

Albuquerque Public Schools

Mathematics Content and Performance Standards

K - 2 Matrix Cookies for Friends

APS content and performance standards that align to the K-2 task *Cookies for Friends* are grayed.

Strand I: Global Mathematical Processes

| Student's Name: | | | Grade Level: | | | School: | | | | | |
|-------------------------------|---|-------------------------|--------------|---|--|-------------------------------|--|--|--|-------------------------|------------|
| GRADE: K - 12 | | | | | | Global Mathematical Processes | | | | | |
| | | Evidence of Proficiency | | | | Evidence of Proficiency | | | | Evidence of Proficiency | |
| | | Nearing Proficiency | Proficient | | | Nearing Proficiency | Proficient | | | Nearing Proficiency | Proficient |
| Problem Solving and Reasoning | Develops resourcefulness and perseverance in problem solving in mathematics and other disciplines. | | | Recognizes when to use previously learned strategies to solve new problems. | | | Develops and uses strategies (e.g., breaking complex problems into simpler parts) for solving given problems. | | | | |
| | Monitors, discusses, and reflects on the process of mathematical problem solving. | | | | | | | | | | |
| Reasoning and Proof | Makes and investigates mathematical conjectures and uses them successfully in developing and evaluating mathematical arguments and proofs | | | Uses the concept of counterexample to test the legitimacy of an argument. | | | Develops a logical sequence of arguments leading to a valid conclusion or solution to a problem (e.g., statement/reasons, proof, informal proof, and algebraic steps). | | | | |
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| Communication | Works in teams to share ideas, to develop and coordinate group approaches to problems, and to communicate findings. | | | Communicates mathematical thinking coherently and clearly to others. | | | Analyzes and evaluates mathematical thinking and strategies of others. | | | | |
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| Student's Name: | | | Grade Level: | | School: | | |
|------------------------|--|-------------------------|--------------|---|-------------------------------|-------------------------|---|
| GRADE: K - 12 | | | | | Global Mathematical Processes | | |
| | | Evidence of Proficiency | | | | Evidence of Proficiency | |
| | | Nearing Proficiency | Proficient | | | Nearing Proficiency | Proficient |
| Connections | Relates applications to mathematical language in various modalities. | Nearing Proficiency | Proficient | Identifies and connects functions with real-world applications. | Nearing Proficiency | Proficient | Identifies 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). |
| | Investigates and explains the mathematics required for various careers. | Nearing Proficiency | Proficient | Recognizes and applies mathematics in contexts outside the mathematics course. | Nearing Proficiency | Proficient | |
| Representations | 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. | Nearing Proficiency | Proficient | Selects, applies, and translates among mathematical representations to solve problems. | Nearing Proficiency | Proficient | Uses representations to model and interpret physical, social, and mathematical phenomena. |
| | Uses manipulatives, calculators, computers, and other tools as appropriate in order to strengthen mathematical thinking, understanding, and power to build upon foundational concepts. | Nearing Proficiency | Proficient | | | | |

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Strand II: Number Sense and Operations K - 2

