Hattiesburg Public School District
Grade 8 Mathematics Units
2015 – 2016

Unit 4: Functions and Linear Relationships	Time Frame: 22 days (Jan 5 - Feb 5)
Content Standards	**Standards for Mathematical Practice**
Major Standards	(1) Make sense of problems and persevere in solving them.
8.F.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions**.)** *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.* **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 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.EE.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.* **8.EE.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*.	(2) Reason abstractly and quantitatively. (3) Construct viable arguments and critique the reasoning of others. (4) Model with mathematics. (5) Use appropriate tools strategically. (6) Attend to precision. (7) Look for and make use of structure. (8) Look for and express regularity in repeated reasoning.
Supporting Standards	

Additional Standards	
Pre-requisite Standards	
8.F.2	
• Solve a linear equation. • Collect and observe data from the coordinate plane. • Identify slope. • Graph on the coordinate plane. • Calculate slope of a line	
8.F.4	
• Graph with the Cartesian coordinate system. • Understand skills relative to functions. • Identify functions and their properties on axes in relation to (x, y). • Identify slope. • Identify slope from a graph using the ratio rise over run • Understand the rise is the vertical change; run is the horizontal change; and the y-intercept is the initial value.	
8.EE.5	
• Solve and check equations. • Graph values of x, given as a solution set, on the real number line. • Understand that values found for x are one dimensional when graphed on the real number line. • Identify slope of a line.	
8.EE.6	
• Solve a linear equation.	

- Collect and observe data from the coordinate plane.
- Identify slope and intercepts.
- Understand how to write intercepts as an ordered pair.
- Graph on the coordinate plane.

Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Lesson Topic Review Linear Functions and Relations Standard Ref 8.F.1 Resource/Strategy https://docs.google.com/document/d/1uM3pZuKUJugPiGKTLbQXvJAPt_qod2PYicWIKkUapM8/edit	Lesson Topic Understanding Proportional Relationships Standard Ref 8.EE.5, 8.F.2, 8.F.4 Resource/Strategy https://docs.google.com/document/d/1uM3pZuKUJugPiGKTLbQXvJAPt_qod2PYicWIKkUapM8/edit	Lesson Topic Slope, Rate of Change, and Initial Value Standard Ref 8.EE.6, 8.F.4 Resource/Strategy https://docs.google.com/document/d/1uM3pZuKUJugPiGKTLbQXvJAPt_qod2PYicWIKkUapM8/edit	Lesson Topic Slope Intercept Form Standard Ref 8.F.4, 8.F.2, Resource/Strategy https://docs.google.com/document/d/1uM3pZuKUJugPiGKTLbQXvJAPt_qod2PYicWIKkUapM8/edit	Lesson Topic FAL Classifying Proportion and Non-proportion Situations Standard Ref 7.RP Resource/Strategy www.map.mathshell.com https://docs.google.com/document/d/1uM3pZuKUJugPiGKTLbQXvJAPt_qod2PYicWIKkUapM8/edit
Lesson 6	**Lesson 7**			
Lesson Topic Graphing Linear Equations in Slope Intercept Form Standard Ref 8.EE.5, 8.F.4 Resource/Strategy https://docs.google.com/d	Lesson Topic Comparing Slopes Standard Ref 8.EE.6 Resource/Strategy https://docs.google.com/document/d/1uM3pZuKUJu			

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