

Grade 4

Grade 4 SPI 0406.1.1	Verify a conclusion using the commutative, associative and distributive properties.	NCP	28-32	Apply number properties involving positive/negative number	NPO	4	5e) Apply basic properties of operations.
			33-36	Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers			
Grade 4 SPI 0406.1.2	Compare decimals using concrete and pictorial representations.	NCP	20-23	Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor	NPO	4	1e) Connect model, number word, or number using various models and representations for whole numbers, fractions, and decimals.
Grade 4 SPI 0406.1.3	Determine the correct change from a transaction.	BOA	16-19	Solve some routine two-step arithmetic problems	NPO	4	3a) Add and subtract: <ul style="list-style-type: none">• Whole numbers, or• Fractions with like denominators, or• Decimals through hundredths.

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			20-23	Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average			
Grade 4 SPI 0406.1.4	Compare objects with respect to a given geometric or physical attribute and select appropriate measurement instrument				MEAS	4	1c) Estimate the size of an object with respect to a given measurement attribute (e.g., length, perimeter, or area using a grid).
Grade 4 SPI 0406.2.1	Read and write numbers from hundredths to hundred-thousands in numerals and in words.	NCP	16-19	Identify a digit's place value	NPO	4	1c) Compose or decompose whole quantities by place value (e.g., write whole numbers in expanded notation using place value: $342 = 300 + 40 + 2$).
Grade 4 SPI 0406.2.2	Locate and place mixed numbers on the number line.	GR	13-15 16-19	Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant	NPO	4 8	b) Represent numbers using models such as base 10 representations, number lines, and two-dimensional models. 1b) Model or describe rational numbers or numerical relationships using number lines and diagrams.
Grade 4 SPI 0406.2.3	Identify the place value of a specified digit in a number and the quantity it represents.	NCP	16-19	Identify a digit's place value	NPO	4	1a) Identify the place value and actual value of digits in whole numbers.
Grade 4 SPI 0406.2.4	Find factors, common factors, multiples, and common multiples of two numbers.	NCP	13-15 20-23	Recognize one-digit factors of a number Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor	NPO	4	5b) Identify factors of whole numbers.

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			24-27	Work with numerical factors			
Grade 4 SPI 0406.2.5	Generate equivalent forms of common fractions and decimals and use them to compare size.	NCP	13-15	Recognize equivalent fractions and fractions in lowest terms	NPO	4 8	1e) Connect model, number word, or number using various models and representations for whole numbers, fractions, and decimals. 1i) Order or compare whole numbers, decimals, or fractions. e) Recognize, translate between, or apply multiple representations of rational numbers (fractions, decimals, and percents) in meaningful contexts.
Grade 4 SPI 0406.2.6	Use the symbols $<$, $>$ and $=$ to compare common fractions and decimals in both increasing and decreasing order.	NCP	13-15 20-23 24-27	Recognize equivalent fractions and fractions in lowest terms Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor Order fractions	NPO	4	1i) Order or compare whole numbers, decimals, or fractions.
Grade 4 SPI 0406.2.7	Convert improper fractions into mixed numbers and/or decimals.	BOA	16-19	Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems	NPO	4	2a) Use benchmarks (well-known numbers used as meaningful points for comparison) for whole numbers, decimals, or fractions in contexts (e.g., $\frac{1}{2}$ and $.5$ may be used as benchmarks for fractions and decimals between 0 and 1.00).
Grade 4 SPI 0406.2.8	Add and subtract proper fractions with like and unlike denominators and simplify the answer.	BOA	16-19	Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent	NPO	4	3a) Add and subtract: <ul style="list-style-type: none"> • Whole numbers, or • Fractions with like denominators, or • Decimals through hundredths.

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Grade 4 SPI 0406.2.9	Add and subtract decimals through hundredths.	BOA	13-15 16-19	Perform one-operation computation with whole numbers and decimals Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent	NPO	4	3a) Add and subtract: <ul style="list-style-type: none"> • Whole numbers, or • Fractions with like denominators, or • Decimals through hundredths.
Grade 4 SPI 0406.2.10	Solve contextual problems using whole numbers, fractions, and decimals.	BOA	13-15 16-19 20-23	Solve problems in one or two steps using whole numbers Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent Solve some routine two-step arithmetic problems Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and computing with a given average	NPO	4	3f) Solve application problems involving numbers and operations.
Grade 4 SPI 0406.2.11	Solve problems using whole number multi-digit multiplication.	BOA	13-15	Perform one-operation computation with whole numbers and decimals Solve problems in one or two steps using whole numbers	NPO	4	3b) Multiply whole numbers: <ul style="list-style-type: none"> • No larger than two-digit by two-digit with paper and pencil computation, or • Larger numbers with use of calculator.
Grade 4 SPI 0406.2.12	Solve problems using whole number division with one- or two-digit divisors	BOA	13-15	Perform one-operation computation with whole numbers and decimals Solve problems in one or two steps using whole numbers	NPO	4	3c) Divide whole numbers: <ul style="list-style-type: none"> • Up to three-digits by one-digit with paper and pencil computation, or • Up to five-digits by two-digits with use of calculator.

