PAP 7th Grade Curriculum Bundle #4

Title	Suggested Dates
Sequences & the Nth Term, Writing & Solving Equations	October 26 – November 13 (14 days)

Big Idea/Enduring Understanding	Guiding Questions
Patterns in a sequence of numbers can be seen in graphs, tables and equations.	1. How can representing data in multiple ways be useful? 2. How can we use multiple representations of data to make predictions? 3. How can we determine different representations given one representation?
A variable in a formula for an arithmetic sequence is the stage or position number. An important relationship in a sequence of numbers is between the position of the term and the value of the term.	1. What is the importance of the variable in an expression or equation? 2. How would you determine the formula from which a given sequence of numbers is built?
Examining the rate of change and the starting point of a relationship can determine if a relationship is proportional or non-proportional.	1. How can you determine the rate of change and starting point of a linear relationship from a graph? a table? an equation? 2. How do you determine if a relationship is proportional or non-proportional?
Solving an equation means finding the value of the variable that makes the number sentence mathematically true.	1. What is a process you could use to determine the value of the variable in the model of an equation?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above)	
7.4 Patterns, relationships, and algebraic thinking. The student represents a relationship in numerical, geometric, verbal, and symbolic form. 7.4C use words and symbols to describe the relationship between the terms in an arithmetic sequence (with a constant rate of change) and their positions in the sequence	• Translate verbal expressions or equations into symbols and vice versa • determine the n^{th} term in a pattern in table or list • connect term number with the position in the sequence. • use the n^{th} rule to find a specific term • generate an expression to describe a sequence (verbal and nonverbal) • use both vertical and horizontal tables		**Dessie Sherrill's Translating Expression Cards** Email her for resource **AIRR 7th grade** Activity #169-180 **PH Textbook (7th)** 9.2a – 9.3 **Closing the Distance 7th** Lesson 4 pg 57 - 72

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			Tex Teams (Algebraic Reasoning) Stretching Sequencing Activity **Bonnie McNemar** 4 corner design/tile patterns
8.5 Patterns, relationships, and algebraic thinking. The student uses graphs, tables, and algebraic representations to make predictions and solve problems. 8.5B find and evaluate an algebraic expression to determine any term in an arithmetic sequence (with a constant rate of change)	• use expressions in which the constant rate of change is expressed as a fraction or a decimal • determine the nth term in a pattern in a table or list • connect term number with the position in the sequence. • use the n^{th} term to find a specific term • generate an expression to describe a sequence • include horizontal & vertical tables • selecting a sequence or table that matches a given algebraic expression		**PH Textbook (8^{th})** 11.1 (arithmetic sequences only) **AIRR 8^{th} grade** Activity #121-134 **Accelerated Curriculum 8^{th}** Unit 4 Lesson 2 pg 181 - 205
8.4 Patterns, relationships, and algebraic thinking. The student makes connections among various representations of a numerical relationship. 8.4 The student is expected to generate a different representation of data given another representation of data (such as a table, graph, equation, or verbal description).	• using multiple representations of data within a single context of a problem including the 4 corners model		**Shared Drive- Math** 4 Corners Power Point and Template **Accelerated Curriculum 8^{th}** Unit 4 Lesson 1 pg 163 - 180 **AIRR 8^{th} grade** Activity #110-117 **LTF** Interpreting Distance Graphs pg 46-49 (updated version on-line) The Ant and the Sugar (new – available on-line) Road Trip (new – available on-line)
7.5 Patterns, relationships, and algebraic thinking. The student uses equations to solve problems. 7.5A use concrete and pictorial models to solve equations and use symbols to record the actions	• solve one and two-step equations, with models, using positive whole numbers only • solving equations with variables on both sides using models • models using balance scales, algebra tiles, cups and beans, or other symbols	**CMP2 Variables and Patterns** Pearson Investigation 3 **CMP2 Moving Straight Ahead** Pearson	**PH Textbook (7^{th})** 4.2-4.6 **PH Textbook (8^{th})** Chapter 1.6, 1.7, 6.1 through 6.4

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Note: Keys for the models are very important-they change with each problem!		Investigation 3.2 & 3.3	**Closing the Distance 7th** Lesson 6 pg 95 - 108 **Region IV Grade 7** Concrete Models to Solve Equations Activity **AIRR 7th grade** Activity #181-188 **AIRR 7th grade** Activity #189-197 **Understanding Math** Understanding Equations: Topic 2, Topic 3 **LTF** Diagnostic Unit 6
7.5 Patterns, relationships, and algebraic thinking. The student uses equations to solve problems. 7.5B formulate problem situations when given a simple equation and formulate an equation when given a problem situation	• translate word phrases to algebraic expressions • translate word phrases to algebraic equations • write a real world situation given an equation or expression • given a real world situation write an equation/expression		**PH Textbook (7th)** 4.1,9.5 – 9.6
8.5 Patterns, relationships, and algebraic thinking. The student uses graphs, tables, and algebraic representations to make predictions and solve problems. 8.5A predict, find, and justify solutions to application problems using appropriate tables, graphs, and algebraic equations	• make predictions using data in a table or graph • distance problems d=rt • Translate verbal situations to equations • Graph input/output for a situation and connect the graph to an equation • Write situations to fit a graph • real-world situations in which both an equation and the dependent variable are given and students solve for the independent variable Ex. C=20+0.07m where c=27 or	**CMP2 Moving Straight Ahead** Pearson Investigation 1.2 – 1.4	**AIRR 8th grade** Activity #110-117 **PH Textbook (8th)** Lesson 3-5a and Lesson 3-5 **Accelerated Curriculum 8th** Unit 4 Lesson 1 pg 163-180

	C=20+0.07m where m=27		

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8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world. 8.7D locate and name points on a coordinate plane using ordered pairs of rational numbers Note: use with real life applications of sequences in this bundle	• Quadrant I in this bundle		**PH Textbook (8th)** Lesson 3-5a and Lesson 3-5 **AIRR 8th grade** Activity #181-187
8.3 Patterns, relationships, and algebraic thinking. The student identifies proportional or non-proportional linear relationships in problem situations and solves problems. 8.3A compare and contrast proportional and non-proportional linear relationships	• identify proportional and non-proportional with tables and graphs • relate a proportional equation that correlates with a real world situation • comparing unit rates of similar items		**Accelerated Curriculum 8th** Unit 3 Lesson 2-3 pg 125 - 160 **NCTM: Navigation Number and Operation** Pledge Drive Teacher notes pg 93 Student notes pg 135-137 Comparing Tables, Rules, and Graphs Teacher notes pg 95-97 Student notes pg 138-144 Using a unit rate to solve problems Teacher notes pg 104-109 Student notes pg 147-149 **AIRR 8th grade** Activity #80-85 **PH Textbook (8th)** Lesson 4-3a

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