

**GLENCOE CORRELATION**  
**MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1**  
**OHIO**  
**Mathematics Grade-Level Indicators**  
**Grade Six**

STANDARDS	PAGE REFERENCES
<b>Number, Number Sense and Operations Standard</b>	
<i>Number and Number Systems</i>	
1. 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.”	SE: 18-21, 31 #57, 43, 131 #10 TWE: T 19
2. Find and use the prime factorization of composite numbers. For example: a. Use the prime factorization to recognize the greatest common factor (GCF). b. Use the prime factorization to recognize the least common multiple (LCM). c. Apply the prime factorization to solve problems and explain solutions.	SE: 15-17, 18, 178-180, 195-197 <i>The Game Zone</i> 191 TWE: DI 15, 178
3. 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 $b$ .	See <i>Mathematics: Applications and Concepts Course 2</i> page 229.
4. Describe what it means to find a specific percent of a number, using real-life examples.	SE: 409-412 <i>Hands-On Lab</i> 407-408
5. Use models and pictures to relate concepts of ratio, proportion and percent, including percents less than 1 and greater than 100.	SE: 380-383, 386-389, 391-393, 395-397, 400-403, 418-420 TWE: A 397 B 396, 400 DI 381, 395 T 405
<i>Meaning of Operations</i>	
6. Use the order of operations, including the use of exponents, decimals and rational numbers, to simplify numerical expressions.	SE: 24-27, 31 #49, 44, 46, 252 #2 TWE: A 27 T 25
7. 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?	SE: 28-31, 303, 307 TWE: DI 29 T 29
8. 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 $2\frac{2}{3} \div \frac{1}{6}$ .	SE: <i>Hands-On Lab</i> 134, 139-140, 150-151, 259-260, 270-271 <i>Mini Lab</i> 144, 261, 272 TWE: TT 150

STANDARDS	PAGE REFERENCES
9. Give examples of how ratios are used to represent comparisons; e.g., part-to-part, part-to-whole, whole-to-part.	SE: 380-383, 389 #32 & #33 TWE: A 382
10. Recognize that a quotient may be larger than the dividend when the divisor is a fraction; e.g., $6 \div \frac{1}{2} = 12$ .	SE: 272-275, 276-279 <i>Hands-On Lab</i> 270-271 TWE: PA 277
<b>Computation and Estimation</b>	
11. Perform fraction and decimal computations and justify their solutions; e.g., using manipulatives, diagrams, mathematical reasoning.	SE: 121-122, 131 #17, 228-229 <i>Hands-On Lab</i> 139-140, 150-151, 234, 259-260, 270-271 <i>Mini Lab</i> 144, 228, 240 TWE: B 121, 276
12. Develop and analyze algorithms for computing with fractions and decimals, and demonstrate fluency in their use.	TWE: A 238 DI 142
13. Estimate reasonable solutions to problem situations involving fractions and decimals; e.g., $\frac{7}{8} + \frac{12}{13} \approx 2$ and $4.23 \times 5.8 \approx 25$ .	SE: 116-119, 128, 223-225, 232 #10, 249 TWE: A 119 DI 223 T 117
14. Use proportional reasoning, ratios and percents to represent problem situations and determine the reasonableness of solutions.	SE: 380-383, 386-389, 391-393, 395-397, 418, 419, 423 #21 <i>Hands-On Lab</i> 384-385 <i>Spreadsheet Investigation</i> 390 TWE: A 397 PS 421 T 381, 387
15. 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.	SE: 409-412, 420, 421 #19, 423 #20 <i>Hands-On Lab</i> 407-408 TWE: DI 410
<b>Measurement Standard</b>	
<i>Measurement Units</i>	
1. Understand and describe the difference between surface area and volume.	SE: 570-573, 575-578, 580, 581 #11-#13 & #15 TWE: DI 571 PS 581 TNT 571
<i>Use Measurement Techniques and Tools</i>	
2. 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.	SE: <i>Mini Lab</i> 161, 556 TWE: B 161 DI 557

STANDARDS	PAGE REFERENCES
3. Estimate perimeter or circumference and area for circles, triangles and quadrilaterals, and surface area and volume for prisms and cylinders by: <ol style="list-style-type: none"> <li>estimating lengths using string or links, areas using tiles or grid, and volumes using cubes;</li> <li>measuring attributes (diameter, side lengths, or heights) and using established formulas for circles, triangles, rectangles, parallelograms and rectangular prisms.</li> </ol>	SE: 158, 551-554, 556-559, 571, 581, 637 <i>Hands-On Lab</i> 550, 555 <i>Mini Lab</i> 158, 161, 546, 570, 575 TWE: A 559, 573 B 161, 551 DI 547 T 557
4. 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.	SE: 40 eg. #2, 160 #18, 571 eg. #2, 572 #20, 576 eg. #2, 627 #10 & #12 TWE: B 158
5. 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.	SE: 171 #16, 475 #5-#7, 554 #21 <i>Spreadsheet Investigation</i> 469 TWE: DI 159
6. 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.	SE: 159 #2, 160 #19, 171 #16 <i>Hands-On Lab</i> 464 <i>Spreadsheet Investigation</i> 469
<b>Geometry and Spatial Sense Standard</b>	
<i>Characteristics and Properties</i>	
1. 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.	SE: 522-525, 540, 549 #22-26, 564-566 <i>Hands-On Lab</i> 513-514, 526-527, 550 TWE: B 522 DI 523 T 565
2. Use standard language to define geometric vocabulary: vertex, face, altitude, diagonal, isosceles, equilateral, acute, obtuse and other vocabulary as appropriate.	SE: 506-509, 522-525, 564 <i>Hands-On Lab</i> 526-527 TWE: B 506
3. Use multiple classification criteria to classify triangles; e.g., right scalene triangle.	See <i>Mathematics: Applications and Concepts Course 2</i> page 429. See <i>Mathematics: Applications and Concepts Course 3</i> page 263.
4. Identify and define relationships between planes; i.e., parallel, perpendicular and intersecting.	SE: 522-525, 549, 564 TWE: T 523 DI 529
<i>Spatial Relationships</i>	
5. Predict and describe sizes, positions and orientations of two-dimensional shapes after transformations such as reflections, rotations, translations and dilations.	SE: 529-531 <i>Hands-On Lab</i> 532-533, 537 TWE: TNT 528

