

Grade 7 Accelerated Mathematics

Course Description:

This rigorous course is an introduction to Algebra. The topics covered include, but are not limited to: Equations, Transformations, Angles and Triangles, Graphing and Writing Linear Equations, Systems of Linear Equations, Data Analysis and Displays, Functions, Exponents and Scientific Notation, Real Numbers, and the Pythagorean Theorem, and Volume and Similar Solids.

Unit 1 - Equations

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

- 1.0 Fluency, accuracy, and precision
- 1.1 Write and solve one-step equations [7.EE.B.4a]
- 1.2 Write and solve multi-step equations [7.EE.B.4a]
- 1.3 Write and solve equations with variables on both sides [7.EE.B.4a]
- 1.4 Solve literal equations for given variables [7.EE.B.4a]

Unit A - Inequalities

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

- A.4 Write inequalities and represent solutions of inequalities on number lines [7.EE.B.4b]
- A.5 Write and solve inequalities using addition or subtraction [7.EE.B.4b]
- A.6 Write and solve inequalities using multiplication or division [7.EE.B.4b]
- A.7 Write and solve two-step inequalities [7.EE.B.4b]

Unit D-Geometric Shapes and Angles

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

- D.1 Find the circumference of a circle [M.7.G.B.4]
- D.2 Find the area of a circle [M.7.G.B.4]
- D.3 Find perimeters and areas of composite figures
- D.4 Use facts about angle relationships to find unknown angle measures [M.7.G.B.5]

Unit E - Surface Area and Volume

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

- E.1 Find the surface area of a prism [M.7.G.B.6]
- E.2 Find the surface area of a cylinder [M.7.G.B.6]
- E.3 Find the surface area of a pyramid [M.7.G.B.6]
- E.4 Find the volume of a prism [M.7.G.B.6]
- E.5 Find the volume of a pyramid [M.7.G.B.6]
- E.6 Describe the cross-sections of a solid [M.7.G.A.3]

Unit 2 - Transformations

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

- 2.1 Translate figures in the coordinate plane [M.8.G.A.1, M.8.G.A.3]
- 2.2 Reflect figures in the coordinate plane [M.8.G.A.1, M.8.G.A.3]
- 2.3 Rotate figures in the coordinate plane [M.8.G.A.1, M.8.G.A.3]
- 2.4 Understand the concept of congruent figures [M.8.G.A.2]
- 2.5 Dilate figures in the coordinate plane [M.8.G.A.1, M.8.G.A.3]
- 2.6 Understand the concept of similar figures [M.8.G.A.4]
- 2.7 Find perimeters and areas of similar figures [M.8.G.A.4]

Unit 3 - Angles and Triangles

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

- 3.1 Find missing angle measures created by the intersections of lines [M.8.G.A.5]
- 3.2 Understand properties of interior and exterior angles of triangles [M.8.G.A.5]
- 3.3 Find interior angle measures of polygons [M.8.G.A.5]
- 3.4 Use similar triangles to find missing measures [M.8.G.A.5]

Unit 4 - Graphing and Writing Linear Equations

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

- 4.1 Graph linear equations [M.8.EE.B.5]
- 4.2 Find and interpret the slope of a line [M.8.EE.B.5]
- 4.3 Graph proportional relationships [M.8.EE.B.5]
- 4.4 Graph linear equations in slope-intercept form [M.8.EE.B.5, M.8.EE.B.6]
- 4.5 Write equations of lines in slope-intercept form [M.8.EE.B.5, M.8.EE.B.6]
- 4.6 Write equations of lines in point-slope form [M.8.EE.B.5, M.8.EE.B.6]

Unit 5-Systems of Linear Equations

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

- 5.1 Understand how to solve systems of linear equations by graphing [M.8.EE.C.8]
- 5.2 Understand how to solve systems of linear equations by substitution [M.8.EE.C.8]
- 5.3 Understand how to solve systems of linear equations by elimination [M.8.EE.C.8]
- 5.4 Solve systems with different numbers of solutions [M.8.EE.C.7]

Unit 6-Data Analysis and Displays

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

- 6.1 Use scatter plots to describe patterns [M.8.SP.A.1]

- 6.2 Use lines of fit to model data [M.8.SPA.2]
- 6.3 Use two-way tables to represent data [M.8.SPA.4]
- 6.4 Use appropriate data displays to represent situations [M.8.SPA.4]

Unit 7-Functions

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

- 7.1 Understand the concept of a function [M.8.FA.1]
- 7.2 Represent functions in a variety of ways [M.8.FA.2]
- 7.3 Use functions to model linear relationships [M.8.FA.3]
- 7.4 Understand differences between linear and nonlinear functions [M.8.FB.4]
- 7.5 Use graphs of functions to describe relationships between quantities [M.8.FB.5]

Unit 8-Exponents and Scientific Notation

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

- 8.1 Use exponents to write and evaluate expressions [M.8.EE.A.1]
- 8.2 Generate equivalent expressions involving products of powers [M.8.EE.A.2]
- 8.3 Generate equivalent expressions involving quotients of powers [M.8.EE.A.2]
- 8.4 Understand the concepts of zero and negative exponents [M.8.EE.A.2]
- 8.6 Understand the concept of scientific notation [M.8.EE.A.3]
- 8.7 Perform operations with numbers written in scientific notation [M.8.EE.A.3]

Unit 9-Real Numbers and the Pythagorean Theorem

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

- 9.1 Understand the concept of a square root of a number [M.8.EE.A.1]
- 9.2 Understand the Pythagorean Theorem [M.8.G.B.6 , M.8.G.B.7]
- 9.3 Understand the concept of a cube root of a number [M.8.NS.A.2]
- 9.5 Understand the concept of irrational numbers [M.8.NS.A.2]
- 9.6 Understand the converse of the Pythagorean Theorem [M.8.G.B.8]

Unit 10 -Volume and Similar Solids

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

- 10.1 Find the volume of a cylinder [M.8.G.C.9]
- 10.2 Find the volume of a cone [M.8.G.C.9]
- 10.3 Find the volume of a sphere [M.8.G.C.9]
- 10.4 Find the surface area and volume of similar solids [M.8.G.C.9]

Unit B-Probability

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

- B.1 Understand how the probability of an event indicates its likelihood [M.7.SP.C.5]
- B.2 Develop probability models using experimental and theoretical probability [M.7.SP.C.6]
- B.3 Find sample spaces and probabilities of compound events [M.7.SP.C.8]
- B.4 Design and use simulations to find probabilities of compound events [M.7.SP.C.8]

Unit C-Statistics

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

- C.1 Understand how to use random samples to make conclusions about a population [M.7.SP.A.1-2]
- C.2 Understand variability in samples of a population [M.7.SP.B.3]
- C.3 Compare populations using measures of center and variation [M.7.SP.B.3]

West Salem Middle 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).