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|-----------------------------|--|--------------------------------|--------------|---|--------------------------------|-----------------------------|---|--------------------------------|------------|
| Student's Name: | | | Grade Level: | | School: | | | | |
| GRADE: KINDERGARTEN | | | | | | Number Sense And Operations | | | |
| | | Evidence of Proficiency | | | Evidence of Proficiency | | | Evidence of Proficiency | |
| Counting Skills | Counts orally from 1 to 30 and backward from 10 to 1. | Nearing Proficiency | Proficient | Reads numerals to 20 in and out of sequence. | Nearing Proficiency | Proficient | Writes numerals to 10 in order. | Nearing Proficiency | Proficient |
| | | | | | | | | | |
| Number Meaning | Demonstrates one-to-one correspondence by keeping track of quantities while counting. | Nearing Proficiency | Proficient | Creates a set of a given size. | Nearing Proficiency | Proficient | Connects numerals to the quantities they represent. | Nearing Proficiency | Proficient |
| | Demonstrates that the meaning of a number does not change no matter how objects are grouped. | Nearing Proficiency | Proficient | | | | | | |
| Number Relationships | Combines and separates sets of objects with quantities and identifies the parts and the whole. | Nearing Proficiency | Proficient | Orders quantities from least to most or most to least. | Nearing Proficiency | Proficient | Describes a quantity using the terms more, less, and same. | Nearing Proficiency | Proficient |
| | Estimates quantities and explains reasoning. | Nearing Proficiency | Proficient | | | | | | |
| Number Operations | Represents numbers in a variety of equivalent ways (e.g., dots, pictures, numerals). | Nearing Proficiency | Proficient | Combines and separates two single-digit numbers using pictures, stories, and objects to model the situation. | Nearing Proficiency | Proficient | Records numerical information using pictures, words, and/or numbers. | Nearing Proficiency | Proficient |
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| Fractions | Explores halves through part-whole relationships using real objects (e.g., cut several apples into 2 equal parts). | Nearing Proficiency | Proficient | | | | | | |
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| Student's Name: | | | Grade Level: | | School: | | | | |
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| GRADE: FIRST | | | | | Number Sense And Operations | | | | |
| | | Evidence of Proficiency | | | | Evidence of Proficiency | | | |
| Counting Skills | Counts orally to 100. | Nearing Proficiency | Proficient | Reads, writes, and sequences numbers to 100. | Nearing Proficiency | Proficient | Counts orally by 2s to 30 and by 5s and 10s to 100. | Nearing Proficiency | Proficient |
| | | | | | | | | | |
| Number Meaning | Forms and counts groups of objects (e.g., 2s, 5s, 10s). | Nearing Proficiency | Proficient | Groups objects by 10s and 1s to explore place value (e.g., 2 tens and 4 ones = 24). | Nearing Proficiency | Proficient | | Nearing Proficiency | Proficient |
| | | | | | | | | | |
| Number Relationships | Represents equivalent forms of the same number (i.e., part – part – whole) through the use of physical models, diagrams, and number expressions to 20 (e.g., $3+5=8$, $7+1=8$, $2+6=8$). | Nearing Proficiency | Proficient | Builds, estimates, and compares combinations of numbers to 20 in different ways using pictures, stories, and objects to model the combinations. | Nearing Proficiency | Proficient | Finds the sum or difference of two quantities up to 20 using symbols in problem-solving situations (e.g., $12+5=17$, $12-5=7$). | Nearing Proficiency | Proficient |
| | Examines the concept of ordered pairs by linking commonly paired relationships (e.g., How many legs do 3 chickens have?). | Nearing Proficiency | Proficient | Demonstrates that the number of objects (up to 20) does not change when the objects are moved or rearranged. | Nearing Proficiency | Proficient | Identifies one more than and one less than a given number. | Nearing Proficiency | Proficient |
| | Compares two three-digit numbers using greater than, less than, and equal to. | Nearing Proficiency | Proficient | | | | | | |

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| GRADE: FIRST | | | | Number Sense And Operations | | | |
|--------------------------|--|-------------------------|------------|--|---------------------|-------------------------|--|
| | | Evidence of Proficiency | | | | Evidence of Proficiency | |
| Number Operations | Constructs a mental image of combining and separating quantities in problem situations. | Nearing Proficiency | Proficient | Develops strategies and estimation skills for solving addition and subtraction problems. | Nearing Proficiency | Proficient | Records strategies for solving, combining, and separating problems using pictures, numbers, equations, and words. |
| | Identifies equal shares in examples of models partitioned with equal and unequal parts (e.g., share 12 M&M candies among 3 friends, share 11 apples among 5 friends). | Nearing Proficiency | Proficient | Uses estimation and other methods to justify whether or not an answer is reasonable (e.g., Will 25 marbles fit in this small container?). | Nearing Proficiency | Proficient | |
| Fractions | Examines halves and fourths using real objects or manipulatives. | Nearing Proficiency | Proficient | | | | |

