



Rio Rancho Public Schools

Math Standards

Revised 2007

PROCESS STANDARDS

PROBLEM SOLVING

- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and in other contexts
- Apply and adapt a variety of appropriate strategies to solve problems
- Monitor and reflect on the process of mathematical problem solving.

REASONING AND PROOF

- Recognize reasoning and proof as fundamental aspects of mathematics
- Make and investigate mathematical conjectures
- Develop and evaluate mathematical arguments and proofs
- Select and use various types of reasoning and methods of proof

COMMUNICATION

- Organize and consolidate their mathematical thinking through communication.
- Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.
- Analyze and evaluate the mathematical thinking and strategies of others.
- Use the language of mathematics to express mathematical ideas precisely.

CONNECTIONS

- Recognize and use connections among mathematical ideas
- Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
- Recognize and apply mathematics in contexts outside of mathematics

REPRESENTATION

- Create and use representations to organize, record, and communicate mathematical ideas.
- Select, apply, and translate among mathematical representations to solve problems
- Use representations to model and interpret physical, social, and mathematical phenomena.

RRPS District Standards: MATHEMATICS
Kindergarten

STRAND I: NUMBERS AND OPERATIONS	
<i>NM State Content Standard I: Students will understand numerical concepts and mathematical operations.</i>	
<u>NM State Benchmarks Grades K-4</u>	<u>RRPS Kindergarten Power Standards</u> <i>While all benchmarks are taught, Power Standards are consistently emphasized and regularly assessed.</i>
<u>NM State Benchmark I-A: Grades K-4</u> Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	<u>Power Standard 1 (Benchmark I-A, I-B, I-C)</u> Count, understand, relate, and represents numbers, and whole number systems to develop number sense
<u>NM Kindergarten Performance Standards</u> 1. Demonstrate an understanding of the place-value structure of the base-ten number system: <ul style="list-style-type: none"> • count with understanding and recognize “how many” in sets of objects up to 20 • read and write whole numbers up to 20 • compare and order whole numbers up to 20 • connect numerals to the quantities they represent using various physical models • use an organized counting method to keep track of quantities while counting (one-to-one correspondence) (e.g., touch object once and only once as counting a set) • order sets of objects and numbers from least to most or most to least • 	<u>Performance Indicators</u> <ol style="list-style-type: none"> a. Count with understanding by 1’s to 100 b. Use a number grid, number line, manipulatives, or calculator to count by 2s, 5s, 10s as a pattern c. Use a number grid, number line, manipulatives or calculator to count back by 1’s d. Read and write numbers to 50 e. Compare and order whole numbers up to 20 f. Count 20 or more objects using an organized counting method g. Estimate the number of objects in a collection h. Model numbers with manipulatives; use manipulatives to exchange 1’s for 10’s and 10’s for 100’s i. Explain answers using pictures, numbers, or words.
<u>NM State Benchmark I-B: Grades K-4</u> Understand the meaning of operations and how they relate to one another.	<u>Power Standard 2 (Benchmark I-B)</u> Use a variety of strategies to solve addition and subtraction problems
<u>NM Kindergarten Performance Standards</u> <ol style="list-style-type: none"> 1. Represent numbers using pictures, objects, or numerals. 2. Use concrete objects to solve simple addition and subtraction story problems (e.g., oral not written) 	<u>Performance Indicators</u> <ol style="list-style-type: none"> a. Use manipulatives, number lines, drawings, calculator and mental arithmetic to solve problems involving addition and subtraction b. Count up starting at different numbers on a number grid, number line or calculator c. Count back starting at different numbers on a number grid, number line or calculator d. Explain answers using pictures, numbers or words.
<u>NM State Benchmark I-C: Grades K-4</u> Compute fluently and make reasonable estimates.	
<u>NM Kindergarten Performance Standards</u> 1. Estimate quantities of objects up to 20.	

STRAND II: ALGEBRA	
<i>NM State Content Standard II: Students will understand algebraic concepts and applications.</i>	
<u>NM State Benchmarks Grades K-4</u>	<u>RRPS Kindergarten Power Standards</u> <i>While all benchmarks are taught, Power Standards are consistently emphasized and regularly assessed.</i>
<u>NM State Benchmark II-A: Grades K-4</u> Understand patterns, relations, and functions.	<u>Power Standard 3 (Benchmark II-A)</u> Identify and classify properties; extend, describe and create patterns. Performance Indicators
<u>NM Kindergarten Performance Standards</u> 1. Identify the attributes of objects (e.g., the ability to identify attributes is a foundational skill for sorting and classifying). 2. Sort, classify, and order objects by size, number, and other properties. 3. Recognize, reproduce, describe, extend, and create repeating patterns (e.g., color, shape, size, sound, movement, simple numbers).	a. Sort, classify, and order objects by size and other properties b. Extend, describe, and create patterns (visual, rhythmic, or movement) c. Explain answers using pictures, numbers or words.
<u>NM State Benchmark II-B: Grades K-4</u> Represent and analyze mathematical situations and structures using algebraic symbols.	
<u>NM Kindergarten Performance Standards</u> 1. Use concrete, pictorial, and verbal representation to develop an understanding of invented and conventional symbols.	
<u>NM State Benchmark II-C: Grades K-4</u> Use mathematical models to represent and understand quantitative relationships.	
<u>NM Kindergarten Performance Standards</u> 1. Model situations that involve whole numbers using objects or pictures.	
<u>NM State Benchmark II-D: Grades K-4</u> Analyze changes in various contexts.	
<u>NM Kindergarten Performance Standards</u> 1. Verbally describe changes in various contexts (e.g., plants or animals growing over time).	

