Correlation of

GEOMETRY:
Mathematics in Context,
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to

Ohio's Academic Content Standards:
K–12 Mathematics Benchmarks — by the end of the 8–10 program:

BENCHMARK	PAGE REFERENCES
NUMBER, NUMBER SENSE AND OPERATIONS	
A. Use scientific notation to express large numbers and numbers less than one.	Covered in *Algebra I: Mathematics in Context*
B. Identify subsets of the real number system.	Covered in *Algebra I: Mathematics in Context*
C. Apply properties of operations and the real number system and justify when they hold for a set of numbers.	95–102, 170–178
D. Connect physical, verbal and symbolic representations of integers, rational numbers and irrational numbers	501–503
E. Compare, order and determine equivalent forms of real numbers.	Covered in *Algebra I: Mathematics in Context*
F. Explain the effects of operations on the magnitude of quantities.	Covered in *Algebra I: Mathematics in Context*
G. Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions.	310–315
H. Find the square root of perfect squares, and approximate the square root of non-perfect squares.	501–503
I. Estimate, compute and solve problems involving scientific notation, square roots and numbers with integer exponents.	341–347, 348–353, 369–371

BENCHMARK	PAGE REFERENCES
MEASUREMENT	
A. Solve increasingly complex non-routine measurement problems and check for reasonableness of results.	12–18, 44–45, 331–334, 367–369
B. Use formulas to find surface area and volume for specified three-dimensional objects accurate to a specified level of precision.	596–604, 605–611, 612–618, 619–625, 626–636, 647–649, 650–666
C. Apply indirect measurement techniques, tools and formulas, as appropriate, to find perimeter, circumference and area of circles, triangles, quadrilaterals and composite shapes, and to find volume of prisms, cylinders, and pyramids.	256–261, 331–334, 367–369, 458–464, 465–470, 471–476, 477–480, 481–486, 487–491, 504–513, 596–604, 605–611, 612–618
D. Use proportional reasoning and apply indirect measurement techniques, including right triangle trigonometry and properties of similar triangles, to solve problems involving measurements and rates.	310–315, 316–322, 323–330, 331–334, 335–340, 341–347, 348–353, 367–369, 370–371, 373–385, 386–387, 487–491
E. Estimate and compute various attributes, including length, angle measure, area, surface area and volume, to a specified level of precision.	12–18, 19–25, 162–170, 256–261, 262–267, 268–272, 273–278, 279–284, 285–290, 291–292, 297–305
F. Write and solve real-world, multi-step problems involving money, elapsed time and temperature, and verify reasonableness of solutions.	124, 125, 132, 134, 135, 194, 195, 242, 373, 374, 447–448, 449

BENCHMARK	PAGE REFERENCES
GEOMETRY AND SPATIAL SENSE	
A. Formally define geometric figures.	4–11, 51, 53, 140–147, 162–170, 231–236, 256–261, 268–269
B. Describe and apply the properties of similar and congruent figures; and justify conjectures involving similarity and congruence.	204–210, 211–217, 218–223, 224–230, 310–315, 316–322, 323–330, 335–340
C. Recognize and apply angle relationships in situations involving intersecting lines, perpendicular lines and parallel lines.	23, 26–29, 30–34, 103–109, 110–114, 122, 148–154, 155–161, 162–170, 171–178, 179–183, 200–201
D. Use coordinate geometry to represent and examine the properties of geometric figures.	390–396, 397–403, 405–412, 421–428, 429–437, 438443, 444–453, 454–455, 518–524, 557–563
E. Draw and construct representations of two - and three-dimensional geometric objects using a variety of tools, such as straightedge, compass and technology.	4–11, 36–43, 46–50, 52, 557–563, 582–588, 589–595, 637–641, 642–646
F. Represent and model transformations in a coordinate plane and describe the results.	666–673, 674–680, 681–687, 688–693, 694–697, 698–704, 705–711, 712–720, 721–730
G. Prove or disprove conjectures and solve problems involving two - and three-dimensional objects represented within a coordinate system.	23, 103–109, 155–161, 184–187, 211–217, 421–428
H. Establish the validity of conjectures about geometric objects, their properties and relationships by counter-example, inductive and deductive reasoning, and critiquing arguments made by others.	23, 68–73, 74–79, 80–84, 85–94, 95–102, 103–109, 115–120, 123–135, 188–189
I. Use right triangle trigonometric relationships to determine lengths and angle measures.	354–360, 361–366

BENCHMARK	PAGE REFERENCES
PATTERNS, FUNCTIONS AND ALGEBRA	
A. Generalize and explain patterns and sequences in order to find the next term and the nth term.	68–73
B. Identify and classify functions as linear or nonlinear, and contrast their properties using tables, graphs or equations.	Covered in *Algebra I: Mathematics in Context*
C. Translate information from one representation (words, table, graph or equation) to another representation of a relation or function.	413–420
D. Use algebraic representations, such as tables, graphs, expressions, functions and inequalities, to model and solve problem situations.	413–420
E. Analyze and compare functions and their graphs using attributes, such as rates of change, intercepts and zeros.	140–147, 405–412
F. Solve and graph linear equations and inequalities.	Covered in *Algebra I: Mathematics in Context*
G. Solve quadratic equations with real roots by graphing, formula and factoring.	Covered in *Algebra I: Mathematics in Context*
H. Solve systems of linear equations involving two variables graphically and symbolically.	Covered in *Algebra I: Mathematics in Context*
I. Model and solve problem situations involving direct and inverse variation.	Covered in *Algebra I: Mathematics in Context*
J. Describe and interpret rates of change from graphical and numerical data.	140–147, 405–412

