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| **ALGEBRA I SCOPE & SEQUENCE 2016 - 2017** | | |
| **Unit 1** | | |
| ***Chapter 1:*** *Expressions, Equations and Functions (6 days)* | | |
| Essential Question(s): | | How can mathematical ideas be represented?  How can I represent quantities, patterns and relationships? |
| Student Friendly Objectives(s): | | * **1.1** I can write algebraic expressions (A.SSE.1a, A.SSE.2/ A2AA1, A2BA1) * **1.2** I can evaluate expressions using the order of operations (A.SSE.1b, A.SSE.2/ A2AA1, A2BA1) * **1.3** I can describe the properties of equality and identity (A.SSE.1b, A.SSE.2/ A2AA1, A2BA1) * **1.4** I can use the distributive property to simplify and evaluate expressions (A.SSE.1a, A.SSE.2/ A2AA1, A2BA1)***/*1.5** I can solve equations with one variable * **Review** * ***Test*** |
| ***Chapter 2:*** *Solving Equations (10 days)* | | |
| Essential Question(s): | | Can equations that appear to be different be equivalent?  How can I solve equations? |
| Student Friendly Objectives(s): | | * **2.1** I can translate sentences into equations and inequalities (A.CED.1/ A2AA1) * **2.2** I can solve one-step equations (A.REI.1, A.REI.3/ A2CA1, A2AA1) * **2.3** I can solve multi-step equations with variables on one side(A.REI.1, A.REI.3/ A2CA1, A2AA1) * **Quiz 2.1-2.3** * **2.4** I can solve equations with variables on both sides (A.REI.1, A.REI.3/ A2CA1, A2AA1) * **2.5** I can solve equations involving absolute value (A.REI.1, A.REI.3/ A2CA1, A2AA1) * **2.6** I can compare ratios (A.REI.1, A.REI.3/ A2CA1, A2AA1)/**2.6** I can solve proportions (A.REI.1, A.REI.3/ A2CA1, A2AA1) * **2.8** I can solve literal equations for a variable (A.CED.4, A.REI.3/ A2BA1, A2AA1) * **Review** * ***Test*** |
| ***Chapter 5 :*** *Linear Inequities (4 days)* | | |
| Essential Question(s): | How do I represent relationships between quantities that are not equal?  How does solving linear inequalities compare to equations? | |
| Student Friendly Objectives(s): | * **5.1** I can graph and identify solutions of one-step linear inequalities (A.CED.1, A.REI.3/ A2AA1)/**5.2** I can solve two-step linear inequalities (A.CED.1, A.REI.3/ A2AA1) * **5.3** I can solve multi-step linear inequalities (A.CED.1, A.REI.3/ A2AA1) * **Review (UNIT 1 Review)** * **Mini Test**   **Use this review day to add extend items as needed**   * **5.4** I can solve compound inequalities (A.CED.1, A.REI.3/ A2AA1) **EXTEND** * **5.5** I can solve absolute value inequalities (A.CED.1, A.REI.3/ A2AA1) **EXTEND** | |
| End of Unit 1 | ***BENCHMARK TEST (21 days)*** | |
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| ***UNIT 2*** | | |
| ***Chapter 1 and Chapter 3: Linear Function (8 days)*** | | |
| Essential Question(s): | What are characteristics of graphs of linear equations?  How can I represent and describe functions? | |
| Student Friendly Objectives(s): | * **1.6** I can represent and interpret graphs of relations (A.REI.10, F.IF.1) * **1.7** I can determine whether a relation is a function and find function values (F.IF.1, F.IF.2) * **1.8** I can interpret graphs of functions, including intercept, positive, negative, increasing and decreasing behavior (F.IF.4) * **3.1** I can graph linear equations using a table (F.IF.4, F.IF.7a/ A1DA1, A4AA1)   Intro to 2 variables and tables   * **3.5** I can recognize and relate arithmetic sequences to linear functions (F.BF.2, F.LE.2/ A1BA1)/**3.6** I can write an equation for a proportional relationship and write and equation for non-proportional relationships. * **3.3** I can find rate of change and slope of a line (F.IF.6, F.LE.1a/ A4AA1, A3AA1) * **Review** * **Test**   Embedded   * **3.2** Solving Linear Equation by Graphing**…**one variable | |
| ***Chapter 4: Equations of Linear Functions (10 days)*** | | |
| Essential Question(s): | How can I write equations of lines?  What information does the equation of a line give me? | |
| Student Friendly Objectives(s): | * **4.1** I can graph the equation of a line in slope-intercept form (F.IF.7a, S.ID.7/ A1DA1, D3AA1) * **Extension 4.1** * **4.2** I can write an equation in slop intercept form * **4.3** I can write the equation of a line of point-slope form (F.IF.2, F.LE.2/ A1BA1) * **Quiz 4.1-4.3** * **3.1** I can graph the equation of a line in standard form (F.IF.4, F.IF.7a/ A1DA1, A4AA1) (x & y intercept and standard form) * **4.4** I can write equations of parallel and perpendicular lines (F.LE.2, S.ID.7/ A1BA1, D3AA1) * **5.6** I can graph linear inequalities with two variables (A.CED.3, A.REI.12/ A2AA1, A2DA1)/**EXTENSION 5.6** * **Review** * **Test** | |
| ***Chapter 6:Systemsof Linear Equations (6 days)*** | | |
| Essential Question(s): | What methods do I have to solve systems of equations?  How can system of equations model real world situations? | |
| Student Friendly Objectives(s): | * **6.1** I can solve systems of equations by graphing (A.CED.3, A.REI.6/ A2DA1) * **6.2** I can solve systems of equations by substitution (A.CED.3, A.REI.6/ A2DA1) * **6.3** I can solve systems of equations by elimination (A.CED.2, A.REI.6/ A2DA1) * **6.4** I can solve systems of equations by elimination with multiplication (A.CED.2, A.REI.6/ A2DA1) * **Review** * **Project**   Embedded throughout all units   * **6.5** I can solve real-life applications using systems of equations (A.REI.6/ A2DA1, A3AA1 | |
