

S. P. ARNETT MIDDLE SCHOOL
COMMON CORE ALIGNED LESSON PLAN TEMPLATE

TEACHER: Ashleigh Richardson

SUBJECT: Mathematics

DATE: January 8-12, 2024

GRADE: 8th

CCSS: Common Core Learning Standard(s) Addressed:

MATH

8.EE.B.6-Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .

8.G.A.3-Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. (Rotations are only about the origin, dilations only use the origin as the center of dilation, and reflections are only over the y -axis and x -axis in Grade 8.)

8.G.A.4-Explain that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. (Rotations are only about the origin, dilations only use the origin as the center of dilation, and reflections are only over the y -axis and x -axis in Grade 8.)

8.G.A.5-Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.

For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.

8.G.B.7-Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

ALGEBRA 1

9-12.A2.A-REI.D.11-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.

9-12.A1.A-REI.D.11-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, piecewise linear (to include absolute value), and exponential functions.

9-12.A1.F-IF.B.4-For linear, piecewise linear (to include absolute value), quadratic, and exponential functions that model 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; and end behavior.

9-12.A1.F-IF.C.9-Compare properties of two functions (linear, quadratic, piecewise linear [to include absolute value] or exponential) 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, determine which has the larger maximum.

Danielson, 1c

Monday 1/8/24

Algebra I

- Bellringer: Study for Quiz
- We Will: Review and discuss questions from the study guide.
- Eureka Math² Module 3: Topic C Quiz
- I Will: Take the Eureka Math² Module 3: Topic C Quiz

Regular Math

- Bellringer: Finding Unknown Side Lengths
- We Will: Determine that right triangles with horizontal and vertical legs and with hypotenuses that lie on the same line are similar triangles.
- Eureka Math² Module 3: Lesson 17: Similar Triangles on a Line
- I Will: Compare my right triangle with my classmates and determine the similarities.

Tuesday 1/9/24

Algebra I

- Bellringer: Write Equations of Functions from Graphs
- We Will: See how translations, reflections, and scaling are related to the transformed graph of a function and its equation.
- Eureka Math² Module 3: Lesson 18: Exploring transformations of the Graphs of Functions
- I Will: Explore transformations of the graphs of functions.

Regular Math

- Bellringer: Practice Questions
- We Will: Ask Questions and Work through review for end of module test.
- Eureka Math² Module 3: Test Review
- I Will: Complete Module 3 Review

Wednesday 1/10/24

Algebra I

- Bellringer: Graphs of Systems of Linear Equations
- We Will: Recognize that the graph of $y = f(x-k)$ is a horizontal translation of the graph of $y = f(x)$
- Eureka Math² Module 3: Lesson 19: Building New Functions – Translations
- I Will: Recognize that the graph of $y = f(x)+k$ is a vertical translation of the graph of $y = f(x)$.

Regular Math

- Bellringer: Study for Test
- We Will: Review any questions from the Study Guide
- Take the Eureka Math² Module 3 Test
- I will: Take the Eureka Math² Module 3 Test and turn it in.

Thursday 1/11/24

Algebra I

- Bellringer: Evaluating Expressions Involving the Absolute Value Function
- We Will: Recognize that the graph of $y = -f(x)$ is a reflection of the graph of $y = f(x)$ across the x-axis.
- Eureka Math² Module 3: Lesson 20: Building new Functions – Reflections
- I Will: Recognize that the graph of $y = f(-x)$ is a reflection of the graph of $y = f(x)$ across the y-axis.

Regular Math

- Bellringer: Study for Test
- We Will: Review any questions from the Study Guide
- Take the Eureka Math² Module 3 Test
- I will: Take the Eureka Math² Module 3 Test and turn it in.

Friday 1/12/24

Algebra I

- Bellringer: Evaluating Expressions Involving the Absolute Value Function
- We Will: Recognize that the graph of $y = kf(x)$, where $|k| > 0$, is a vertical scaling of the graph of $y = f(x)$.
- Eureka Math² Module 3: Lesson 21: Building New Functions – Vertical Scaling
- I Will: Distinguish between graphs that have been vertically stretched and graphs that have been vertically compressed.

Regular Math

- Bellringer: Evaluate Expressions
- We Will: Analyze an equation to make sense of how to solve it.
- Eureka Math² Module 4: Lesson 1: Equations
- I Will: Identify whether an equation is a linear equation.

Danielson, 2c, 3b, 3c,

Resources/Materials: (What texts, digital resources, & materials will be used for this lesson?)

1. Bellringer PDF
2. Other materials embedded in daily lesson/activity plan

Danielson, 2c, 3c