BENCHMARK	PAGE REFERENCES
DATA ANLYSIS AND PROBABILITY	
A. Create, interpret and use graphical displays and statistical measures to describe data; e.g., box-and-whisker plots, histograms, scatterplots, measures of center and variability.	Covered in *Algebra I: Mathematics in Context*
B. Evaluate different graphical representations of the same data to determine which is the most appropriate representation for an identified purpose.	Covered in *Algebra I: Mathematics in Context*
C. Compare the characteristics of the mean, median and mode for a given set of data, and explain which measure of center best represents the data.	Covered in *Algebra I: Mathematics in Context*
D. Find, use and interpret measures of center and spread, such as mean and quartiles, and use those measures to compare and draw conclusions about sets of data.	Covered in *Algebra I: Mathematics in Context*
E. Evaluate the validity of claims and predictions that are based on data by examining the appropriateness of the data collection and analysis.	Covered in *Algebra I: Mathematics in Context*
F. Construct convincing arguments based on analysis of data and interpretation of graphs.	Covered in *Algebra I: Mathematics in Context*
G. Describe sampling methods and analyze the effects of method chosen on how well the resulting sample represents the population.	Not covered
H. Use counting techniques, such as permutations and combinations, to determine the total number of options and possible outcomes.	256–257, 492–496
I. Design an experiment to test a theoretical probability, and record and explain results.	492–496

BENCHMARK	PAGE REFERENCES
J. Compute probabilities of compound events, independent events, and simple dependent events.	492–496
K. Make predictions based on theoretical probabilities and experimental results.	Covered in *Algebra I: Mathematics in Context*
MATHEMATICAL PROCESSES	
A. Formulate a problem or mathematical model in response to a specific need or situation, determine information required to solve the problem, choose method for obtaining this information, and set limits for acceptable solution.	44–50, 51–63, 115–122, 123–135, 184–189, 190–199, 237–241, 242–250, 291–296, 297–305, 367–372, 373–385, 444–453, 454–455, 497–503, 504–513, 564–570, 571–577, 642–649, 650–661, 712–720, 721–730
B. Apply mathematical knowledge and skills routinely in other content areas and practical situations.	44–50, 51–63, 115–122, 123–135, 184–189, 190–199, 237–241, 242–250, 291–296, 297–305, 367–372, 373–385, 444–453, 454–455, 497–503, 504–513, 564–570, 571–577, 642–649, 650–661, 712–720, 721–730
C. Recognize and use connections between equivalent representations and related procedures for a mathematical concept; e.g., zero of a function and the *x*-intercept of the graph of the function, apply proportional thinking when measuring, describing functions, and comparing probabilities.	44–50, 51–63, 115–122, 123–135, 184–189, 190–199, 237–241, 242–250, 291–296, 297–305, 367–372, 373–385, 444–453, 454–455, 497–503, 504–513, 564–570, 571–577, 642–649, 650–661, 712–720, 721–730
D. Apply reasoning processes and skills to construct logical verifications or counter-examples to test conjectures and to justify and defend algorithms and solutions.	44–50, 51–63, 115–122, 123–135, 184–189, 190–199, 237–241, 242–250, 291–296, 297–305, 367–372, 373–385, 444–453, 454–455, 497–503, 504–513, 564–570, 571–577, 642–649, 650–661, 712–720, 721–730
E. Use a variety of mathematical representations flexibly and appropriately to organize, record and communicate mathematical ideas.	44–50, 51–63, 115–122, 123–135, 184–189, 190–199, 237–241, 242–250, 291–296, 297–305, 367–372, 373–385, 444–453, 454–455, 497–503, 504–513, 564–570, 571–577, 642–649, 650–661, 712–720, 721–730

BENCHMARK	PAGE REFERENCES
F. Use precise mathematical language notations to represent problem situations and mathematical ideas.	44–50, 51–63, 115–122, 123–135, 184–189, 190–199, 237–241, 242–250, 291–296, 297–305, 367–372, 373–385, 444–453, 454–455, 497–503, 504–513, 564–570, 571–577, 642–649, 650–661, 712–720, 721–730
G. Write clearly and coherently about mathematical thinking and ideas.	44–50, 51–63, 115–122, 123–135, 184–189, 190–199, 237–241, 242–250, 291–296, 297–305, 367–372, 373–385, 444–453, 454–455, 497–503, 504–513, 564–570, 571–577, 642–649, 650–661, 712–720, 721–730
H. Locate and interpret mathematical information accurately, and communicate ideas, processes and solutions in a complete and easily understood manner.	44–50, 51–63, 115–122, 123–135, 184–189, 190–199, 237–241, 242–250, 291–296, 297–305, 367–372, 373–385, 444–453, 454–455, 497–503, 504–513, 564–570, 571–577, 642–649, 650–661, 712–720, 721–730