STANDARDS	PAGE REFERENCES
<i>Transformations and Symmetry</i>	
6. 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.	SE: 534-536, 541 #14 & #15 <i>Hands-On Lab</i> 532-533 TWE: B 534 DI 391
<i>Visualization and Geometric Models</i>	
7. Build three-dimensional objects with cubes, and sketch the two-dimensional representations of each side; i.e., projection sets.	TWE: A 565 TNT 576
<b>Patterns, Functions and Algebra Standard</b>	
<i>Use Patterns, Relations and Functions</i>	
1. Represent and analyze patterns, rules and functions, using physical materials, tables and graphs.	SE: 47 #25, 56-59, 171 #9, 194, 282-284, 362-365 <i>Hands-On Lab</i> 532-533 <i>Problem-Solving Strategy</i> 280-281, 448-449 TWE: A 531 B 66, 362 DI 68
2. Use words and symbols to describe numerical and geometric patterns, rules and functions.	SE: 185 #37-#39, 194, 282-284, 362-365, 543 <i>Hands-On Lab</i> 260 #4, 343 #2, 354 #3, 360-361, 537 <i>Mini Lab</i> 219 <i>Problem-Solving Strategy</i> 280-281 TWE: A 185, 531 B 194, 280, 282 DI 153, 351
<i>Use Algebraic Representations</i>	
3. 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 $2l + 2w$ .	SE: 24-27, 158-160, 333-336, 348, 370 <i>Hands-On Lab</i> 271 #4, 332 TWE: A 336 T 259, 337
4. Solve simple linear equations and inequalities using physical models, paper and pencil, tables and graphs.	SE: 339-340, 344, 350, 371 <i>Hands-On Lab</i> 337-338, 343, 354 TWE: DI 340
5. Produce and interpret graphs that represent the relationship between two variables.	SE: 362-365, 366-369, 372, 375 #21
6. Evaluate simple expressions by replacing variables with given values, and use formulas in problem-solving situations.	SE: 28-31, 39-41, 44, 124 #40, 160 #18, 171 #16, 624 #10 TWE: A 31 DI 29 T 29
<i>Analyze Change</i>	
7. Identify and describe situations with constant or varying rates of change, and compare them.	See <i>Mathematics: Applications and Concepts Course 2</i> page 296. See <i>Mathematics: Applications and Concepts Course 3</i> pages 160-165.

<b>STANDARDS</b>	<b>PAGE REFERENCES</b>
8. Use technology to analyze change; e.g., use computer applications or graphing calculators to display and interpret rate of change.	See <i>Mathematics: Applications and Concepts Course 3</i> . SE: <i>Spreadsheet Investigation</i> 165 TWE: DI 161
<b>Data Analysis and Probability Standard</b>	
<i>Data Collection</i>	
1. Read, construct and interpret line graphs, circle graphs and histograms.	SE: 56-59, 62-65, 91, 222 #39 & #40 <i>Spreadsheet Investigation</i> 60-61 TWE: A 59 B 62 T 63
2. Select, create and use graphical representations that are appropriate for the type of data collected.	SE: 51, 56-59, 65 #16 & #17, 74 #21-#22, 75 #33, 78 #23, 245, 404 TWE: DI 57 T 51, 63
3. Compare representations of the same data in different types of graphs, such as a bar graph and circle graph.	SE: 59 #16 <i>Mini Lab</i> 62 <i>Spreadsheet Investigation</i> 60-61 TWE: A 59 B 56
<i>Statistical Methods</i>	
4. Understand the different information provided by measures of center (mean, mode and median) and measures of spread (range).	SE: 76-78, 80-83, 92, 95 #13 <i>Spreadsheet Investigation</i> 79 TWE: A 83 T 77
5. 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.	SE: 50-53, 70 #1, 77-78, 222 #39 & #40, 625 #10-#15 TWE: B 50, 80
<i>Probability</i>	
6. Make logical inferences from statistical data.	SE: 86-89, 92, 95 #14, 625 #9 TWE: DI 63
7. Design an experiment to test a theoretical probability and explain how the results may vary.	SE: 428-431 <i>Problem-Solving Strategy</i> 448 TWE: DI 429

### Codes Used for TWE Pages

A	Assess
B	Bellringer
DI	Daily Intervention
PA	Practice/Apply
PS	Portfolio Suggestion
T	Teach
TNT	Tips for New Teachers
TT	Teaching Tip