

# MATRIX: BLOWING UP BALLOONS

<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: KINDERGARTEN</b>					
<b>Identifies, describes, and extends</b> patterns with familiar objects in both classroom and real-life situations.		<b>Creates, describes, and extends</b> patterns.			
<b>GRADE: FIRST</b>					
<b>Identifies, describes, creates, and extends</b> patterns observed in familiar objects in real-life situations (e.g. 1 child = 2 eyes, 2 children = 4 eyes).		<b>Describes</b> how a pattern develops, repeats, and builds toward more complex patterns.			
<b>GRADE: SECOND</b>					
<b>Describes, creates, and extends</b> a wide variety of patterns.		<b>Identifies</b> patterns in the number system (e.g., 5, 10, 15...).		<b>Develops and applies</b> more complex patterns and relationships in real-life and mathematical problem situations.	

<b>APS MATHEMATICS STRAND: Number Sense and Operations</b>				
<b>GRADE: KINDERGARTEN</b>				
<b>Counts</b> orally from 1 to 30 and backward from 10 to 1.		<b>Describes</b> a quantity using the terms more, less, and same.		<b>Combines and separates</b> two single-digit numbers using pictures, stories, and objects to model the situation.
<b>Orders</b> quantities from least to most or most to least.		<b>Represents</b> numbers in a variety of equivalent ways (e.g., dots, pictures, numerals).		<b>Records</b> numerical information using pictures, words, and/or numbers.
<b>GRADE: FIRST</b>				
<b>Counts</b> orally to 100.		<b>Examines</b> the concept of ordered pairs by linking commonly paired relationships (e.g., How many legs do 3 chickens have?).		<b>Develops</b> strategies and estimation skills for solving addition and subtraction problems.
<b>Reads, writes, and sequences</b> numbers to 100. <b>Counts</b> orally by 2s to 30 and by 5s and 10s to 100.		<b>Constructs</b> a mental image of combining and separating quantities in problem situations.		<b>Records</b> strategies for solving, combining, and separating problems using pictures, numbers, equations, and words.
<b>GRADE: SECOND</b>				
<b>Applies</b> patterns in skip counting; <b>compares and defends</b> the relationship between skip counting, grouping, and equal sets.		<b>Makes and defends</b> a reasonable estimate of quantities up to 200 in problem situations.		<b>Uses and explains</b> multiple strategies to solve addition and subtraction problems, with and without re-grouping, using two-digit numbers.
<b>Uses and explains</b> strategies for recalling addition and subtraction facts to 18.		<b>Identifies</b> number sequences (e.g., 12, 14, 16... what comes next?).		<b>Writes</b> addition and subtraction equations for problem situations with one- or two-digit numbers using vertical or horizontal formats.

<b>APS MATHEMATICS STRAND: Geometry, Spatial Sense, and Measurement</b>					
<b>GRADE: KINDERGARTEN</b>					
<b>Represents</b> mathematical work with manipulatives.					
<b>GRADE: FIRST</b>					
<b>Develops</b> vocabulary to describe and compare length (e.g., longer, shorter).		<b>Represents</b> measurements with numbers, manipulatives, and pictures.		<b>Sequences</b> days of the week, months, and events (e.g., classroom schedules, birthdays, and holidays).	
<b>GRADE: SECOND</b>					
<b>Applies</b> patterns in skip counting; <b>compares and defends</b> the relationship between skip counting, grouping, and equal sets.		<b>Makes and defends</b> a reasonable estimate of quantities up to 200 in problem situations.		<b>Uses and explains</b> multiple strategies to solve addition and subtraction problems, with and without re-grouping, using two-digit numbers.	
<b>Uses and explains</b> strategies for recalling addition and subtraction facts to 18.		<b>Identifies</b> number sequences (e.g., 12, 14, 16... what comes next?).		<b>Writes</b> addition and subtraction equations for problem situations with one- or two-digit numbers using vertical or horizontal formats.	
<b>APS MATHEMATICS STRAND: Data Analysis, Statistics, and Probability</b>					
<b>GRADE: KINDERGARTEN</b>					
<b>Represents</b> mathematical work with manipulatives.					
<b>GRADE: FIRST</b>					
<b>Develops</b> vocabulary to describe and compare length (e.g., longer, shorter).		<b>Represents</b> measurements with numbers, manipulatives, and pictures.		<b>Sequences</b> days of the week, months, and events (e.g., classroom schedules, birthdays, and holidays).	

GRADE: SECOND				
<b>Compares</b> the length, weight, and capacity of objects using direct and indirect comparisons.		<b>Compares</b> the effects of using units of different sizes.		<b>Represents</b> the results of length, weight, and capacity comparisons.
<b>Estimates and measures</b> length, weight, and capacity using nonstandard units.		<b>Explores</b> the use of standard units and <b>explains</b> the need for using standard units.		<b>Describes</b> the relationship between units of time (e.g., minutes in an hour, hours in a day, days in a week/month and year, months in a year).
APS MATHEMATICS STRAND: Global Mathematical Processes				
GRADE: K - 12				
<b>Develops</b> resourcefulness and perseverance in problem solving in mathematics and other disciplines.		<b>Recognizes</b> when to use previously learned strategies to solve new problems.		<b>Develops and uses</b> strategies for solving given problems.
<b>Monitors and reflects</b> on the process of mathematical problem solving.		<b>Makes and investigates</b> mathematical conjectures and <b>uses</b> them successfully in developing and evaluating mathematical arguments and proofs.		<b>Uses</b> the concept of counterexample to test the legitimacy of an argument.
<b>Develops</b> a logical sequence of arguments leading to a valid conclusion or solution to a problem (statement/reasons, proof, informal proof, and algebraic steps).		<b>Works</b> in teams to share ideas, to develop and coordinate group approaches to problems, and to share from each other in communicating findings.		<b>Relates</b> applications to mathematical language in various modalities.
<b>Communicates</b> mathematical thinking coherently and clearly to others.		<b>Analyzes and evaluates</b> mathematical thinking and strategies of others.		<b>Identifies and connects</b> functions with real-world applications.

<p><b>Identifies</b> how seemingly different mathematical situations may be essentially the same (e.g. the intersection of two lines is the same as the solution to a system of linear equations).</p>		<p><b>Investigates</b> and <b>explains</b> the mathematics required for various careers.</p>		<p><b>Recognizes</b> and <b>applies</b> mathematics in contexts outside the mathematics course.</p>	
<p><b>Develops</b> a repertoire of mathematical representations that can be used purposefully, and appropriately interchangeably (e.g. pictures, written symbols, oral language, real-world situations, and manipulative models).</p>		<p><b>Selects, applies,</b> and <b>translates</b> among mathematical representations to solve problems.</p>		<p><b>Uses</b> representations to model and interpret physical, social, and mathematical phenomena.</p>	