

READINESS STANDARDS - Grade 4 Math

(4.1) **Number, operation, and quantitative reasoning.** The student uses place value to represent whole numbers and decimals. The student is expected to

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| (B) use place value to read, write, compare, and order decimals involving tenths and hundredths, including money, using [concrete objects and] pictorial models | Place value, Decimal, Compare, Order |
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(4.2) **Number, operation, and quantitative reasoning.** The student describes and compares fractional parts of whole objects or sets of objects. The student is expected to

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| (D) relate decimals to fractions that name tenths and hundredths using [concrete objects and] pictorial models | Decimal, Fraction, Tenths, Hundredths |
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(4.4) **Number, operation, and quantitative reasoning.** The student multiplies and divides to solve meaningful problems involving whole numbers. The student is expected to

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| (D) use multiplication to solve problems (no more than two digits times two digits without technology) | Multiply, Solve, Digit |
| (E) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology) | Divide, Digit, Divisor, Dividend |

(4.7) **Patterns, relationships, and algebraic thinking.** The student uses organizational structures to analyze and describe patterns and relationships. The student is expected to

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| (A) describe the relationship between two sets of related data such as ordered pairs in a table | Related data, Ordered pair, Table |
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(4.8) **Geometry and spatial reasoning.** The student identifies and describes attributes of geometric figures using formal geometric language. The student is expected to

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| (C) use essential attributes to define two- and three-dimensional geometric figures | Attribute, Two-dimensional geometric figure, Three-dimensional geometric figure |
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(4.9) **Geometry and spatial reasoning.** The student connects transformations to congruence and symmetry. The student is expected to

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| (B) use translations, reflections, and rotations to verify that two shapes are congruent | Translation, Reflection, Rotation, Congruent |
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(4.10) **Geometry and spatial reasoning.** The student recognizes the connection between numbers and their properties and points on a line. The student is expected to

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| (A) locate and name points on a number line using whole numbers, fractions such as halves and fourths, and decimals such as tenths | Number line, Point, Fraction, Decimal |
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READINESS STANDARDS - Grade 4 Math

(4.11) **Measurement.** The student applies measurement concepts. The student is expected to estimate and measure to solve problems involving length (including perimeter) and area. The student uses measurement tools to measure capacity/volume and weight/mass. The student is expected to

(A) estimate and use measurement tools to determine length (including perimeter), area, capacity, and weight/mass using standard units SI (metric) and customary	Perimeter, Area, Capacity, Weight, Mass, Standard unit, SI (metric), Customary
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(4.13) **Probability and statistics.** The student solves problems by collecting, organizing, displaying, and interpreting sets of data. The student is expected to

(B) interpret bar graphs	Bar graph, Data
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SUPPORTING STANDARDS - Grade 4 Math

(4.1) **Number, operation, and quantitative reasoning.** The student uses place value to represent whole numbers and decimals. The student is expected to

(A) use place value to read, write, compare, and order whole numbers through 999,999,999	Place value, One, Ten hundred, Thousand, Ten thousand, Hundred thousand, Million, Compare, Order
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(4.2) **Number, operation, and quantitative reasoning.** The student describes and compares fractional parts of whole objects or sets of objects. The student is expected to

(A) use [concrete objects and] pictorial models to generate equivalent fractions	Equivalent, Fraction
(B) model fraction quantities greater than one using [concrete objects and] pictorial models	Greater than, Fraction
(C) compare and order fractions using [concrete objects and] pictorial models	Compare, Order

(4.3) **Number, operation, and quantitative reasoning.** The student adds and subtracts to solve meaningful problems involving whole numbers and decimals. The student is expected to

(A) use addition and subtraction to solve problems involving whole numbers	Add, Subtract
(B) add and subtract decimals to the hundredths place using [concrete objects and] pictorial models	Add, Subtract decimal, Tenths, Hundredths

(4.4) **Number, operation, and quantitative reasoning.** The student multiplies and divides to solve meaningful problems involving whole numbers. The student is expected to

(A) model factors and products using arrays and area models	Factor, Product, Array, Area
(B) represent multiplication and division situations in picture, word, and number form	Multiply, Divide
(C) recall and apply multiplication facts through 12 12	Multiply

(4.5) **Number, operation, and quantitative reasoning.** The student estimates to determine reasonable results. The student is expected to

(A) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations	Round, Nearest, Ten, Hundred, Thousand, Approximate, Reasonable
(B) use strategies including rounding and compatible numbers to estimate solutions to multiplication and division problems	Round, Compatible numbers, Estimate

SUPPORTING STANDARDS - Grade 4 Math

(4.6) **Patterns, relationships, and algebraic thinking.** The student uses patterns in multiplication and division. The student is expected to

(A) use patterns and relationships to develop strategies to remember basic multiplication and division facts (such as the patterns in related multiplication and division number sentences (fact families) such as $9 \times 9 = 81$ and $81 \div 9 = 9$)

Pattern, Fact family

(4.6) **Patterns, relationships, and algebraic thinking.** The student uses patterns in multiplication and division. The student is expected to

(B) use patterns to multiply by 10 and 100

Pattern

(4.8) **Geometry and spatial reasoning.** The student identifies and describes attributes of geometric figures using formal geometric language. The student is expected to

(A) identify and describe right, acute, and obtuse angles

Right angle, Acute angle, Obtuse angle

(B) identify and describe parallel and intersecting (including perpendicular) lines using [concrete objects and] pictorial models

Parallel line, Intersecting line

(4.9) **Geometry and spatial reasoning.** The student connects transformations to congruence and symmetry. The student is expected to

(C) use reflections to verify that a shape has symmetry

Reflection, Symmetry

(4.11) **Measurement.** The student applies measurement concepts. The student is expected to estimate and measure to solve problems involving length (including perimeter) and area. The student uses measurement tools to measure capacity/volume and weight/mass. The student is expected to

(B) perform simple conversions between different units of length, between different units of capacity, and between different units of weight within the customary measurement system

Conversion, Units, Customary measurement system

(C) use [concrete] models of standard cubic units to measure volume

Standard cubic unit, Volume

(D) estimate volume in cubic units

Volume, Cubic units

(E) explain the difference between weight and mass

Weight, Mass

(4.12) **Measurement.** The student applies measurement concepts. The student measures time and temperature (in degrees Fahrenheit and Celsius). The student is expected to

(A) use a thermometer to measure temperature and changes in temperature

Thermometer, Temperature, Hotter, Colder, Increase, Decrease

(B) use tools such as a clock with gears or a stopwatch to solve problems involving elapsed time

Clock, Gears, Stopwatch, Elapsed time, Later, Earlier, Before, After

(4.13) **Probability and statistics.** The student solves problems by collecting, organizing, displaying, and interpreting sets of data. The student is expected to

(A) use [concrete objects or] pictures to make generalizations about determining all possible combinations of a given set of data or of objects in a problem situation

Possible combinations, Data