

BASIC ALGEBRA

Course Description:

In Basic Algebra, students will apply the four major operations of addition, subtraction, multiplication, and division to whole numbers, real numbers, decimals, fractions, and percents. The students will calculate perimeter, area, and volume of two and three-dimensional figures. The students will solve proportions, linear equations, linear inequalities, average problems, exponential and root problems and apply techniques that will prepare them for Algebra I.

Review Unit 0 - Rational Numbers and Integers

As evidenced based on classroom assessments, the student is able to:

- LT.0.1 Add and subtract integers [7.NS.A.1.A, 7.NS.A.1.B, 7.NS.A.1.C]
- LT.0.2: Multiply and divide integers [7.NS.A.2.A]
- LT.0.3: Add and subtract rational numbers [5.NF.A.1, 7.NS.A.1.D]
- LT.0.4: Multiply and divide rational numbers [5.NF.B.4, 6.NS.A.1, 7.NS.A.2]
- LT.0.5: Use order of operations to simplify numerical expressions [6.EE.A.2]

Unit 1 - Solving Linear Equations

As evidenced based on classroom assessments, the student is able to:

- LT.1.1 Write and solve one-step linear equations[HSA-CED.A.1, HSA-REI.A.1, HSA-REI.B.3]
- LT.1.2: Write and Solve multi step linear equations[HSA-CED.A.1, HSA-REI.A.1, HSA-REI.B.3]
- LT.1.3: Use proportional reasoning and analyze units when solving problems [HSN-Q.A.1, HSN-Q.A.2]
- LT.1.4: Choose an appropriate level of accuracy when calculating with measurements [HSN-Q.A.3]
- LT.1.5: Write and solve equations with variables on both sides - special cases [HSA-CED.A.1, HSA-REI.A.1, HSA-REI.B.3]
- LT.1.6: Write and solve absolute value equations [HSA-CED.A.1, HSA-REI.A.1, HSA-REI.B.3]
- LT.1.7: Rearrange equations and formulas [HSA-CED.A.4]

Unit 2 - Solving Linear Inequalities

As evidenced based on classroom assessments, the student is able to:

- LT.2.1: Write inequalities and represents solutions of inequalities on number lines [HSA-SSE.A.1a, HSA-CED.A.1]
- LT.2.2/2.3 : Write and solve one-step inequalities [HSA-CED.A.1, HSA-REI.B.3]
- LT.2.4: Write and solve multi-step inequalities[HSA-CED.A.1, HSA-REI.B.3]
- LT.2.5: Write and solve compound inequalities [HSA-CED.A.1, HSA-REI.B.3]
- LT.2.6: Write and solve absolute value inequalities [HSA-CED.A.1, HSA-REI.B.3]

Unit 3-Graphing Linear Functions

As evidenced based on classroom assessments, the student is able to:

- LT.3.1 Understand the concept of functions [HSA-IF.A.1]
- LT.3.2 Describe characteristics of functions [HSA-IF.B.4, HSF-IF.C.9]
- LT.3.3 Identify and graph linear functions [HSF-REI.D.10, HSF-IF.B.5, HSF-LE.A.1b]
- LT.3.4 Understand and use function notation [HSA-CED.A.2, HSF-IF.A.1, HSF-IF.A.2, HSF-IF.C.7a, HSF-IF.C.9]
- LT.3.5 Graph and interpret linear equations written in standard form [HSA-CED.A.2, HSF-IF.C.7a]
- LT.3.6 Find the slope of a line and use slope-intercept form [HSA-SSE.A.1a, HSA-CED.A.2, HSF-IF.B.4, HSF-IF.C.7a, HSF-LE.A.1a, HSF-LE.B.5]
- LT.3.7 Graph transformations of linear functions [HSA-CED.A.2, HSF-IF.C.7a, HSF-BF.B.3]
- LT.3.8 Graph absolute value functions [HSA-CED.A.2, HSF-IF.C.7b, HSF-BF.B.3]

Unit 4-Writing Linear Functions

As evidenced based on classroom assessments, the student is able to:

