

Sixth Grade Math Assessment Framework
Standard 6A – Representations and Ordering

| | | Related Textbook pages | Related Additional Resources | Local Assessment Items |
|---|---|------------------------|------------------------------|------------------------|
| Read, Write, & Represent Numbers | 6.6.01 Read, write, recognize, and model equivalent representations of whole numbers and their place values. | | | |
| | 6.6.02 Read, write, recognize, model, and interpret numerical expressions from a given description or situation. | | | |
| | 6.6.03 Read, write, recognize, and model equivalent representations of fractions, including improper fractions and mixed numbers. | | | |
| | 6.6.04 Recognize, translate between, and apply multiple representations of decimals, fractions, percents (less than 100%), and mixed numbers (halves, quarters, fifths, and tenths). | | | |
| | 6.6.05 Read, write, recognize, and model equivalent representations of decimals and their place values through thousandths. | | | |
| | 6.6.06 Represent repeated factors using exponents. | | | |

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| Order & Compare Numbers | 6.6.07 Order and compare whole numbers. | | | |
| | 6.6.08 Order and compare decimals through thousandths. | | | |
| | 6.6.09 Order and compare fractions and mixed numbers having like or unlike denominators. | | | |
| Number Line | 6.6.10 Identify and locate decimals, fractions, and mixed numbers on a number line. | | | |
| Classifications of Numbers | 6.6.11 Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, factors/multiples, greater than, less than, square numbers, primes). | | | |

Standards 6B, 6C – Computation, Operations, Estimation, and Properties

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| Number Operations | 6.6.12 Solve problems and number sentences involving addition, subtraction, multiplication, and division using whole numbers. | | | |
| | 6.6.13 Solve problems and number sentences involving addition, subtraction, and multiplication of decimals. | | | |
| | 6.6.14 Solve problems involving addition and subtraction of fractions and mixed numbers, and express answers in simplest form. | | | |
| | 6.6.15 Identify and apply order of operations to simplify numeric expressions involving whole numbers. | | | |
| Properties | 6.6.16 Solve problems involving the commutative, distributive, and associative properties of operations on whole numbers [e.g., $(5 \times 7) \times 2 = 5 \times (7 \times 2)$]. | | | |
| Estimation | 6.6.17 Make estimates appropriate to a given situation, and analyze what effect the estimation method used has on the accuracy of results. | | | |

Standard 6D – Ratios, Proportions, and Percents

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| Identify & Express Ratios | 6.6.18 Identify and express ratios using appropriate notation (i.e., a/b , a to b , $a:b$), identify equivalent ratios, and explain ratios that represent a given situation. | | | |
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| Proportional Reasoning | 6.6.19 Solve problems involving proportional relationships, including unit pricing (e.g., seven apples cost \$1.40, so nine apples cost \$1.80). | | | |
| Percents | 6.6.20 Read, write, recognize, and model percents from 0% to 100%. | | | |
| | 6.6.21 Solve number sentences and problems involving percents. | | | |

Standards 7A, 7B, 7C – Units, Tools, Estimation, and Applications

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| Measurement Tools | 7.6.01 Select and use appropriate standard units and tools to measure length, mass/weight, capacity, and angles. | | | |
| Area, Perimeter, & Circumference | 7.6.02 Solve problems involving the perimeter and area of a triangle, parallelogram, or irregular shape using diagrams, models, and grids or by measuring or using given formulas (may include sketching a figure from its description). | | | |
| Equations | 7.6.03 Compare and estimate length (including perimeter), area, volume, weight/mass, and angles (0° to 180°) using referents. | | | |
| Volume & Surface Area | 7.6.04 Determine the volume of a right rectangular prism using an appropriate formula or strategy. | | | |

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| Measurement Conversions | 7.6.05 Solve problems involving unit conversions <u>within the same measurement system</u> for time, length, and weight/mass, including compound units (e.g., 5ft 5in, 2lbs 2oz). | | | |
| Indirect Measurements & Scale Drawings | 7.6.06 Solve problems involving scale drawings and maps. | | | |

