

READINESS STANDARDS - Grade 7 Math

(7.1) **Number, operation, and quantitative reasoning.** The student represents and uses numbers in a variety of equivalent forms. The student is expected to

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| (B) convert between fractions, decimals, whole numbers, and percents mentally, on paper, [or with a calculator] | Fraction, Decimal, Percent, Equivalent, Simplify, Least common denominator, Greatest common factor |
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(7.2) **Number, operation, and quantitative reasoning.** The student adds, subtracts, multiplies, or divides to solve problems and justify solutions. The student is expected to

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| (B) use addition, subtraction, multiplication, and division to solve problems involving fractions and decimals | Sum, Difference, Total, Change, Product, Dividend, Divisor, Quotient, Factor, Reciprocal |
| (F) select and use appropriate operations to solve problems and justify the selections | Operations, Expression, Equation, Variable, Constant, Unknown |

(7.3) **Patterns, relationships, and algebraic thinking.** The student solves problems involving direct proportional relationships. The student is expected to

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| (A) estimate and find solutions to application problems involving percent | Percent of change, Percent of a number, Proportions |
| (B) estimate and find solutions to application problems involving proportional relationships such as similarity, scaling, unit costs, and related measurement units | Unit cost, Constant rate of change, Scale factor, Similarity, Scale |

(7.5) **Patterns, relationships, and algebraic thinking.** The student uses equations to solve problems. The student is expected to

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| (B) formulate problem situations when given a simple equation and formulate an equation when given a problem situation | Sum, Difference, Total, Product, Change, Expressions, Equation, Quotient |
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(7.6) **Geometry and spatial reasoning.** The student compares and classifies two- and three-dimensional figures using geometric vocabulary and properties. The student is expected to

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| (D) use critical attributes to define similarity | Attributes, Properties, Similar, Congruent, Proportional, Corresponding sides, Corresponding angles, Regular, Symmetric |
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(7.7) **Geometry and spatial reasoning.** The student uses coordinate geometry to describe location on a plane. The student is expected to

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| (B) graph reflections across the horizontal or vertical axis and graph translations on a coordinate plane | Axis, Coordinate, Coordinate plane, Ordered pair, Origin, Quadrants, X-axis, Y-axis |
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(7.9) **Measurement.** The student solves application problems involving estimation and measurement. The student is expected to

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| (A) estimate measurements and solve application problems involving length (including perimeter and circumference) and area of polygons and other shapes | Radius, Diameter, Circumference, Pi, Area, Perimeter, Square unit, Unit, Complex figures, Regular Polygon |
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(7.9) **Measurement.** The student solves application problems involving estimation and measurement. The student is expected to

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| (C) estimate measurements and solve application problems involving volume of prisms (rectangular and triangular) and cylinders | Prism, Base, Volume, Cubic units, Cylinder, Pi, Base area |
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(7.11) **Probability and statistics.** The student understands that the way a set of data is displayed influences its interpretation. The student is expected to

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| (B) make inferences and convincing arguments based on an analysis of given or collected data | Inference, Prediction |
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(7.12) **Probability and statistics.** The student uses measures of central tendency and variability to describe a set of data. The student is expected to

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| (B) choose among mean, median, mode, or range to describe a set of data and justify the choice for a particular situation | Measures of central tendency, Mean, Median, Mode, Range, Average |
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SUPPORTING STANDARDS - Grade 7 Math

(7.1) **Number, operation, and quantitative reasoning.** The student represents and uses numbers in a variety of equivalent forms. The student is expected to

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| (A) compare and order integers and positive rational numbers | Symbols such as $<$ and $>$, Least common denominator (LCD), Numerator, Positive, Negative, Integer, Non-negative, Rational numbers, Irrational numbers |
| (C) represent squares and square roots using geometric models | Power, Exponent, Base, Perfect square, Square root, Radical sign |

(7.2) **Number, operation, and quantitative reasoning.** The student adds, subtracts, multiplies, or divides to solve problems and justify solutions. The student is expected to

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| (A) represent multiplication and division situations involving fractions and decimals with models, including [concrete objects,] pictures, words, and numbers | Reciprocal, Product, Quotient, Dividend, Divisor |
| (C) use models, such as [concrete objects,] pictorial models, and number lines, to add, subtract, multiply, and divide integers and connect the actions to algorithms | Positive integer, Negative integer |
| (D) use division to find unit rates and ratios in proportional relationships such as speed, density, price, recipes, and student-teacher ratio | Proportional, Unit rate, Scale factor, Ratio, Constant rate of change |
| (E) simplify numerical expressions involving order of operations and exponents | Expression, Grouping symbols, Parenthesis, Simplify, Evaluate, Exponent |
| (G) determine the reasonableness of a solution to a problem | Reasonableness, Compatible numbers, Estimation, Approximate, Maximum, Minimum, Justify, Range |