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|-----------------------------|---|--------------------------------|------------|---|--|------------------------------------|---|---------------------|------------|--------------------------------|--|
| Student's Name: | | | | Grade Level: | | School: | | | | | |
| GRADE: SECOND | | | | | | Number Sense And Operations | | | | | |
| | | Evidence of Proficiency | | | | Evidence of Proficiency | | | | Evidence of Proficiency | |
| Counting Skills | Reads, writes and sequences numbers to 200. | Nearing Proficiency | Proficient | Explains numbers to 1,000 using a variety of strategies (e.g., manipulatives, numbers, drawing, words). | Nearing Proficiency | Proficient | Counts by 2s to 100, by 5s and 10s to 200 and by 100s to 1,000. | Nearing Proficiency | Proficient | | |
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| Number Meaning | Applies patterns in skip counting; compares and defends the relationship between skip counting, grouping, and equal sets. | Nearing Proficiency | Proficient | Explains that digits stand for different amounts in different place value positions (e.g., 22 means 2 groups of ten and 2 ones). | Nearing Proficiency | Proficient | | | | | |
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| Number Relationships | Develops fluency with 10 as an important (anchor, landmark, friendly) number and applies it in problem situations. | Nearing Proficiency | Proficient | Analyzes relationships of quantities to 20 using part – part - whole (e.g., 1+7, 2+6, 3+5, 4+4: all equal 8.). | Nearing Proficiency | Proficient | Uses and explains strategies for recalling addition and subtraction facts to 18. | Nearing Proficiency | Proficient | | |
| | Makes and defends a reasonable estimate of quantities up to 200 in problem situations. | Nearing Proficiency | Proficient | | Identifies number sequences (e.g., 12, 14, 16... what comes next?). | Nearing Proficiency | | Proficient | | | |

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| GRADE: SECOND | | | | Number Sense And Operations | | | |
|--------------------------|---|-------------------------|------------|---|---------------------|-------------------------|--|
| | | Evidence of Proficiency | | | | Evidence of Proficiency | |
| Number Operations | Uses and explains multiple strategies to solve addition and subtraction problems, with and without re-grouping, using two-digit numbers. | Nearing Proficiency | Proficient | Decomposes and recombines numbers in logical ways to solve problems (e.g., $8+5 = (3+5)+5 = 3+(5+5) = 3+10=13$). | Nearing Proficiency | Proficient | Writes addition and subtraction equations for problem situations with one- or two-digit numbers using vertical or horizontal formats. |
| | Develops story problems to match given equations. | Nearing Proficiency | Proficient | Uses and explains mental math strategies to solve problems (e.g., children solve problems without pencil and paper). | Nearing Proficiency | Proficient | Solves the two types of situational subtraction problems: comparing two sets of objects and separating parts from whole. |
| | Describes the inverse relationship between addition and subtraction. | Nearing Proficiency | Proficient | Estimates sums and differences of one- and two-digit numbers and explains whether the answer is reasonable. | Nearing Proficiency | Proficient | Explains properties of addition (e.g., associative, commutative, and identity property of 0). |
| Fractions | Models how many parts make a whole using equal fractional parts. | Nearing Proficiency | Proficient | | | | |

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Strand V: Patterns, Functions and Algebraic Concepts K - 2

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| Student's Name: | | | | Grade Level: | | School: | | | | | |
| GRADE: KINDERGARTEN | | | | | | Patterns, Functions and Algebraic Concepts | | | | | |
| | | Evidence of Proficiency | | | | Evidence of Proficiency | | | | Evidence of Proficiency | |
| Patterns | Identifies, describes, and extends patterns with familiar objects in both classroom and real-life situations. | Nearing Proficiency | Proficient | Creates, describes, and extends patterns. | Nearing Proficiency | Proficient | | | | | |
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| GRADE: FIRST | | | | | | Patterns, Functions and Algebraic Concepts | | | | | |
| | | Evidence of Proficiency | | | | Evidence of Proficiency | | | | Evidence of Proficiency | |
| Patterns | Identifies, describes, creates, and extends patterns observed in familiar objects in real-life situations (e.g. 1 child = 2 eyes, 2 children = 4 eyes). | Nearing Proficiency | Proficient | Describes how a pattern develops, repeats, and builds toward more complex patterns. | Nearing Proficiency | Proficient | | | | | |
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| GRADE: SECOND | | | | | | Patterns, Functions and Algebraic Concepts | | | | | |
| | | Evidence of Proficiency | | | | Evidence of Proficiency | | | | Evidence of Proficiency | |
| Patterns | Describes, creates, and extends a wide variety of patterns. | Nearing Proficiency | Proficient | Identifies patterns in the number system (e.g., 5, 10, 15...). | Nearing Proficiency | Proficient | Develops and applies more complex patterns and relationships in real-life and mathematical problem situations. | Nearing Proficiency | Proficient | | |
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