Pacing Guide – Math 8
Trimester 1

Chapter 11 (Transformations)
Geometry
Standards:

- 8.G.1 – I can verify the properties of rotations, reflections and translations of congruent figures.
- 8.G.2 – I can examine figures to determine congruency. I can describe a sequence of transformations between 2 congruent figures.
- 8.G.3 – I can identify resulting coordinates from translations, reflections, dilations and rotations.
- 8.G.4 – I can examine figures to determine similarity. I can describe a sequence of transformations between 2 similar figures.

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Chapter 12 (Angles and Triangles)
Geometry
Standards:

- 8.G.5 – I can informally argue the sum of any triangle's interior angles is 180 and the sum of the 2 opposite interior angles is equal to the exterior angle. I can informally argue that corresponding angles, alternate interior and exterior angles of parallel lines cut by a transversal are congruent. I can informally argue that same side interior and exterior angles of parallel lines cut by a transversal are supplementary.
- 8.EE.5 – I can graph a proportional relationship in a coordinate plane. I can interpret the unit rate of a proportional relationship as the slope of a graph. I can use a graph, table or an equation to determine unit rate. I can use the rate of change to make comparisons.
- 8.EE.6 – I can use similar triangles to prove slope is constant. I can derive the $y=mx+b$ equation from the graph of a line.

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Chapter 14 (Real Numbers and the Pythagorean Theorem)
Number Systems, Expressions and Equations, Geometry
Standards:

- 8.NS.1- I can identify rational and irrational numbers.
- 8.NS.2- I can use rational approximations to compare the size of irrational numbers. I can locate irrational numbers approximately on a number line diagram. I can estimate the value of expressions comparing irrational numbers.
- 8.EE.2 – I can use square and cubed root symbols to represent solutions to equations. I can evaluate square roots and cubed roots.
- 8.G.6 – I can explain a proof of the Pythagorean Theorem and its converse.
- 8.G.7 – I can apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
- 8.G.8 – I can apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

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Chapter 15 (Volume and Similar Solids)
Geometry
Standards:
- 8.G.9 – I can use the formulas for volumes of cones, cylinders and spheres to solve real-world and mathematical problems.

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Chapter 16 (Exponents and Scientific Notation)
Expressions and Equations
Standards:
- 8.EE.1 – I can apply the properties of integer exponents to generate equivalent expressions.
- 8.EE.3 – I can use numbers in scientific notation to estimate very large or very small quantities.
- 8.EE.4 – I can perform operations with numbers expressed in scientific notation.

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Algebra Chapter 1 (Solving Linear Equations)
CED- Creating Equations, REI- Reasoning with Equations and Inequalities, NQ- Number and Quantity
Standards:
- A.CED.1 – I can create equations and inequalities in one variable and use them to solve problems.
- A.CED.4 – I can rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.
- A.REI.1 – I can explain each step in solving simple equations. I can construct viable arguments to justify a solution method.
- A.REI.3 – I can solve linear equations in one variable, including equations with coefficients represented by letters.
- N.Q.1 - I can use units as a way to understand problems and to guide the solution of multi-step problems.
- N.Q.2 - I can define appropriate quantities for the purpose of descriptive modeling.

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Algebra Chapter 2 (Graphing and Writing Linear Equations)
Number and Quantity, Creating Equations, Reasoning with Equations and Inequalities, Functions
Standards:

- N.Q.1 - I can use units as a way to understand problems and to guide the solution of multi-step problems.
- A.CED.2 - I can create equations in two or more variables to represent relationships between quantities.
- A.CED.3 – I can represent constraints by inequalities and interpret solutions as viable or non-viable options in a modeling context.
- A.REI.10 - I can understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
- 8.F.3 - Interpret the equation y=mx+b as defining a linear function, whose graph is a straight line; give examples of equations that are not linear
- 8.F.4 -Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values
- F.IF.7 - I can graph functions expressed symbolically and show key features of the graph.
- F.IF.4 - 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.
- F.IF.6 - Calculate and interpret the average rate of change of a function over a specified interval. Estimate the rate of change from a graph.

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Algebra Chapter 3 (Solving Linear Inequalities)
Creating Equations, Reasoning with Equations and Inequalities, Number and Quantity
Standards:

- N.Q.2 - I can define appropriate quantities for the purpose of descriptive modeling.
- A.CED.1 – I can create equations and inequalities in one variable and use them to solve problems.
- A.CED.3 – I can represent constraints by inequalities and interpret solutions as viable or non-viable options in a modeling context.
- A.REI.3 – I can solve linear equations in one variable, including equations with coefficients represented by letters.
- A.REI.12 – I can graph solutions to a linear inequality in two variables as a half-plan.

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Algebra Chapter 4 (Solving Systems of Linear Equations)
Number and Quantity
Standards:

- N.Q.2 - I can define appropriate quantities for the purpose of descriptive modeling.
- A.CED.3 – I can represent constraints by inequalities and interpret solutions as viable or non-viable options in a modeling context.
- A.REI.5 - Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
- A.REI.6 - I can solve systems of linear equations exactly and approximately, focusing on pairs of linear equations in two variables.
- A.REI.11 - I can explain why the coordinates found are solutions of functions.
- A.REI.12 – I can graph solutions to a linear inequality in two variables as a half-plane
- 8.EE.8 - Analyze and solve pairs of simultaneous linear equations.

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Algebra Chapter 5 (Linear Functions)
Functions
Standards:

- 8.F.1 I can understand that a function is a rule that assigns exactly one output to each input.
- 8.F.2 I can compare properties of two functions represented in different ways (algebraically, graphically, numerically in tables, or by verbal descriptions)
- 8.F.3 I can interpret the equations y=mx+b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.
- 8.F.4 I can construct a function table to model a linear relationship between two quantities. I can determine the rate of change, and initial value of the function from a description of a relationship or two (x,y) values. I can Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
- 8.F.5 I can describe a functional relationship between two quantities by analyzing a graph. I can sketch a graph that exhibits the qualitative features of a function that has been described verbally.
- F.IF.1 - I can understand that a function from one set to another set assigns to each element of the domain exactly one element of the range.
- F.IF.2 - I can use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
- F.IF.3 - I can recognize that sequences are functions, whose domain is a subset of the integers.
- F.IF.5 - I can relate the domain of a function to its graph and to the quantitative relationship is describes.
- F.IF.7 - I can graph functions expressed symbolically and show key features of the graph.
- F.IF.9 - I can compare properties of two functions each represented in a different way.
- F.BF.1 - I can write a function that describes a relationship between two quantities.
- F.BF.2 - I can write arithmetic and geometric sequences and use them to model situations.
- F.BF.3 - I can identify the effect on the graph when replacing integers for specific values.
- F.LE.1 - I can distinguish between situations that can be modeled with linear functions and with exponential functions.
- F.LE.2 - I can construct linear and exponential functions.

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