

Ohio Academic Content Standards, Grade 6 Indicators, Correlated to *Glencoe Mathematics: Applications and Concepts, Course 1*

Lessons in which the standards are a primary focus are indicated in **bold**.

Standards and Indicators		Student Edition Lesson(s)
Standard 1 Number, Number Sense and Operations		
Number and Number Systems		
N1	Decompose and recompose whole numbers using factors and exponents (e.g., $32 = 2 \times 2 \times 2 \times 2 \times 2 = 2^5$), and explain why “squared” means “second power” and “cubed” means “third power.”	1-3, 1-4
N2	Find and use the prime factorization of composite numbers. For example:	
N2a	Use the prime factorization to recognize the greatest common factor (GCF).	5-1
N2b	Use the prime factorization to recognize the least common multiple (LCM).	5-4
N2c	Apply the prime factorization to solve problems and explain solutions.	1-3, 1-4, 5-1, 5-4
N3	Explain why a number is referred to as being “rational,” and recognize that the expression $\frac{a}{b}$ can mean a parts of size $\frac{1}{b}$ each, a divided by b , or the ratio of a to b .	5-2a, 5-2, 5-3, 5-6, 10-1
N4	Describe what it means to find a specific percent of a number, using real-life examples.	10-7a, 10-7
N5	Use models and pictures to relate concepts of ratio, proportion and percent, including percents less than 1 and greater than 100.	10-1, 10-1b, 10-2, 10-2b, 10-3, 10-4, 10-5, 10-7a, 10-7
Meaning of Operations		
N6	Use the order of operations, including the use of exponents, decimals and rational numbers, to simplify numerical expressions.	1-5, 3-5, 4-2
N7	Use simple expressions involving integers to represent and solve problems; e.g., if a running back loses 15 yards on the first carry but gains 8 yards on the second carry, what is the net gain/loss?	8-1, 8-2, 8-3, 8-4, 8-5
N8	Represent multiplication and division situations involving fractions and decimals with models and visual representations; e.g., show with pattern blocks what it means to take $2\frac{2}{3} \div \frac{1}{6}$.	4-1a, 4-2a, 4-3, 4-4a, 7-1, 7-2a, 7-2, 7-4a
N9	Give examples of how ratios are used to represent comparisons; e.g., part-to-part, part-to-whole, whole-to-part.	10-1, 10-4
N10	Recognize that a quotient may be larger than the dividend when the divisor is a fraction; e.g., $6 \div \frac{1}{2} = 12$.	7-4a, 7-4
Computation and Estimation		
N11	Perform fraction and decimal computations and justify their solutions; e.g., using manipulatives, diagrams, mathematical reasoning.	3-4, 3-5, 4-1a, 4-1, 4-2a, 4-2, 4-3, 4-4a, 4-4, 4-5, 4-6, 6-2, 6-3, 6-4, 6-5, 6-6, 7-1, 7-2a, 7-2, 7-3, 7-4a, 7-4, 7-5
N12	Develop and analyze algorithms for computing with fractions and decimals, and demonstrate fluency in their use.	3-5, 4-1, 4-2, 4-3, 4-4, 6-3, 6-4, 6-5, 6-6, 7-2, 7-3, 7-4, 7-5
N13	Estimate reasonable solutions to problem situations involving fractions and decimals; e.g., $\frac{7}{8} + \frac{12}{13} \approx 2$ and $4.23 \times 5.8 \approx 25$.	3-4, 3-5, 4-1, 4-2, 4-3, 4-4, 4-4b, 6-2, 6-3, 6-5, 6-6, 7-2, 7-3, 7-5

