8th Grade Go Math
Second Nine Weeks
2021- 2022

Curriculum Coverage in 8th Grade Mathematics for the 2019-2020 School Year as Outlined by TN Standards

TN Standards Major Work of the Grade:

- **Radical and integer exponents**
- **Functions**
- **Expressions and Equations**
- **Pythagorean Theorem**

Supporting:

- **Rational Numbers**
- **Transformation**
- **Volume of cylinders, cones, and spheres**
- **Scatterplots**
- **Probability**

The Standards for Mathematical Practice

MP1. Make sense of problems and persevere in solving them.	**MP2. Reason abstractly and quantitatively.**	**MP3. Construct viable arguments and critique the reasoning of others.**	**MP4. Model with mathematics.**
MP5. Use appropriate tools strategically.	**MP6. Attend to precision.**	**MP7. Look for and make use of structure.**	**MP8. Look for and express regularity in repeated reasoning.**

TN Standards	Learning Outcomes	Instructional Focus	Content Resources
Functions (Allow 9 weeks for instruction, review, and assessment)			
• **8.EE.B.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. • **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	**8.EE.B.5** I can… graph a line. I can…. identify slope from a graph. I can… compare proportional relationships. **8.EE.B.6** I can… write an equation in slope intercept form to represent a line. I can… use similar triangles to find slope.	**8.EE.B.5** Graph a given proportional relationship Identify the slope from a provided graph of a proportional relationship and connect it to the unit rate. Compare two different proportional relationships represented in different ways. **8.EE.B.6** Give an equation in the form y = mx + b or y=mx to	**Go Math Lesson:** * Lesson 3.1 Representing Proportional Relationships (pg.71) **Modify- https://www.engageny.org/resource/grade-8-mathematics-module-4-topic-coverview Use lessons in Topic C from EngageNY** **Students should be seeing and comparing more graphs than provided in Go Math. The tasks in Engage NY give students ample opportunity to meet the standard.**

plane; know and 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.F.B.5** Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally. • **8.F.A.1** Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. • **8.F.A.2** Compare properties of two functions each represented in a different way. (algebraically, graphically,	**8.F.B.5** I can… write a description that matches a graph. I can… sketch a graph that matches a situation. **8.F.A.1** I can…determine if a relation is a function or not. **8.F.A.2** I can… compare functions represented in different representations.	represent a line graphed on a coordinate plane. Choose a representation demonstrating that the slope is the same between any two points on a line using similar triangles. **8.F.B.5** Qualitatively describe the functional relationship existing between two quantities when given a linear or non-linear graph. Sketch a graph that represents a function that has been described verbally and label the axes appropriately. **8.F.A.1** Can explain that a function is a rule that assigns to each input exactly one output and justify their thinking using a set of ordered pairs, a table of values, and a graph. Determine that a relation is a function or not a function. **8.F.A.2** Compare properties of two functions, each represented in different ways algebraically,	* Lesson 3.2 Rate of Change and Slope (pg. 77) **This is a very basic introduction to rate of change. To meet the full standard, incorporate Module 4 into the learning** ***Students must do more than find rate of change in order to cover the entire standard.** * Lesson 3.3 Interpreting the Unit Rate as Slope (pg. 83) **Modify- Students need to construct their own function model instead of just interpreting information that is presented to them.** * Lesson 4.1 Representing Linear Nonproportional Relationships (pg. 95) ***Standard is not addressed fully, but picks back up in Module 6.** * Lesson 4.2 Determining Slope and y-intercept (pg. 101) **Modify- Supplemental instruction required to address Similar Targets** * Lesson 4.3 Graphing Linear Nonproportional Relationships using Slope and y-intercept (pg. 107) ***This is only part of the standard, but other lessons will address the standard further.**

numerically in tables, or by verbal description). • **8.F.A.3** Know and interpret the equation y = mx+b as defining a linear function, whose graph is a straight line, give examples of functions that are not linear. • **8.F.B.4** Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (*x*, *y*) values, including reading these from a table or from a graph. 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.A.3** I can… determine if a function is linear or nonlinear. **8.F.A.4** I can… construct a function. I can… interpret the rate of change and initial value in terms of the situation it models. **8.SP.A.1** I can… construct a scatterplot. I can… interpret scatterplots and patterns of association.	graphically, numerically in tables, or by verbal descriptions. **8.F.A.3** Distinguish between a linear function in the form *y = mx + b* and a non-linear function. Provide examples of linear and non- linear functions. **8.F.B.4** Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of a linear function when given a table. Determine the rate of change and initial value of a linear function when given a graph. Determine the rate of change and initial value of a linear function when given two (x,y) values. Interpret the rate of change and initial value of a function in terms of the situation it models. **8.SP.A.1**Construct scatter plots using two- variable data sets	* Lesson 4.4 Proportional and Nonproportional Situations (pg. 113). **Delete** * Lesson 5.1 Writing Linear Equations from Situations and Graphs (pg. 127) * Lesson 5.2 Writing Linear Equations from a table (pg. 133) * Lesson 6.1 Identifying and Representing Functions (pg. 153) * Lesson 6.2 Describing Functions (pg. 161) * Lesson 6.3 Comparing Functions (pg. 167) * Lesson 6.4 Analyzing Graphs (pg. 173) * Lesson 5.3 Linear Relationships and Bivariate Data (pg. 139) **Delete** **https://www.engageny.org/resource/grade-8-mathematics-module-6-topic-boverview Use Topic B- lesson 6, 7 & 8 to teach Scatterplots.** ***Out of the 9 objectives listed in the focus documents for the 3 scatterplot standards, only 2 were covered in this lesson.** **Engage NY Task:** Module 4, Topic B, C Linear Equations in two variables and their graphs Slope and equations of lines Module 5, Topic A, Functions

• **8.SP.A.1** Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and non-linear association. • **8.SP.A.2** Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association informally fit a straight line and informally assess the model fit by judging the closeness of the data points to the line.	**8.SP.A.2** I can… determine the strength of a linear association by observing how close the data points are to the line of best fit. **8.SP.A.3** I can… use the line of best fit to solve problems and interpret the slope and y intercept.	Describe patterns of association for two-variable data sets represented in scatter plots. Identify the relationship of the two quantities being represented by a scatter plot in context. **8.SP.A.2** Construct a table of values, plot points, and connect points to model linear relationships in context. Determine which line best models the association of the data when given a scatter plot with various possible lines of fit. Determine the accuracy of a line of fit based on the closeness of the data points to the line. **8.SP.A.3** Use a linear model to solve contextual problems. Interpret the slope of a linear model in context of bivariate measurement data.	Module 6, Topic A – D Linear Functions Bivariate Numerical Data Linear and Nonlinear Models Bivariate Categorical Data

• **8.SP.A.3** Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hour as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*		Interpret the y-intercept of a linear model in context of bivariate measurement data.	

Resource Toolbox:

Additional Resources
Mathematics Assessment Project
Illustrative Mathematics
Virtual Nerd
Khan Academy
Internet 4 Classrooms
Teacher Tube
Kuta Software
Illuminations