| ***Chapter 7: Exponential Functions (6 days)*** | | |
| Essential Question(s): | What are characteristics of graphs of exponential functions? | |
| Student Friendly Objectives(s): | * **7.5** I can graph exponential functions and identify data that display exponential behavior. * **7.6** I can solve problems involving exponential growth and solve problems involving exponential decay. * **7.7** I can identify and generate geometric sequences and relate geometric sequences to exponential functions. * **7.8** I can use a recursive formula to list terms in a sequence and write recursive formulas for arithmetic and geometric sequences. * **Review** * **Test** | |
| ***End of Unit 2 Benchmark 2 (31 days)*** | | |
| ***UNIT 5*** | | |
| ***Chapter 9: Quadratic Functions and Equations (6 days)*** | | |
| Essential Question(s): | What are characteristics of the graphs of quadratic functions?  How can I solve a quadratic equation? | |
| Student Friendly Objectives(s): | * **9.1** I can graph and identify characteristics of the graphs of quadratic equations (F.IF.4, F.IF.7a/ A4AA1) * **9.2** I can solve quadratic equations by graphing (A.REI.4b, F.IF.7a/ A2CA1, A4AA1) * **9.3** I can graph transformations of quadratic equations (A.SSE.3b, F.IF.7a/ A2BA1, A4AA1) * **9.7** I can identify and graph step functions and Identify and graph absolute value and piecewise-defined functions./**10.1** I can graph and analyze dilations of radical functions and graph and analyze reflections and translations of radical functions. * **Review** * **Test**   Embed throughout the chapter   * **9.6** Analyzing functions with successive Differences (identifying graphs based on the given data) | |
| ***End of Unit 5 Benchmark 3 (7 days)*** | | |
| ***UNIT 4*** | | |
| ***Chapter 7: Exponents (5 days)*** | | |
| Essential Question(s): | What are the properties of Exponents? | |
| Student Friendly Objectives(s): | * **7.1** I can multiply exponents with the same base (A.SSE.2, F.IF.8b/ A2BA1)/**7.1** I can raise an exponent to a power (A.SSE.2, F.IF.8b/ A2BA1) * **7.2** I can divide exponents with the same base (A.SSE.2, F.IF.8b/ A2BA1)/**7.2** I can simplify rational exponents (N.RN.1, N.RN.2/ A2BA1) * **7.3** Rational Exponents * **Review** * **Test** | |
| ***Chapter 8: Quadratic Expressions and Equations (PART 1) (6 days)*** | | |
| Essential Question(s): | When could a non-linear function be used to model a real-world situation?  Can two algebraic expressions that appear to be different be equivalent? | |
| Student Friendly Objectives(s): | * **8.1** I can classify, add, and subtract polynomials (A.SSE.1a, A.APR.1/ A2AA1, A2BA1) * **8.2** I can multiply a polynomial by a monomial (A.APR.1/ A2AA1, A2BA1) * **8.3** I can multiply polynomials (A.APR.1/ A2AA1, A2BA1) * **8.4** I can factor using the distributive property (A.SSE.2, A.SSE.3a/ A2BA1) * **Review** * **Test** | |
| ***Chapter 8: Quadratic Expressions and Equations (PART 2) (6 days)*** | | |
| Essential Question(s): | When could a non-linear function be used to model a real-world situation?  Can two algebraic expressions that appear to be different be equivalent? | |
| Student Friendly Objectives(s): | * **8.5** I can factor and solve quadratic equations (A.SSE.3a, A.REI.4b/ A2BA1, A2CA1) * **8.6** I can factor and solve quadratic equations with a leading coefficient (A.SSE.3a, A.REI.4b/ A2BA1, A2CA1) * **8.7** I can factor trinomials of the form . I can solve equations of the form * **8.8** I can factor binomials that are the difference of squares and use the difference of squares to solve equations. * **Review** * **Test**   **If time allows add in these 2 sections**   * **8.9** Factor the perfect square trinomials and solve equations involving perfect squares./**9.4** Complete the square to write perfect square trinomials and solve quadratic equations by completing the square. * **9.5** I can solve quadratic equations by using the Quadratic Formula. I can use the discriminant to determine the number of solutions of a quadratic equation. | |
| ***Chapter 10*** | | |
| Essential Question(s): | How can I solve rational and radical equations? | |
| Student Friendly Objectives(s): | * 10.2 I can find real solutions to quadratic equations * 10.4 I can write and interpret quadratic equations and inequalities * 11.2 I can write and intere * 11.8 | |
| ***End of Unit 4 Benchmark 3 (days)*** | | |
| ***UNIT 4*** | | |
| ***AML/Seminar time Statistics*** | | |
| Essential Question(s): | How are statistics and probability used in the real world? | |
| Student Friendly Objectives(s): | ***1st quarter***   * ***Review with prerequisites***   ***2nd quarter***   * **0*.*13** * **12.3** I can describe distributions of data (S.ID.2, S.ID.3) * **12.4** I can compare sets of data (S.ID.2, S.ID.3) * **Extension 12.7**  I can find the probability of compound events (S.ID.2, S.ID.3) * **Extension 12.8**   ***3rd quarter***   * **Extension 4.5** * **4.6**   ***4th quarter***   * EOC prep | |