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N14	Use proportional reasoning, ratios and percents to represent problem situations and determine the reasonableness of solutions.	10-1 , 10-2, 10-2b, 10-3, 10-3b, 10-5, 10-6, 10-7a, 10-7 , 10-8, 11-1 , 11-1b, 11-3
N15	Determine the percent of a number and solve related problems; e.g., find the percent markdown if the original price was \$140, and the sale price is \$100.	10-7a , 10-7 , 10-8a, 10-8
Standard 2 Measurement		
Measurement Units		
M1	Understand and describe the difference between surface area and volume.	14-5, 14-6
Use Measurement Techniques and Tools		
M2	Use strategies to develop formulas for finding circumference and area of circles, and to determine the area of sectors; e.g., $\frac{1}{2}$ circle, $\frac{2}{3}$ circle, $\frac{1}{3}$ circle, $\frac{1}{4}$ circle.	4-6 , 14-3 , 14-3b
M3	Estimate perimeter or circumference and area for circles, triangles and quadrilaterals, and surface area and volume for prisms and cylinders by:	
M3a	estimating lengths using string or links, areas using tiles or grid, and volumes using cubes;	4-6, 12-1a, 12-1 , 12-3, 14-1, 14-2, 14-3, 14-5
M3b	measuring attributes (diameter, side lengths, or heights) and using established formulas for circles, triangles, rectangles, parallelograms and rectangular prisms.	1-8, 4-5, 4-6, 14-1 , 14-2a, 14-2 , 14-2b, 14-3, 14-5, 14-6
M4	Determine which measure (perimeter, area, surface area, volume) matches the context for a problem situation; e.g., perimeter is the context for fencing a garden, surface area is the context for painting a room.	1-8, 14-1, 14-2 , 14-3 , 14-5 , 14-6
M5	Understand the difference between perimeter and area, and demonstrate that two shapes may have the same perimeter, but different areas or may have the same area, but different perimeters.	12-1a , 12-1b
M6	Describe what happens to the perimeter and area of a two-dimensional shape when the measurements of the shape are changed; e.g. length of sides are doubled.	12-1a , 4-5, 12-1b
Standard 3 Geometry and Spatial Sense		
Characteristics and Properties		
G1	Classify and describe two-dimensional and three-dimensional geometric figures and objects by using their properties; e.g., interior angle measures, perpendicular/parallel sides, congruent angles/sides.	13-4 , 13-4b, 13-6, 14-4 , 14-4b
G2	Use standard language to define geometric vocabulary: vertex, face, altitude, diagonal, isosceles, equilateral, acute, obtuse and other vocabulary as appropriate.	13-1 , 13-4 , 13-4b, 14-1 , 14-4 ; <i>Glencoe Mathematics: Applications and Concepts</i> , Course 2, 10-7; Course 3, 7-1
G3	Use multiple classification criteria to classify triangles; e.g., right scalene triangle.	<i>Glencoe Mathematics: Applications and Concepts</i> , Course 2, 10-4; Course 3, 6-2
G4	Identify and define relationships between planes; i.e., parallel, perpendicular and intersecting.	13-1, 13-3, 13-4 , 14-4

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Spatial Relationships		
G5	Predict and describe sizes, positions and orientations of two-dimensional shapes after transformations such as reflections, rotations, translations and dilations.	13-5, 13-5b, 13-6b ; <i>Glencoe Mathematics: Applications and Concepts</i> , Course 3, 4-8
Transformations and Symmetry		
G6	Draw similar figures that model proportional relationships; e.g., model similar figures with a 1 to 2 relationship by sketching two of the same figure, one with corresponding sides twice the length of the other.	10-3b, 12-1a, 13-6
Visualization and Geometric Models		
G7	Build three-dimensional objects with cubes, and sketch the two-dimensional representations of each side; i.e., projection sets.	14-6a, 14-6
Standard 4 Patterns, Functions and Algebra		
Use Patterns, Relations and Functions		
P1	Represent and analyze patterns, rules and functions, using physical materials, tables and graphs.	7-6a, 9-6a, 9-6, 9-7
P2	Use words and symbols to describe numerical and geometric patterns, rules and functions.	7-6a, 7-6, 9-6a, 9-6, 9-7
Use Algebraic Representations		
P3	Recognize and generate equivalent forms of algebraic expressions, and explain how the commutative, associative and distributive properties can be used to generate equivalent forms; e.g., perimeter as $2(l + w)$ or $2l + 2w$.	9-1a, 9-1
P4	Solve simple linear equations and inequalities using physical models, paper and pencil, tables and graphs.	1-7, 9-2a, 9-2, 9-3a, 9-3, 9-4, 9-4b, 9-5, 9-6a, 9-6, 9-7
P5	Produce and interpret graphs that represent the relationship between two variables.	9-7
P6	Evaluate simple expressions by replacing variables with given values, and use formulas in problem-solving situations.	1-6, 3-5, 4-2
Analyze Change		
P7	Identify and describe situations with constant or varying rates of change, and compare them.	7-6, 9-6, 9-7, 10-1, 12-1a
P8	Use technology to analyze change; e.g., use computer applications or graphing calculators to display and interpret rate of change.	4-6b
Standard 5 Data Analysis and Probability		
Data Collection		
D1	Read, construct and interpret line graphs, circle graphs and histograms.	2-2, 2-2b, 2-3, 6-1
D2	Select, create and use graphical representations that are appropriate for the type of data collected.	2-1, 2-2, 2-3, 2-5, 6-6, 10-6
D3	Compare representations of the same data in different types of graphs, such as a bar graph and circle graph.	2-2, 2-2b, 2-3
Statistical Methods		
D4	Understand the different information provided by measures of center (mean, mode and median) and measures of spread (range).	2-6, 2-7, 2-6b

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D5	Describe the frequency distribution of a set of data, as shown in a histogram or frequency table, by general appearance or shape; e.g., number of modes, middle of data, level of symmetry, outliers.	2-1, 2-6, 2-7, 6-1
D6	Make logical inferences from statistical data.	2-4, 2-8
Probability		
D7	Design an experiment to test a theoretical probability and explain how the results may vary.	11-1, 11-1b, 11-5a