

Jemez Valley Public Schools
FIRST GRADE MATHEMATICS • CONTENT MAP

Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Strand 1: Number and Operations			
Standard: Students will understand numerical concepts and mathematical operations			
<p>Demonstrate an understanding of the place-value structure of the base-ten number system by; (a)) counting with understanding and recognizing “how many” in sets of objects up to 50, (b) counting orally by 2s to 20 and by 5s and 10s to 100, (c) comparing and ordering numbers up to 100.</p> <p>Use ordinal numbers (e.g., what position?) and cardinal numbers (e.g., how many?) appropriately.</p> <p>Perform addition and subtraction with whole number combinations.</p> <p>Computational fluency: (+ and -) 0-20 (year long)</p> <p>Demonstrate an understanding of the place-value structure of the base-ten number system by; (d) reading, writing, modeling, and sequencing whole numbers up to 100 (including filling in missing numbers in a sequence), (e) counting orally backward from 100, and (f) connecting number words and numbers to the quantities they represent.</p> <p>Use a variety of models to demonstrate an understanding of addition and subtraction of whole numbers</p> <p>Use and explain estimation strategies to determine the reasonableness of answers involving addition and subtraction.</p>	<p>Use strategies for whole-number computation, with a focus on addition and subtraction (e.g., counting on or counting back, doubles, sums that make 10, direct modeling with pictures or objects, numerical reasoning based on number combinations and relationships).</p> <p>Decompose and recombine numbers using manipulatives (e.g., by breaking numbers apart and recombining) to create and construct equivalent representations for the same number e.g., $10 = 3 + 7$ or $1 + 2 + 7$ or $3 + 2 + 5$).</p> <p>Demonstrate a variety of methods to compute (e.g., objects, mental computation, paper and pencil, estimation)</p> <p>Given simple story problems, explain verbally how to select and use appropriate operations.</p>	<p>Demonstrate an understanding of the place-value structure of the base-ten number system by; (g) grouping objects by 10s and 1s to explore place value (e.g., 24 equals two tens and four ones).</p> <p>Find the sum of three one-digit numbers to the sum of 15. Solve addition and subtraction problems with one- and two-digit numbers (e.g., $5 + 58 = _$).</p> <p>Understand and use the inverse relationship between addition and subtraction to solve problems and check solutions (e.g., $8 + 6 = 14$ is related to $14 - 6 = 8$).</p> <p>Use concrete materials to investigate situations that relate to multiplication and division (e.g., equal grouping of objects, sharing equally).</p>	
Quadrant I	Quadrant II	Quadrant III	Quadrant IV
Strand 2: Algebra			
Standard II: Students will understand algebraic concepts and applications.			
<p>Recognize, reproduce, and describe repeating patterns (e.g., color, shape, size, sound, movement, simple numbers)</p> <p>Identify umber patterns on the hundreds chart. Skip-count on a hundreds chart (e.g., by 2s up to 20 and 5s and 10s up to 100) to identify, describe, and predict number patterns.</p> <p>Introduce writing number sentences that use concrete objects, pictorial, and verbal</p>	<p>Extend, and create repeating patterns e.g., color, shape, size, sound, movement, simple numbers)</p> <p>Describe situations that involve addition and subtraction of whole numbers including objects, pictures, and symbols (e.g., Robert has four apples, Maria has</p>	<p>Represent equivalent forms of the same number through the use of physical models, diagrams, and number expressions to 20 (e.g., $3 + 5 = 8$, $2 + 6 = 8$).</p> <p>Demonstrate and describe the concept of equal (e.g. using objects, balance scales) that include the concepts of volume, weight, and area.</p> <p>Solve open number sentences that have</p>	

representations to express mathematical situations using invented and conventional symbols (e.g., +, -, =, ().	five more). Translate from one representation to another (e.g., red, red, blue, blue to step, step, clap, clap). Skip-count on a hundreds chart (e.g., by 2s up to 100s)	variables representing numbers up to 10 (e.g. $10 = _ + 2$). Describe qualitative change (e.g., a student growing taller, trees getting bigger, ice melting).	
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Strand 3: Geometry			
Standard: Students will understand geometric concepts and applications.			

Describe direction, location, space, and shape (e.g., left, right, over, under, near, far, between). Use materials to create representations of the surrounding environment (e.g., three-dimensional models, maps of the classroom). Create simple symmetrical shapes and pictures. Identify common geometric figures and classify them by common attributes by; (a) participating in discussions comparing, identifying, and analyzing attributes to develop the vocabulary needed to describe two- and three-dimensional geometric shapes and their attributes (e.g., sides, corners, edges, faces). (b) sorting two- and three-dimensional shapes into categories based on common attributes, (c) using the attributes of shapes to analyze and identify examples and non-examples of geometric shapes, and (d) recognizing, naming, building, and drawing both polygonal (up to six sides) and curved shapes. Recognize and describe the symmetrical characteristics of design (e.g., geometric designs made with pattern blocks). Participate in activities to develop mental visualization and spatial memory (e.g., "quick image" activities that require students to recall or reproduce a configuration of dots on a card or to determine the number of dots without counting). Predict the results of changing a shape's position or orientation by using rotation (i.e., turns), reflection (i.e., flips), and translations (i.e., slides).		Develop estimates and measure distances using nonstandard measurements	Use combinations of shapes to make a new shape to demonstrate relationships between shapes (e.g., a hexagon can be made from six triangles) Describe how to get from one location to another by visualizing the landmarks along the route. Visualize, describe, and record directions for navigating from one location to another to develop the vocabulary needed to describe direction, distance, location, and representation Create three dimensional shapes based on two dimensional representations. Identify structures from different views or match views of the same structure portrayed from different perspectives.
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Strand 4: Measurement			
Standard: Students will understand measurement systems and applications.			
<p>Develop an understanding of measurable properties (e.g., length and time) using appropriate concepts and vocabulary that includes time by estimating (e.g., longer, shorter, minutes, hours, days, weeks)</p> <p>Use digital and analog (face) clocks to tell time to the half hour (year long)</p>		<p>Develop an understanding of measurable properties (e.g., volume, weight, area) using appropriate concepts and vocabulary that include: (a) length measuring and estimating (e.g., longer, shorter, meter, centimeter, inch, yard, (b) areas by measuring and estimating, (e.g., perimeter, rectangles, squares)</p>	
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Strand 5: Data Analysis and Probability			
Standard: Students will understand how to formulate questions, analyze data, and determine probabilities.			
<p>Gather data by interviewing, surveying, and making observations</p> <p>Represent data using objects, pictures, tables, and simple bar graphs (year long).</p> <p>Discuss the likelihood of events using terminology such as “more likely”, “less likely”, “possible” or “certain” (year long).</p> <p>Organize data into appropriate categories by sorting based on shared properties</p> <p>Observe, explore, and discuss whether some events occur more often than others (e.g., tossing two die and recording the sum after each toss to explore whether or not certain sums occur more frequently than others (year long).</p>	<p>Answer questions about how data can be gathered</p> <p>Collect, organize, represent, and compare data by category on graphs and charts to answer simple questions (year long).</p> <p>Compare parts of the data (e.g., “How many students in the class have lost only two teeth?”) to make statements about the data as a whole (e.g., “Most students in the class have lost only two teeth.”)</p> <p>Participate in discussions about selecting an appropriate way to display the data.</p> <p>Make conclusions based on data (e.g., whether or not other groups would reach similar conclusions based on the same data.</p> <p>Determine whether or not the data gathered helps answer the specific question that was posed.</p>	<p>Participate in discussions about selecting an appropriate way to display the data</p>	