

# Matrix: Day Lily Dilemma

<b>Student's Name:</b>		<b>Grade Level:</b>		<b>School:</b>	
<b>Analytical Score:</b>				<b>Holistic Score: N A P E</b>	
<input type="checkbox"/> Understanding:		N A P E		<b>Comments or Observations:</b>	
<input type="checkbox"/> Reasoning, Strategies, & Mathematical Procedures:		N A P E			
<input type="checkbox"/> Communication:		N A P E			
<b>APS MATHEMATICS STRAND: Patterns, Functions, and Algebraic Concepts</b>					
<b>GRADE: SIXTH</b>					
<b>Predicts</b> sequences and patterns involving varying rates of change (e.g., growth over time).		<b>Analyzes</b> the use of variables to represent quantities (e.g., area of a rectangle: $A = lw$ ).		<b>Explains</b> that equations are symbolic representations of relationships, patterns, and functions.	
<b>Compares and contrasts</b> models of continuous functions (e.g., plant growth over time) in real-life applications.		<b>Explains</b> how expressions are used to model functions and patterns [e.g., 2, 4, 6, 8 represents $f(x) = 2n$ ].		<b>Solves</b> one-step equations using the concept of balance when quantities are added, subtracted, or divided to both sides of an equation.	
<b>GRADE: SEVENTH</b>					
<b>Identifies and uses</b> variable expressions and formulas to solve a variety of real-life situations (e.g., Simple Interest: $I = prt$ ).		<b>Develops and tests</b> strategies for solving two-step equations.		<b>Recognizes and applies</b> the properties of equality.	
<b>Represents, describes, and analyzes</b> numerical patterns and linear relationships using tables, graphs, words, and standard algebraic notation.		<b>Translates</b> hypotheses into formal methods of solving algebraic equations.			

GRADE: EIGHTH					
<b>Develops</b> exponential functions to represent real-life situations (e.g., compound interest problem).		<b>Simplifies</b> algebraic expressions including rational expressions.		<b>Solves</b> equations for specified variables (e.g., solve for $h$ if $A = bh/2$ ).	
<b>Represents, describes, and analyzes</b> numerical patterns and relationships using tables, graphs, words, and standard algebraic notation.		<b>Investigates and applies</b> the basic mathematical properties (e.g., commutative, associative, distributive, identity, and zero) in a variety of situations.			
<b>Identifies and models</b> real-life situations using multiple representations.		<b>Develops and tests</b> strategies for solving multi-step equations.			
APS MATHEMATICS STRAND: Number Sense and Operations					
GRADE: SIXTH					
<b>Uses</b> commutative, associative, identity, zero, and distributive properties when solving problems.		<b>Uses</b> the appropriate estimation strategy for a variety of situations.			
<b>Selects</b> an appropriate operation (i.e., +, -, $\times$ , $\div$ ) to solve situational story problems.		<b>Determines</b> when an exact answer is necessary or when an estimate is appropriate (e.g., medicine dosage vs. number of people at a concert).			
GRADE: SEVENTH					
<b>Explains and models</b> the value of exponents and square roots.		<b>Simplifies and evaluates</b> (solves) numerical expressions involving exponents (e.g., $2^3 = 2 \times 2 \times 2 = 8$ ).			

GRADE: EIGHTH				
<b>Categorizes</b> numbers and sets within structures of the real number system (e.g., Natural numbers < rational numbers < real numbers).		<b>Manipulates</b> all real numbers, their properties, and operations.		<b>Develops and evaluates</b> arguments involving real numbers, their patterns and operations.
<b>Shows</b> flexibility using multiple number representations; <b>identifies</b> relationships involving the subsets of the real number system (e.g., order, least to greatest: 1, $\sqrt{2}$ , $\sqrt{3}$ , 2).		<b>Simplifies and evaluates</b> , if solvable, algebraic expressions for all types of real numbers including exponents and common square roots.		
<b>Selects</b> appropriate mathematical representations to describe thought-provoking real-life situations.		<b>Examines, describes, and models</b> exponential patterns that reflect growth and decay (e.g., Represent doubling 1¢ every day for 10 days in exponential form).		
APS MATHEMATICS STRAND: GLOBAL MATHEMATICAL PROCESSES				
GRADE: KINDERGARTEN THROUGH TWELTH				
<b>Develops</b> resourcefulness and perseverance in problem solving in mathematics and other disciplines.		<b>Works</b> in teams to share ideas, to develop and coordinate group approaches to problems, and to communicate findings.		<b>Recognizes and applies</b> mathematics in contexts outside the mathematics course.
<b>Recognizes</b> when to use previously learned strategies to solve new problems.		<b>Communicates</b> mathematical thinking coherently and clearly to others.		<b>Develops</b> 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.

<b>Develops and uses</b> strategies (e.g., breaking complex problems into simpler parts) for solving given problems.		<b>Analyzes and evaluates</b> mathematical thinking and strategies of others.		<b>Selects, applies, and translates</b> among mathematical representations to solve problems.	
<b>Monitors, discusses, and reflects</b> on the process of mathematical problem solving.		<b>Relates</b> applications to mathematical language in various modalities.		<b>Uses</b> representations to model and interpret physical, social, and mathematical phenomena.	
<b>Makes and investigates</b> mathematical conjectures and uses them successfully in developing and evaluating mathematical arguments and proofs.		<b>Identifies and connects</b> functions with real-world applications.		<b>Uses</b> manipulatives, calculators, computers, and other tools as appropriate in order to strengthen mathematical thinking, understanding, and power to build upon foundational concepts.	