- LT.4.1 Write linear equations using slope-intercept form [HSA-CED.A.2, HSF-BF.A.1a, HSF-LE.A.1b, HSF-LE.A.2]
- LT.4.2 Write linear equations using point-slope form [HSA-CED.A.2, HSF-BF.A.1a, HSF-LE.A.1b, HSF-LE.A.2]
- LT.4.3 Recognize and write linear equations of parallel and perpendicular lines [HSA-CED.A.2, HSF-LE.A.2]
- LT.4.4 Modeling data with a best fit linear equation [HSF-LE.B.5, HSS-ID.B.6a, HSS-ID.B.6c, HSS-ID.C.7]
- LT.4.5 Using technology to analyze and find lines of best fit [HSF-LE.B.5, HSS-ID.B.6a, HSS-ID.B.6b, HSS-ID.B.6c, HSS-ID.C.7, HSS-ID.C.8, HSS-ID.C.9]
- LT.4.7 Graph and write Piecewise Functions [HSA-CED.A.2, HSF-IF.C.7b]

Unit 5-Solving Systems of Linear Equations

As evidenced based on classroom assessments, the student is able to:

- LT.5.1 Solve linear systems by graphing [HSA-CED.A.3, HSA-REI.C.6]
- LT.5.2 Solve linear systems by substitution [HSA-CED.A.3, HSA-REI.C.6]
- LT.5.3 Solve linear systems by elimination [HSA-CED.A.3, HSA-REI.C.5, HSA-REI.C.6]
- LT.5.3.5 Use systems of linear equations to solve real world problems [HSA-CED.A.3, HSA-REI.C.5, HSA-REI.C.6]
- LT.5.4 Solve linear systems with different numbers of solutions [HSA-CED.A.3, HSA-REI.C.6]
- LT.5.5 Solve equations by graphing [HSA-CED.A.3, HSA-REI.D.11]
- LT.5.6 Graphing 2 variable linear inequalities [HSA-CED.A.3, HSA-REI.D.12]
- LT.5.7 Write and graph systems of 2 variable linear inequalities [HSA-CED.A.3, HSA-REI.D.12]

Unit 6-Exponential Functions and Sequences

As evidenced based on classroom assessments, the student is able to:

- LT.6.1 Simplify exponential expressions [HSN-RN.A.2]
- LT.6.2 Write and evaluate the n th root of a number [HSN-RN.A.1, HSN-RN.A.2]
- LT.6.3 Graph and write exponential functions [HSA-CED.A.2, HSF-IF.C.7e, HSF-BF.A.1a, HSF-LE.A.1a, HSF-LE.A.2, HSS-ID.B.6a]
- LT.6.4 Write and graph exponential growth and decay functions [HSA-SSE.B.3c, HSA-CED.A.2, HSF-IF.C.7e, HSF-IF.C.8b, HSF-BF.A.1a, HSF-BF.A.1b, HSF-LE.A.1c, HSF-LE.A.2]
- LT.6.5 Solve exponential equations [HSA-CED.A.1, HSA-REI.A.1, HSA-REI.D.11]
- LT.4.6/6.6 Identify, extend, and graph arithmetic and geometric sequences [HSF-IF.A.3, HSF-BF.A.1a, HSF-BF.A.2, HSF-LE.A.2]
- LT.6.7 Recursively write sequences [HSF-IF.A.3, HSF-BF.A.1a, HSF-BF.A.2, HSF-LE.A.2]

Unit 7-Polynomials

As evidenced based on classroom assessments, the student is able to:

