Correlation of *Moving with Math® Foundations-by-Topic* Grade 3
To Ohio Academic Content Standards

	B1 Numeration, Addition & Subtraction Student Book Skill Builders (SB)	B2 Multiplication & Divison Basic Facts Student Book Skill Builders (SB)	B3 Multiplication & Division - Problem Solving Student Book Skill Builders (SB)	B4 Fractions, Decimals, Geometry, Measurement Student Book Skill Builders (SB)
NUMBER, NUMBER SENSE AND OPERATION STANDARDS				
Students demonstrate number sense including an understanding of number systems and operations, and how they relate to one another. Students compute fluently and make reasonable estimates using paper and pencil, technology-supported and mental methods.				
NUMBER AND NUMBER SYSTEMS				
1. Identify and generate equivalent forms of whole numbers; e.g., 36, 30 _ 6, 9 x 4, 46 - 10, number of inches in a yard.	4, 5 **SB:** 1-2			
2. Use place value concepts to represent whole numbers and decimals using numerals, words, expanded notation and physical models. For example:	2-4, 15, 17, 18, 20, 21			

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a. Recognize 100 means "10 tens" as well as a single entity (1 hundred) through physical models and trading games.	2, 3 **SB:** 1-4, 6-3			
b. Describe the multiplicative nature of the number system; e.g., the structure of 3205 as 3 x 1000 plus 2 x 100 plus 5 x 1.				
c. Model the size of 1000 in multiple ways; e.g., packaging 100 objects into 10 boxes of 100, modeling a meter with centimeter and decimeter strips, or gathering 1000 pop-can tabs.	14, 15 **SB:** 6-3			
d. Explain the concept of tenths and hundredths using physical models, such as metric pieces, base ten blocks, decimal squares or money.				
3. Use mathematical language and symbols to compare and order; e.g., less than, greater than, at most, at least, <, >, =, ≤, ≥.	5, 6, 16 **SB:** 2-1, 2-3			
4. Count money and make change using coins and paper bills to ten dollars.	57-59 **SB:** 47-1, 47-3			
5 Represent fractions and mixed numbers using words, numerals and physical models.				
6. Compare and order commonly used fractions and mixed numbers using number lines, models (such as fraction circles or bars), points of reference (such as more or less than 1/2), and equivalent forms found using physical or visual models.				

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7. Recognize and use decimal and fraction concepts and notations as related ways of representing parts of a whole or a set; e.g., 3 Of 10 marbles are red can also be described as 3/10 and 3 tenths are red.				
MEANING OF OPERATIONS				
8. Model, represent and explain multiplication; e.g., repeated addition, skip counting, rectangular arrays and area model. For example:		2-5, 8, 9 **SB:** 20-1 to 20-3, 20-5	2, 3, 5 **SB:** 20-19, 20-20, 20-22	
a. Use conventional mathematical symbols to write equations for word problems involving multiplication.		19 **SB:** 20-18	10, 76 **SB:** 20-27	
b. Understand that, unlike addition and subtraction, the factors in multiplication and division may have different units; e.g., 3 boxes of 5 cookies each.				
9. Model, represent and explain division, e.g.., sharing equally, repeated subtraction, rectangular arrays and area model. For example:		21-24, 28 **SB:** 25-1 to 25-3	41-44 **SB:** 25-18, 25-19, 25-21, 25-22	
a. Translate contextual situations involving division into conventional mathematical symbols.		33, 34 **SB:** 26-1	41	
b. Explain how a remainder may impact an answer in a real-world situation; e.g.., 14 cookies being shared by 4 children.		72 **SB:** 26-2	60 **SB:** 26-10	
10. Explain and use relationships between operations, such as:				

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a. Relate addition and subtraction as inverse operations;	49 **SB:** 19-3			
b. Relate multiplication and division as inverse operations;		26, 32 **SB:** 25-4	44 **SB:** 25-20	
c. Relate addition to multiplication (repeated addition);		2 **SB:** 20-1, 20-2	2 **SB:** 20-19	
d. Relate subtraction to division (repeated subtraction).		23 **SB:** 25-2	46 **SB:** 25-21	
11. Model and use the commutative and associative properties for addition and multiplication.	27, 28 **SB:** 9-1, 9-2	10, 54 **SB:** 20-6, 20-17	6,16 **SB:** 20-23, 20-32	
COMPUTATION AND ESTIMATION				
12. Add and subtract whole numbers with and without regrouping.	30-37, 42-51 **SB:** 10-1 to 10-12, 15-1 to 15-12			
13. Demonstrate fluency in multiplication facts through 10 and corresponding division facts.		20, 40 **SB:** 20-8, 25-7	7, 8, 13, 44 **SB:** 20-24, 20-30, 25-23, 25-26	
14. Multiply and divide 2- and 3-digit numbers by a single-digit number, without remainders for division.		56, 57, 73, 74 **SB:** 21-1, 22-1, 26-4	18-22, 26-29, 65, 69-71 **SB:** 21-3 to 21-5, 21-8, 26-8, 27-1	
15. Evaluate the reasonableness of computations based upon operations and the numbers involved; e.g., considering relative size, place value and estimates.	63		60 **SB:** 21-6, 23-3, 26-13	