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(7.4) **Patterns, relationships, and algebraic thinking.** The student represents a relationship in numerical, geometric, verbal, and symbolic form. The student is expected to

(A) generate formulas involving unit conversions within the same system (customary and metric), perimeter, area, circumference, volume, and scaling	Formulas, Unit conversions, Customary, Metric
(B) graph data to demonstrate relationships in familiar concepts such as conversions, perimeter, area, circumference, volume, and scaling	Conversions, Perimeter, Area, Circumference, Volume, Scaling, Increments
(C) use words and symbols to describe the relationship between the terms in an arithmetic sequence (with a constant rate of change) and their positions in the sequence	Constant rate of change, Common difference, Arithmetic sequence, Sequence, Terms, Position, Nth term, Value of a term, Rule

(7.5) **Patterns, relationships, and algebraic thinking.** The student uses equations to solve problems. The student is expected to

(A) use [concrete and] pictorial models to solve equations and use symbols to record the actions	Equation, Balance, Opposite, Inverse, Zero pair, Variable
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(7.6) **Geometry and spatial reasoning.** The student compares and classifies two- and three-dimensional figures using geometric vocabulary and properties. The student is expected to

(A) use angle measurements to classify pairs of angles as complementary or supplementary	Complementary angles, Supplementary angles, Straight angles, Vertex right angles, Ray, Protractor, Degrees
(B) use properties to classify triangles and quadrilaterals	Congruent, Diagonal, Isosceles, Scalene, Equilateral, Acute, Right, Obtuse, Vertices, Degree, Base angles, Parallelogram, Trapezoid, Rhombus, Square, Rectangle, Equiangular
(C) use properties to classify three-dimensional figures, including pyramids, cones, prisms, and cylinders	Base, Parallel, Parallel bases, Edges, Faces, Lateral surface, Vertices, Polygons

(7.7) **Geometry and spatial reasoning.** The student uses coordinate geometry to describe location on a plane. The student is expected to

(A) locate and name points on a coordinate plane using ordered pairs of integers	Axis, Coordinate, Coordinate plane, Ordered pair, Origin, Quadrants, X-axis, Y-axis
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(7.8) **Geometry and spatial reasoning.** The student uses geometry to model and describe the physical world. The student is expected to

(A) sketch three-dimensional figures when given the top, side, and front views	Front view, Side view, Top view, Three-dimensional, Two-dimensional, Solid
(B) make a net (two-dimensional model) of the surface area of a three-dimensional figure	Two-dimensional, Three-dimensional, Base parallel, Parallel bases, Edges, Faces, Vertices, Net, Dimensions, Surface area (define only)
(C) use geometric concepts and properties to solve problems in fields such as art and architecture	Two-dimensional, Three-dimensional, Base, Parallel, Parallel bases, Edges, Faces, Vertices, Perimeter, Circumference, Area, Volume

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(7.9) **Measurement.** The student solves application problems involving estimation and measurement. The student is expected to

(B) connect models for volume of prisms (triangular and rectangular) and cylinders to formulas of prisms (triangular and rectangular) and cylinders

Prism, Base, Volume, Cube, Cubic units, Cylinder, Base area (area of the base – B)

(7.10) **Probability and statistics.** The student recognizes that a physical or mathematical model (including geometric) can be used to describe the experimental and theoretical probability of real-life events. The student is expected to

(A) construct sample spaces for simple or composite experiments

Sample space, Tree diagram, Outcome, Event experiment, Theoretical probability, Experimental probability, Simple event, Composite event (compound event), Counting principle, Combinations

(B) find the probability of independent events

Sample space, Tree diagram, Outcome, Theoretical probability, Experimental probability, Event, Experiment, Simple event, Composite event, Independent event, Likely, Random

(7.11) **Probability and statistics.** The student understands that the way a set of data is displayed influences its interpretation. The student is expected to

(A) select and use an appropriate representation for presenting and displaying relationships among collected data, including line plot, line graph, bar graph, stem and leaf plot, circle graph, and Venn diagrams, and justify the selection

Scale, Interval, Line plot, Line graph, Stem and leaf plot, Circle graph, Venn diagram, Independent, Dependent, X axis, Y axis

(7.12) **Probability and statistics.** The student uses measures of central tendency and variability to describe a set of data. The student is expected to

(A) describe a set of data using mean, median, mode, and range

Measures of central tendency, Mean, Median, Mode, Range, Statistics