- LT.7.1 Add and subtract polynomials [HSA-SSE.A.1a, HSA-APR.A.1]
- LT.7.2 Multiply and divide polynomials [HSA-APR.A.1]
- LT.7.3 Use patterns to find products of polynomials [HSA-SSE.A.1a, HSA-APR.A.1]
- LT.7.4 Solve polynomial equations in factored form [HSA-SSE.B.3a, HSA-APR.B.3, HSA-REI.A.1, HSA-REI.B.4b]
- LT.7.5 Factor trinomials of the form $x^2 + bx + c$ [HSA-SSE.A.2, HSA-SSE.B.3a]
- LT.7.6 Factor trinomials of the form $ax^2 + bx + c$ [HSA-SSE.A.2, HSA-SSE.B.3a]
- LT.7.7 Recognize and factor special products [HSA-SSE.A.2, HSA-SSE.B.3a]
- LT.7.8 Factor a polynomial by grouping and recognizing when a polynomial is factored completely [HSA-SSE.A.2, HSA-SSE.B.3a]

Unit 8-Graphing Quadratic Functions

As evidenced based on classroom assessments, the student is able to:

- LT.8.1 Graph and describe functions of the form $f(x) = ax^2$ [HSA-CED.A.2, HSF-IF.B.4, HSF-IF.C.7a, HSF-BF.B.3]
- LT.8.2 Graph and describe functions of the form $f(x) = ax^2 + c$ [HSA-CED.A.2, HSF-IF.C.7a, HSF-BF.A.1b, HSF-BF.B.3]
- LT.8.3 Graph and describe the functions of the form $f(x) = ax^2 + bx + c$ [HSA-CED.A.2, HSF-IF.B.4, HSF-IF.C.7a, HSF-IF.C.9]
- LT.8.4 Graph and describe functions of the form $f(x) = a(x - h)^2 + k$ [HSA-CED.A.2, HSF-IF.B.4, HSF-IF.C.7a, HSF-BF.A.1a, HSF-BF.B.3]
- LT.8.5 Graph and use functions in intercept form $f(x) = a(x - p)(x - q)$ [HSA-SSE.B.3a, HSA-APR.B.3, HSA-CED.A.2, HSF-IF.C.7a, HSF-IF.C.8a,

- LT.8.6 HSF-BF.A.1a]
Compare the characteristics of linear, exponential, and quadratic functions
[HSF-IF.B.6, HSF-IF.C.9, HSF-BF.A.1a, HSF-LE.A.3]

Unit 9-Solving Quadratic Equations

As evidenced based on classroom assessments, the student is able to:

- LT.9.1 Use properties of radicals to write equivalent expressions [HSN-RN.A.2, HSN-RN.B.3]
LT.9.2 Use graphs to solve quadratic equations and find zeros of functions
[HSF-IF.B.4, HSF-IF.C.7a, HSS-ID.B.6a]
LT.9.3 Solve quadratic equations using square roots. [HSA-CED.A.1, HSA-CED.A.4, HSA-REI.B.4b]
LT.9.4 Solve quadratic equations and find maximum and minimum values of quadratic functions by completing the square [HSA-SSE.B.3b, HSA-CED.A.1, HSA-REI.B.4a, HSA-REI.B.4b, HSF-IF.C.8a]
LT.9.5 Use the quadratic formula and its discriminant to solve and analyze quadratic equations [HSA-CED.A.1, HSA-REI.B.4a ,HSA-REI.B.4b]
LT.9.6 Solve nonlinear systems of equations graphically and algebraically [HSA-REI.C.7, HSA-REI.D.11]

Unit 11-Stats

As evidenced based on classroom assessments, the student is able to:

- LT.11.1 Calculating measures of central tendency and variation [HSS-ID.A.3]
LT.11.2 Make and interpret box-and-whisker plots for data sets [HSS-ID.A.1, HSS-ID.A.3]
LT.11.3 Describe and compare shapes of distributions [HSS-ID.A.1, HSS-ID.A.2, HSS-ID.A.3]
LT.11.4 Use two-way tables to represent data [HSS-ID.B.5]
LT.11.5 Use appropriate data displays to represent situations [HSN-Q.A.1, HSS-ID.A.1]

West Salem High School is a Target-Based Grading and Reporting School. The learning targets above appear in the Skyward gradebook. Teachers provide feedback on each learning target to parents and students via the Skyward gradebook using a score of 3 (Proficient), 2 (Approaching), 1 (Needs Support), or 0 (No Evidence).