Number Relations & Functions 10

Course Outline

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

 Supplement – ***http://www.pearsonschoolcanada.ca/media/canada/math10wncp\_manitoba\_curriculum\_companion\_final.pdf***

Unit: Curriculum Reference:

**Chapter 3 Factors and Products**

Factors:

 Prime factors AN 1

 Greatest Common Factor (GCF) AN 1

 Least Common Multiple (LCM) AN 1

 Square Root AN 1

 Cube Root AN 1

Polynomials: (Limited to monomials, binomials, trinomials)

 Substitution AN4

Multiplication of Polynomials AN4

 Common factor Polynomials AN5

 Trinomial Factoring AN5

 Difference of Squares AN5

**Chapter 4 Roots and Powers**

Irrational Numbers:

 Real Number System AN2

 Radicals

 Entire to Mixed (Numerical radicands only) AN2

 Different index ($\sqrt[a]{}$ , a=index) AN2

Powers:

 Integral exponents AN3

Numerical bases

 Rational exponents AN3

 Literal exponents AN3

Exponent Laws

 Literal bases AN3

**Chapter 5 Relations and Functions**

Data, Graphs & Situations:

 Interpret / Describe a graph RF1

 Graph Situations (label graphs to represent situation) RF1

 Graph given data or table of values RF1

 Domain / Range RF1 & RF5

 Continuous / Discrete data

Relations and Functions:

 Difference between a Relation and a Function RF2

 Function / Non-Function RF2

Linear Relations:

 Create a Table of Values given an equation RF4

 Dependent / Independent Variables RF4

Determine if the following describes a linear relation: RF4

Situation

Graph

Table of Values

Set of Ordered Pairs

Equation

Unit: Curriculum Reference:

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

Function Notation:

 Express equation to function notation RF9

 Function notation to Equation

 f(x) = 3x – 2 , find f(3) RF9

 g(t)=7 + t , find g(t)=15 RF9

 Sketch Graph RF9

**Chapter 6 Linear Functions**

Slope:

 Slope: $\frac{rise}{run}$ ; $\frac{change in y}{change in x}$ ; $\frac{y\_{2}-y\_{1}}{x\_{2}-x\_{1}}$ RF3

 Parallel vs. Perpendicular lines RF3

Characteristics of Linear Relations:

 Intercepts RF5

 Slope RF5

 Domain / Range RF5

Equations of linear Relations:

 Slope Intercept Form y=mx+b RF6

 General Form ax+by+c=0, where a>0 RF6

 Slope – Point Form (y-y1)=m(x-x1) RF6

 Express a linear relation in each of the different forms RF6

 Rewrite one form to another form RF6

 Match graphs to different forms of linear relation equations. RF6 & RF4

Equation of a line:

 Determine the equation of a line given: RF7

 Graph

 Point and slope

 Two points

 Point and an equation of a parallel or perpendicular line

 A scatter plot (line of best fit) (refer to supplement) RF7

**Chapter 7 Systems of Linear Equations (11 days)**

Systems of Equations:

 Model the situation RF10

 Explain point of intersection RF10

 Verify that a point is a solution RF10

 One solution, no solution, infinite number of solutions RF10

 Solve problems using systems of equations RF10

**Supplement : Distance / Midpoint**

Distance / Midpoint:

 Distance = $\sqrt{(x\_{2}-x\_{1})^{2}+(y\_{2}-y\_{1})^{2}}$ RF8

 Midpoint= $\left(\frac{x\_{1}+x\_{2}}{2} , \frac{y\_{1}+y\_{2}}{2}\right)$ RF8

 Determine the distance between two points RF8

 Determine the midpoint between two points RF8

**Evaluation**

Summative Evaluation/Assessments 60%

Observation/Communication 10%

Demonstration of Knowledge 30%