

Matrix: Sam the Slippery Spider

Student's Name:		Grade Level:		School:	
Analytical Score:			Holistic Score: N A P E		
<input type="checkbox"/> Understanding:		N A P E		Comments or Observations:	
<input type="checkbox"/> Reasoning, Strategies, & Mathematical Procedures:		N A P E			
<input type="checkbox"/> Communication:		N A P E			
APS MATHEMATICS STRAND: NUMBER SENSE AND OPERATIONS					
GRADE: THIRD					
Selects and uses an appropriate method for adding and subtracting using mental arithmetic.		Models concepts of addition and subtraction of two- and three-digit numbers, with and without regrouping, in a variety of ways.		Models, represents, and explains multiplication and division equations and situations using words, pictures, manipulatives, etc.	
Uses and explains standard addition and subtraction notation (i.e., equations) to represent word problems.		Uses and explains estimation strategies used to solve situational story problems.			
Uses and explains anchor numbers, decomposing, and recombining strategies to combine and compare quantities in the 100s [e.g., $37+54=(30+7)+(50+3+1)=30+50+10+1=90+1=91$].		Solves addition/subtraction problems with a variety of givens and unknowns.			
GRADE: FOURTH					
Estimates and solves addition and subtraction problems using a variety of strategies (e.g., mental math, calculators, spreadsheets, anchor numbers, and pencil/paper).		Estimates and solves multiplication/division problems involving multi-digit numbers multiplied/divided by one-digit numbers using a variety of efficient strategies [e.g., mental math, anchor numbers, distributive property (decomposing and recombining)] and determines if the answer is reasonable.		Solves multiplication and division problem situations with a variety of givens and unknowns (e.g., $4 \times 3 = ?$, $3 \times ? = 12$).	

GRADE: FIFTH					
Uses a variety of strategies, including calculators and geometric models, to find factors, multiples, primes, even/odd numbers, and square numbers, and to explain number composition.		Selects the appropriate operation involving addition, subtraction, multiplication, and division from situational story problems, and uses relationships among the four basic operations to solve them.			
Develops, compares, and selects a strategy that is efficient and accurate when solving addition, subtraction, multiplication, and division problems.		Estimates and solves problems involving sums, differences, products, and quotients and justifies the reasonableness of the solutions.			
APS MATHEMATICS STRAND: PATTERNS, FUNCTIONS, AND ALGEBRAIC CONCEPTS					
GRADE: THIRD					
Identifies and creates patterns in all areas of math.		Finds, invents, and uses patterns to solve problems.			
GRADE: FOURTH					
Identifies and extends a growing pattern with symbols, patterns and numbers and writes a numerical description.		Finds patterns by organizing data in T-charts and describes the growing pattern numerically.		Represents the idea of a variable as an unknown quantity using a letter or a symbol (e.g., $3 + ? = 7$; $3 + \underline{\quad} = 7$; $3 + a = 7$).	
GRADE: FIFTH					
Forms a hypothesis about and tests a rule for the pattern in a sequence of numbers (e.g., What is the 10 th number in this sequence: 4, 9, 14, 19...?).		Uses patterns and numerical rules to represent and solve problems.			
Uses T-charts to represent patterning with functions.		Uses variables and open sentences to express simple, single-step algebraic equations (e.g., $2 + n = 5$).			

APS MATHEMATICS STRAND: GLOBAL MATHEMATICAL PROCESSES

GRADE: KINDERGARTEN THROUGH TWELTH

Develops resourcefulness and perseverance in problem solving in mathematics and other disciplines.		Works in teams to share ideas, to develop and coordinate group approaches to problems, and to communicate findings.		Recognizes and applies mathematics in contexts outside the mathematics course.	
Recognizes when to use previously learned strategies to solve new problems.		Communicates mathematical thinking coherently and clearly to others.		Develops a repertoire of mathematical representation (e.g. pictures, written symbols, oral language, real-world situations, and manipulative models) that can be used purposefully and appropriately interchangeably.	
Develops and uses strategies (e.g., breaking complex problems into simpler parts) for solving given problems.		Analyzes and evaluates mathematical thinking and strategies of others.		Selects, applies, and translates among mathematical representations to solve problems.	
Monitors, discusses, and reflects on the process of mathematical problem solving.		Relates applications to mathematical language in various modalities.		Uses representations to model and interpret physical, social, and mathematical phenomena.	
Makes and investigates mathematical conjectures and uses them successfully in developing and evaluating mathematical arguments and proofs.		Identifies and connects functions with real-world applications.		Uses manipulatives, calculators, computers, and other tools as appropriate in order to strengthen mathematical thinking, understanding, and power to build upon foundational concepts.	