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MEASUREMENT STANDARDS				
Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies.				
MEASUREMENT UNITS				
1. Identify and select appropriate units for measuring:				
a. Length – miles, kilometers and other units of measure as appropriate.				
b. Volume (capacity) – gallons;				
c. Weight – ounces, pounds, grams, or kilograms;				
d. Temperature – degrees (Fahrenheit or Celsius).				
2. Establish personal or common referents to include additional units; e.g., a gallon container of milk; a postage stamp is about a square inch.				
3. Tell time to the nearest minute and find elapsed time using a calendar or a clock.				
4. Read thermometers in both Fahrenheit and Celsius scales.				
USE MEASUREMENT TECHNIQUES AND TOOLS				

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5. Estimate and measure length, weight and volume (capacity, using metric and U.s. customary units, accurate to the nearest 1/2 or 1/4 unit as appropriate.				
6. Use appropriate measurement tools and techniques to construct a figure or approximate an amount of specified length, weight or volume (capacity); e.g., construct a rectangle with length 2 1/2 inches and with 3 inches, fill a measuring cup to the 3/4 cup mark.				
7. Make estimates for perimeter, area and volume using links, tiles, cubes and other models.				
GEOMETRY AND SPATIAL SENSE STANDARD				
Students identify, classify, compare and analyze characteristics, properties and relationships of one-, two-, and three-dimensional geometric figures and objects. Students use spatial reasoning, properties of geometric objects and transformations to analyze mathematical situations and solve problems.				
CHARACTERISTICS AND PROPERTIES				
1. Analyze and describe properties of two-dimensional shapes and three-dimensional objects using terms such as vertex, edge, angle, side and face.				

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2. Identify and describe the relative size of angles with respect to right angles as follows:				
a. Use physical models, like straws, to make different sized angles by opening and closing the sides, not by changing the side lengths.				
b. Identify, classify and draw right, acute, obtuse and straight angles.				
SPATIAL RELATIONSHIPS				
3. Find and name locations on a labeled grid or coordinate system; e.g., a map or graph.	12, 13 **SB:** 48-1 to 48-3			
TRANSFORMATIONS AND SYMMETRY				
4. Draw lines of symmetry to verify symmetrical two-dimensional shapes.				
VISUALIZATION AND GEOMETRIC MODELS				
5. Build a three-dimensional model of an object composed of cubes; e.g., construct a model based on an illustration or actual object.				
PATTERNS, FUNCTIONS AND ALGEBRA STANDARD				

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Students use patterns, relations and functions to model, represent and analyze problem situations that involve variable quantities. Students analyze, model and solve problems using various representations such as tables, graphs and equations.				
USE PATTERNS, RELATIONS AND FUNCTIONS				
1. Extend multiplicative and growing patterns, and describe the pattern or rule in words.	10, 11 **SB:** 3-2			
2. Analyze and replicate arithmetic sequences with and without a calculator.	10 **SB:** 3-2			
3. Use patterns to make predictions, identify relationships, and solve problems.	8, 9 **SB:** 3-2	43, 55		
USE ALGEBRAIC REPRESENTATIONS				
4. Model problem situations using objects, pictures, tables, numbers, letters and other symbols.	11, 52, 53, 64, 65	**SB:** 24-1	10, 26 **SB:** 29-3	
5. Write, solve and explain simple mathematical statements.	29, 41 **SB:** 19-2	**SB:** 24-1, 29-1	10, 39 **SB:** 24-3	
6. Express mathematical relationships as equations and inequalities.	15, 28		40 **SB:** 29-3	
ANALYZE CHANGE				
7. Create tables to record, organize and analyze data to discover patterns and rules.	11, 60 **SB:** 8-1, 47-4, 48-3	16, 17, 43 **SB:** 25-8	13-15 **SB:** 20-31	

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8. Identify and describe quantitative changes, especially those involving addition and subtraction; e.g., the height of water in a glass becoming 1 centimeter lower each week due to evaporation.				
DATA ANALYSIS AND PROBABILITY STANDARD				
Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data.				
DATA COLLECTION				
1. Collect and organize data from an experiment, such as recording and classifying observations or measurements, in response to a question posed.	68 **SB:** 50-4	46		
2. Draw and interpret picture graphs in which a symbol or picture represents more than one object.	69 **SB:** 50-2			
3. Read, interpret and construct bar graphs with intervals greater than one.	68, 70			
4. Support a conclusion or prediction orally and in writing, using information in a table or graph.	68 **SB:** 50-4	46 **SB:** 50-5		
5. Match a set of data with a graphical representation of the data.				

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6. Translate information freely among charts, tables, line plots, picture graphs and bar graphs; e.g., create a bar graph from the information in a chart.	13, 68 **SB:** 50-4	46 **SB:** 50-5		
7. Analyze and interpret information represented on a timeline.				
STATISTICAL METHODS				
8. Identify the mode of a data set and describe the information it gives about a data set.		49 **SB:** 50-5, 50-6	68 **SB:** 50-9	
PROBABILITY				
9. Conduct a simple experiment or simulation of a simple event, record the results in a chart, table or graph, and use the results to draw conclusions about the likelihood of possible outcomes.				
10. Use physical models, pictures, diagrams and lists to solve problems involving possible arrangements or combinations of two to four objects.		7 **SB:** 49-1		