STRAND III: GEOMETRY	
<i>NM State Content Standard III: Students will understand geometric concepts and applications.</i>	
<u>NM State Benchmarks Grades K-4</u>	<u>RRPS Kindergarten Power Standards</u> <i>While all benchmarks are taught, Power Standards are consistently emphasized and regularly assessed.</i>
<u>NM State Benchmark III-A: Grades K-4</u> Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.	<u>Power Standard 4 (Benchmark III-A)</u> Identify and describe geometric features and common objects Performance Indicators a. Identify and describe plane figures including circle, triangle, square, rectangle b. Compare familiar plane and solid objects (e.g. cube, sphere) by common attributes c. Explain answers using pictures, numbers or words
<u>NM Kindergarten Performance Standards</u> 1. Identify common objects in their environments and describe their geometric features: <ul style="list-style-type: none"> • describe, identify, model, and draw common geometric objects (e.g., circle, triangle, square, rectangle, cube, sphere, cone) • compare familiar plane and solid objects by common attributes (e.g., shape, size, number of corners) 	
<u>NM State Benchmark III-B: Grade K-4</u> Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	
<u>NM Kindergarten Performance Standards</u> 1. Follow simple directions to find a specific location in space. 2. Use spatial vocabulary (e.g., left, right, above, below) to describe relative position.	
<u>NM State Benchmark III-C: Grades K-4</u> Apply transformations and use symmetry to analyze mathematical situations.	
<u>NM Kindergarten Performance Standards</u> 1. Use manipulatives (e.g., puzzles, tangrams, blocks) to demonstrate rotation (i.e., flips), translations (i.e., slides), and reflection (i.e., turns). 2. Investigate the symmetry of two-dimensional shapes (e.g., by folding or cutting paper, using mirrors).	
<u>NM State Benchmark III-D: Grades K-4</u> Use visualization, spatial reasoning, and geometric modeling to solve problems.	
<u>NM Kindergarten Performance Standards</u> 1. Describe how to get from one location to another (e.g., how to get to the library). 2. Find and describe geometric shapes in nature or architecture.	

STRAND IV: MEASUREMENT

NM State Content Standard IV: Students will understand measurement systems and applications.

NM State Benchmarks Grades K-4

RRPS Kindergarten Power Standards

While all benchmarks are taught, Power Standards are consistently emphasized and regularly assessed.

NM State Benchmark IV-A: Grades K-4

Understand measurable attributes of objects and the units, systems, and process of measurement.

Power Standard 5 (Benchmark IV-A)

Understand measurable concepts of money and time to the hour.

Performance Indicators

NM Kindergarten Performance Standards

1. Describe and compare, using appropriate concepts and vocabulary, the measurable properties of length (e.g., shorter, longer, taller), volume (e.g., full, empty), weight (e.g., heavy, light), and time (e.g., before, after, morning, afternoon, days of week).
2. Use tools to make predictions (e.g., using a balance scale, predicting how many cups a container will hold and then filling it to check the prediction).
3. Measure using non-standard units of measurement (e.g., use pencils to measure desk top, use different lengths of rope to measure distance in classroom).
4. Use digital and analog (face) clocks to tell time to the hour

- a. Identify penny, nickel, dime, quarter and dollar bill
- b. Relate penny, nickel, dime, quarter and dollar bill to the number system (example: 5 bears and 5 pennies both represent the number 5, 5 pennies=1 nickel)
- b. Tell time using analog and digital clocks to the hour

NM State Benchmark IV-B: Grades K-4

Apply appropriate techniques, tools, and formulas to determine measurements.

NM Kindergarten Performance Standards

1. Explore measuring objects using a repeating non-standard unit of measurement (e.g., paper clips, cubes, etc.).

STRAND V: DATA ANALYSIS AND PROBABILITY	
<i>NM State Content Standard V: Students will understand how to formulate questions, analyze data, and determine probabilities.</i>	
NM State Benchmarks Grades K-4	<p><u>RRPS Kindergarten Power Standards</u> <i>While all benchmarks are taught, Power Standards are consistently emphasized and regularly assessed.</i></p>
NM State Benchmark V-A: Grades K-4 Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.	
<u>NM Kindergarten Performance Standards</u> 1. Collect data about objects and events in the environment to answer simple questions (e.g., brainstorm questions about self and surroundings, collect data, and record the results using objects, pictures, and pictographs).	
NM State Benchmark V-B: Grades K-4 Select and use appropriate statistical methods to analyze data.	
<u>NM Kindergarten Performance Standards</u> 1. Describe simple data and pose questions about the data.	
NM State Benchmark V-C: Grades K-4 Develop and evaluate inferences and predictions that are based on data.	
<u>NM Kindergarten Performance Standards</u> 1. Make simple predictions. 2.	
NM State Benchmark V-D: Grades K-4 Understand and apply basic concepts of probability.	
<u>NM Kindergarten Performance Standards</u> 1. Answer questions that relate to the possibility of familiar events happening or not.	