Grade 4 Mathematics – Unit 1: Place Value of Whole Numbers

Phoenixville Area School District

Stage 1 Desired Results	
PA Core Standards: CC..2.1.4.B.1 Apply place – value concepts to show an understanding of multi-digit whole numbers. CC.2.1.4B.2 Use place-value understanding and properties of operations to perform multi-digit arithmetic. CC.2.2.4.A.4 Generate and analyze patterns using one rule **PSSA Assessment Anchors:** M04.A-T.1.1 Apply place-value and numeration concepts to compare, find equivalencies, and round M04.A-T.2.1 Use operations to solve problems.	***Transfer***
	TRANSFER GOALS *Students will be able to independently use their learning to…* - Number Sense: Develop a sound foundation to demonstrate the value of numbers by describing their various representations, relationships, and patterns. - Fluency: Demonstrate automatic recall of addition, subtraction, multiplication and division facts. - Problem – solving: Persistently apply various problem-solving strategies and organized approaches to accurately understand and solve problems. - Mathematical Vocabulary: Interpret mathematical vocabulary and apply proper terminology to engage in meaningful oral and written expression that communicates mathematical thinking, problem – solving methods, and rationale.
	Meaning
	UNDERSTANDINGS *Students will understand that…* - Mathematicians use place value concepts to represent amounts. - Identifying relationships between numbers helps classify and compare them. - Estimations helps determine the reasonableness of an answer. ESSENTIAL QUESTIONS *Students will keep considering...* - What are different ways to represent a number? - How do I demonstrate the relationship among numbers, quantities, and place value for whole numbers? - How can I use models, words, and expanded forms to order and compare numbers? - When is estimation more appropriate than finding an exact number?

M04.B-O.3.1 Recognize, describe, extend, create, and replicate a variety of patterns	*Knowledge and Skills Acquisition*	
	KNOWLEDGE *Students will know…* • Whole numbers can be represented in various forms (standard, word, expanded) • Each digit in a number has a different value (10 times greater as you move right to left) • Whole numbers can be compared according to their values • Whole numbers can be added and subtracted • Whole numbers can be rounded in order to estimate the sum or difference • Patterns can be described, extended, created and replicated once the relationship between the numbers/shapes is identified **VOCABULARY** • Word form • Standard form • Expanded form • Value • Pattern • Function table	**SKILLS** *Students will be skilled at…* • Demonstrate an understanding that in a multi – digit whole number (through one million) a digit in one place represents ten times what it represents in the place to its right • Read and write whole numbers in expanded, standard, and word form through 1 million • Compare two multi – digit numbers through one million based on meanings of the digits in each place • Use appropriate comparison symbols when comparing multi-digit numbers • Round multi-digit whole numbers (through one million) to any place • Add and subtract multi-digit whole numbers • Estimate the answer to addition and subtraction problems using whole numbers through six digits • Generate a number or shape pattern that follows a given rule • Determine the missing elements and rules in a function table (+,-,x)

Stage 2 – Evidence

Code A/M/T	Evaluative Criteria	Assessment Evidence	
A/M/T Acquisition Meaning Making	*What criteria will be used in each assessment to evaluate attainment*	**PERFORMANCE TASK(S)** *Students will demonstrate understanding (meaning-making and transfer) through complex performance by...* **Goal:**	Differentiation Considerations: [Work on this section after completing Stages 1-2 of all units]

Transfer	*of the desired results?*	You are to design a math game to review the concepts of place value.	
		Role:	
		You are a game designer looking for a job with a large game company.	
		Audience:	
		The target audience is Milton Bradley, a well - known game company.	
		Situation:	
		You are going to design a math game showing your understanding of place value of whole numbers. You are going to be designing ONE game that allows students to review place value skills that were learned.	
		Product/Performance and Purpose:	
		You need to create a game that covers place value concepts. Your game should have rules and procedures that allows them to play in a group.	
		Standards & Criteria for Success:	
		Your game should….	

		• Contain accurate information
		• Be easy for 4th grade students to understand and play without assistance from an adult
		• Cover all of the following skills:
		    • Comparing and ordering numbers to hundred-thousand
		    • Number patterns involving one rule
		    • Rounding numbers
		• Choose <u>at least 2</u> other skills to include in your game:
		    • Adding and subtracting numbers up to 6 digits
		    • Finding the value of digits
		    • Identifying place value of digits in numbers up to 6 digits	

		• Writing numbers in different forms (standard, word, and expanded form)	
A/M/T Acquisition Meaning Making Transfer	*What criteria will be used in each assessment to evaluate attainment of the desired results?*	OTHER EVIDENCE	Differentiation Considerations: [Work on this section after completing Stages 1-2 of all units]