assessment** complete the assessment in mathxforschool.

Week 8 Start Unit 2

- Watch the videos on **Polynomials and** then complete the assignment in mathxforschool.
- Watch the videos on **Multiplying Polynomials** and then complete the assignment in mathxforschool.

Week 9

- Watch the videos on **Dividing Polynomials** and then complete the assignment in mathxforschool.
- Watch the videos on **Factoring Polynomials** and then complete the assignment in mathxforschool.

Week 10

- **Unit 2 Mid Unit Quiz** complete the quiz in mathxforschool.
- Watch the videos on **Finding Real Roots** and then complete the assignment in mathxforschool.

Week 11

- Watch the videos on **Writing Polynomials Given the Roots** and then complete the assignment in mathxforschool.
- Watch the videos on **Graphs of Polynomials** and then complete the assignment in mathxforschool.

Week 12

- **Unit 2 Review** complete the assignment in mathxforschool.
- **Unit2 Assessment** complete the assessment in mathxforschool.

Week 13 Start Unit 3

- Watch the videos on **Exponential Functions Growth and Decay** and then complete the assignment in mathxforschool.
- Watch the videos on **Inverses of Relations and Functions** and then complete the assignment in mathxforschool.

Week 14

- Watch the videos on **Logarithmic Functions** and then complete the assignment in mathxforschool.
- Watch the videos on **Properties of Logarithms** and then complete the assignment in mathxforschool.

Week 15

- **Unit 3 Mid Unit Quiz** complete the quiz in mathxforschool.
- Watch the videos on **Exponential and Logarithmic Equations** and then complete the assignment in mathxforschool.

Week 16

- Watch the videos on **The Natural Base, e** and then complete the assignment in mathxforschool.
- Watch the videos on **Transforming Exponential and Logarithmic Models** and then complete the assignment in mathxforschool.

Week 17

- Watch the videos on **Curve Fitting with Exponential and Logarithmic Models** and then complete the assignment in mathxforschool.
- **Unit 3 Review** complete the assignment in mathxforschool.

Week 18

- **Unit 3 Assessment** complete the assessment in mathxforschool.

2nd Semester Algebra 2 Learning Activities

Week 1

- Get Logged into Blackboard
- Complete the Welcome Unit
- The work in this course is comprised of watching instructional videos in blackboard and then doing corresponding assignments in the program called MathXLforSchool. In order to receive your account for mathxforschool you need to complete the Welcome Unit and contact your teacher.

Week 2

- **Start Unit 4**
- Watch the videos on **Variation Functions** and then complete the assignment in mathxforschool.
- Watch the videos on **Multiplying and Dividing Rational Expressions** and then complete the assignment in mathxforschool.

Week 3

- Watch the videos on **Adding and Subtracting Rational Expressions** and then complete the assignment in mathxforschool.
- **Unit 3 Mid Unit Quiz** complete the quiz in mathxforschool.

Week 4

- Watch the videos on **Rational Functions** and then complete the assignment in mathxforschool.
- Watch the videos on **Solving Rational Equations and Inequalities** and then complete the assignment in mathxforschool.

Week 5

- **Unit 4 Review** complete the assignment in mathxforschool.
- **Unit4 Assessment** complete the assessment in mathxforschool.

Week 6 Start Unit 5

- Watch the videos on **Radical Expressions and Rational Exponents** and then complete the assignment in mathxforschool.
- Watch the videos on **Radical Functions** and then complete the assignment in mathxforschool.

Week 7

- Watch the videos on **Solving Radical Equations and Inequalities** and then complete the assignment in mathxforschool.
- **Unit 5 Review** complete the assignment in mathxforschool.

Week 8

- **Unit 5 Assessment** complete the assessment in mathxforschool.
 - **Start Unit 6**

- Watch the videos on **Introduction to the Practice of Statistics** and then complete the assignment in mathxforschool.

Week 9

- Watch the videos on **Observational Studies vs. Designed Experiments** and then complete the assignment in mathxforschool.
- Watch the videos on **Simple Random Sampling** and then complete the assignment in mathxforschool.

Week 10

- Watch the videos on **Other Effective Sampling Methods** and then complete the assignment in mathxforschool.
- **Unit 6 Mid Unit Quiz** complete the quiz in mathxforschool.

Week 11

- Watch the videos on **Organizing and Summarizing Data** and then complete the assignment in mathxforschool.
- Watch the videos on **Measures of Central Tendency** and then complete the assignment in mathxforschool.

Week 12

- Watch the videos on **Measures of Dispersion** and then complete the assignment in mathxforschool.
- Watch the videos on **Fitting to Normal Distribution** and then complete the assignment in mathxforschool.

Week 13

- **Unit 6 Review** complete the assignment in mathxforschool.
- **Unit 6 Assessment** complete the assessment in mathxforschool.

Week 14 Start Unit 7

- Watch the videos on **Right-Angle Trigonometry** and then complete the assignment in mathxforschool.
- Watch the videos on **Angles of Rotation** and then complete the assignment in mathxforschool.

Week 15

- Watch the videos on **The Unit Circle** and then complete the assignment in mathxforschool.
- Watch the videos on **Law of Sines** and then complete the assignment in mathxforschool.

Week 16

- Watch the videos on **Law of Cosines and** then complete the assignment in mathxforschool.
- **Unit 7 Mid Unit Quiz** complete the quiz in mathxforschool.

Week 17

- Watch the videos on **Graphs of Sine and Cosine** and then complete the assignment in mathxforschool.
- Watch the videos on **Fundamental Trigonometric Identities** and then complete the assignment in mathxforschool.

Week 18

- **Unit 7 Review** complete the assignment in mathxforschool.
- **Unit 7 Assessment** complete the assessment in mathxforschool.