**Number Relations & Functions (January 2013 – June 2013):**

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**Course Text: *(Pearson) Foundations and Pre-Calculus Mathematics 10***

***MATH 10 CURRICULUM AND TIMELINE:***

**Unit 1: Algebra and Number**

**Chapter 3: Factors and Products**

Factors: *Prime factors, Greatest Common Factor (GCF), Least Common Multiple*

*(LCM), Square Root, Cube Root*

Polynomials: *Substitution, Multiplication of Polynomials, Common factor*

*Polynomials, Trinomial Factoring, Difference of Squares*

**Chapter 4: Roots and Powers**

Irrational Numbers: *Real Number System, Radicals (Entire to Mixed, Different**Index)*

Powers: *Integral exponents, Rational exponents, Literal exponents, Literal bases*

**Unit 2: Relations and Functions**

**Chapter 5: Relations and Functions**

Data, Graphs & Situations: *Interpret / Describe a graph, Graph Situations, Graph given data or table of values, Domain / Range, Continuous / Discrete data*

Relations and Functions: *Relation vs. Function, Function vs. Non-function*

Linear Relations: *Create a Table of Values given an equation, Dependent / Independent Variables, Determine Linear Relations (Situation, Graph, Table of Values, Set of Ordered Pairs, Equation)*

**Chapter 5: Relations and Functions** (Continued)

Function Notation: *Express equation to function notation and vice-versa, Solve functions for dependant and independent variables, Sketch graphs*

**Chapter 6: Linear Functions**

Slope: $\frac{rise}{run}$ ; $\frac{change in y}{change in x}$ ; $\frac{y\_{2}-y\_{1}}{x\_{2}-x\_{1}}$, *Parallel vs. Perpendicular lines*

Characteristics of Linear Relations: *Intercepts, Slope, Domain / Range*

**Chapter 6: Linear Functions (cont.)**

Equations of linear Relations: *Slope Intercept Form (y=mx+b), General Form (ax+by+c=0, where a>0), Slope – Point Form [(y-y1)=m(x-x1)], Express a linear relation in each of the different forms, Rewrite one form to another form, Match graphs to different forms of linear relation equations.*

Equation of a line: *Determine the equation of a line (given Graph, Point and slope, Two points, Point and an equation of a parallel or perpendicular line, A scatter plot)*

**Chapter 7: Systems of Linear Equations**

Systems of Equations: *Model the situation, Explain point of intersection, Verify that a point is a solution, One solution, no solution, infinite number of solutions, Solve problems using systems of equations*

**Chapter (not in text): Distance / Midpoint**

Distance / Midpoint:

*Distance =* $\sqrt{(x\_{2}-x\_{1})^{2}+(y\_{2}-y\_{1})^{2}} $*, Determine the distance between two points*

*Midpoint=* $\left(\frac{x\_{1}+x\_{2}}{2} , \frac{y\_{1}+y\_{2}}{2}\right) $*, Determine the midpoint between two points*