Standard 8A – Representations, Patterns, and Expressions

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| Patterns | 8.6.01 Determine a missing term in a sequence, extend a sequence, and construct and identify a rule that can generate the terms of a given sequence (e.g., 3, 6, 9, . . . is explained by the rule $3n$, for $n \geq 1$). | | | |
| Write & Simplify Expressions | 8.6.02 Write an expression using variables to represent unknown quantities | | | |
| Evaluate Algebraic Expressions | 8.6.03 Evaluate algebraic expressions with up to two whole number variable values (e.g., evaluate $3m + n + 3$ when $m = 4$ and $n = 2$). | | | |

Standard 8B – Connections Using Tables, Graphs, and Symbols

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| Describing Change | 8.6.04 Determine a rule having two operations from an input–output table (e.g., multiply by 3 and add 2). | | | |
| Coordinate Systems | 8.6.05 Select a table of values that satisfies a linear equation, and recognize the ordered pairs on a rectangular coordinate system. | | | |
| Representations | 8.6.06 Translate between different representations (table, written, or pictorial) of whole number relationships. | | | |
| Inequalities | 8.6.07 Identify graphs of inequalities on a number line. | | | |

Standards 8C, 8D – Writing, Interpreting, and Solving Equations

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| Write Equations & Inequalities | 8.6.08 Represent problems with equations and inequalities. | | | |
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| Solve Equations and Inequalities | 8.6.09 Solve for the unknown in an equation with one operation (e.g., $8x = 24$, $m \div 2 = 25$). | | | |
| | 8.6.10 Solve word problems involving unknown quantities. | | | |

Standard 9A – Properties of Single Figures and Coordinate Geometry

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| Properties of Single Figures | 9.6.01 Classify, describe, and sketch regular and irregular two-dimensional shapes according to the number of sides, length of sides, number of vertices, and interior angles | | | |
| | 9.6.02 Identify and describe three-dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices). | | | |
| | 9.6.03 Solve problems using properties of triangles and quadrilaterals (e.g., sum of interior angles of a quadrilateral is 360°). | | | |
| Circles | 9.6.04 Identify, describe, and sketch circles, including radius, diameter, and chord. | | | |
| Coordinate Geometry | 9.6.05 Graph, locate, identify points, describe paths, and plot figures using ordered pairs (first quadrant). | | | |

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| Transformations | 9.6.06 Identify, describe, and predict results of reflections, translations, and rotations of two-dimensional shapes. | | | |
| Lines, Segments, Rays, & Angles | 9.6.07 Identify and sketch parallel, perpendicular, and intersecting lines. | | | |
| | 9.6.08 Identify and sketch acute, right, and obtuse angles. | | | |

Standard 9B – Relationships Between and Among Multiple Figures

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| Relationships Between Two- & Three-Dimensional Objects | 9.6.09 Identify a three-dimensional object from its net. | | | |
| Composing & Decomposing Figures | 9.6.10 Recognize which attributes (such as shape, perimeter, and area) change or don't change when plane figures are composed, decomposed, or rearranged. | | | |

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| Congruency and Similarity | 9.6.11 Identify congruent and similar figures by visual inspection. | | | |
| | 9.6.12 Determine if figures are similar, and identify relationships between corresponding parts of similar figures. | | | |
| Distance | 9.6.13 Determine the distance between two points on a horizontal or vertical number line. | | | |

Standard 9C – Justifications of Conjectures and Conclusions

This standard is not assessed in isolation. Rather, its essence is assessed indirectly through problems that require this type of thinking.

Standard 9D – Trigonometry

This standard is not assessed on the state assessment until grade 11.

Standards 10A, 10B – Data Analysis and Statistics

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| Read and Interpret Displays | 10.6.01 Read, interpret, and make predictions from data represented in a bar graph, line (dot) plot, Venn diagram (with two circles), chart/table, line graph, or circle graph. | | | |
| | 10.6.02 Compare different representations of the same data. | | | |
| Complete & Create Displays | 10.6.03 Create a bar graph, chart/table, line graph, or circle graph with common referents ($\frac{1}{4}$, 50%, .75) for a given set of data. | | | |

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| Statistics | 10.6.04 Determine the mode, range, median, and mean, given a set of data or a graph. | | | |
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Standard 10C – Probability

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| Probability | 10.6.05 Solve problems involving the probability of a simple event, including representing the probability as a fraction, decimal, or percent. | | | |
| Outcomes & Counting Principles | 10.6.06 Apply the fundamental counting principle in a simple problem (e.g., How many different 3–digit numbers can be made with the digits 1, 2, and 2?) | | | |