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			16-19	Solve routine one-step arithmetic problems (using whole numbers, fractions, and decimals) such as single-step percent			
Grade 4 SPI 0406.3.1	Use letters and symbols to represent an unknown quantity and write a simple mathematical expression.	EEl	13-15	Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$)	ALG	4	3a) Use letters and symbols to represent an unknown quantity in a simple mathematical expression. 3b) Express simple mathematical relationships using number sentences.
Grade 4 SPI 0406.3.2	Make generalizations about geometric and numeric patterns.	NCP	20-23	Exhibit knowledge of elementary number concepts including rounding, the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor	ALG	4 4	1a) Recognize, describe, or extend numerical patterns. 1d) Create a different representation of a pattern or sequence given a verbal description.
Grade 4 SPI 0406.3.3	Represent and analyze patterns using words, function tables, and graphs				GEO	4	3a) Analyze or describe patterns of geometric figures by increasing number of sides, changing size or orientation (e.g., polygons with more and more sides).
Grade 4 SPI 0406.4.1	Classify lines and line segments as parallel, perpendicular, or intersecting.				GEO	4	4a) Describe relative positions of points and lines using the geometric ideas of parallelism or perpendicularity.
Grade 4 SPI 0406.4.2	Graph and interpret points with whole number or letter coordinates on grids or in the first quadrant of the coordinate plane.	GR	13-15 16-19	Identify the location of a point with a positive coordinate on the number line Locate points on the number line and in the first quadrant	ALG	4	2c) Graph or interpret points with whole number or letter coordinates on grids or in the first quadrant of the coordinate plane.
Grade 4 SPI 0406.4.3	Construct geometric figures with vertices at points on a coordinate grid.				GEO	4	1c) Identify or draw angles and other geometric figures in the plane.
Grade 4 SPI 0406.4.4	Identify acute, obtuse, and right angles in 2-	PPF	20-23	Exhibit knowledge of basic angle properties and special sums of angle	GEO	8	1c) Identify, define, or describe geometric shapes in the plane and in three-dimensional

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	dimensional shapes.			measures (e.g., 90°, 180°, and 360°)			space given a visual representation.
Grade 4 SPI 0406.4.5	Identify attributes of simple and compound figures composed of 2- and 3- dimensional shapes.				GEO	4	3 f) Describe and compare properties of simple and compound figures composed of triangles, squares, and rectangles.
Grade 4 SPI 0406.4.6	Determine situations in which a highly accurate measurement is important.				MEAS	4	2e) Determine situations in which a highly accurate measurement is important.
Grade 4 SPI 0406.4.7	Determine appropriate size of unit of measurement in problem situations involving length, capacity or weight.				MEAS	4	2d) Determine appropriate size of unit of measurement in problem situation involving such attributes as length, time, capacity, or weight.
Grade 4 SPI 0406.4.8	Convert measurements within a single system that are common in daily life (e.g., hours and minutes, inches and feet, centimeters and meters, quarts and gallons, liters and milliliters).	BOA	13-15	Perform common conversions (e.g., inches to feet or hours to minutes)	MEAS	4	2b) Solve problems involving conversions within the same measurement system such as conversions involving inches and feet or hours and minute.
Grade 4 SPI 0406.4.9	Solve problems involving area and/or perimeter of rectangular figures.	MEAS	16-19	Compute the perimeter of polygons when all side lengths are given Compute the area of rectangles when whole number dimensions are given	MEAS	4	1c) Estimate the size of an object with respect to a given measurement attribute (e.g., length, perimeter, or area using a grid).
			20-23	Compute the area and perimeter of triangles and rectangles in simple problems			
Grade 4 SPI 0406.4.10	Identify images resulting from reflections, translations, or rotations				GEO	4	2c) Identify the images resulting from flips (reflections), slides (translations), or turns (rotations).
Grade 4	Depict data using	PSDA	20-23	Translate from one representation of	DASP	4	1a) Read or interpret a single set of data.

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SPI 0406.5.1	various representations (e.g., tables, pictographs, line graphs, bar graphs).			data to another (e.g., a bar graph to a circle graph)			
Grade 4 SPI 0406.5.2	Solve problems using estimation and comparison within a single set of data.	PSDA	33-36	Analyze and draw conclusions based on information from figures, tables, and graphs	DASP	4	1c) Solve problems by estimating and computing within a single set of data.
Grade 4 SPI 0406.5.3	Given a set of data or a graph, describe the distribution of the data using median, range, or mode.	PSDA	33-36	Distinguish between mean, median, and mode for a list of numbers Analyze and draw conclusions based on information from figures, tables, and graphs	DASP	4	2b) Given a set of data or a graph, describe the distribution of the data using median, range, or mode.
Grade 4 SPI 0406.5.4	List all possible outcomes of a given situation or event				DASP	4	4e) List all possible outcomes of a given situation or event.