A Correlation of

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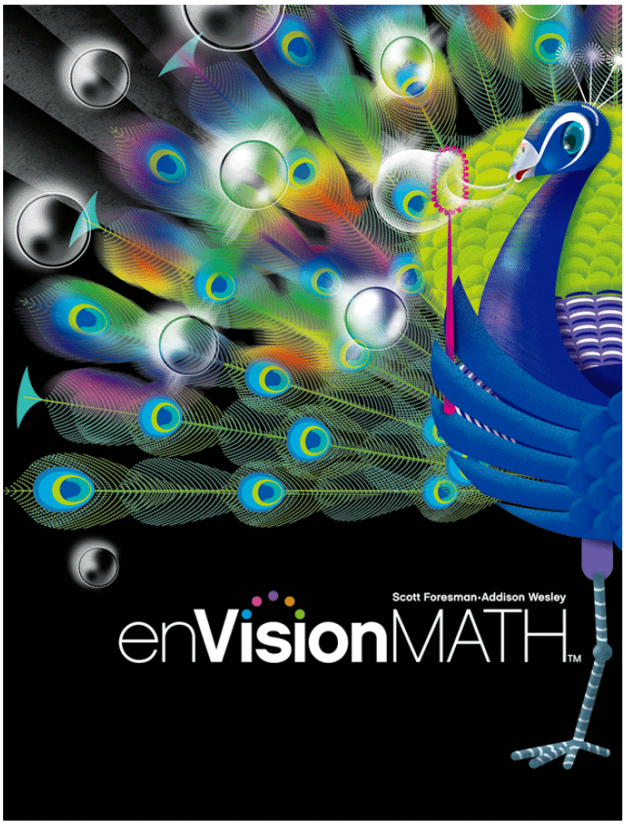

to the

Common Core State Standards for Mathematics Oregon

Grade 5

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to the Common Core State Standards for Mathematics Oregon

Common Core State Standards for Mathematics Oregon Grade 5	enVisionMATH ©2009 with Common Core Transition Kit Grade 5 Topics - Lessons
Mathematical Practices 5.MP	
The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.	
5.MP.1 Make sense of problems and persevere in solving them.	enVisionMATH is built on a foundation of problem-based instruction that has sense-making at its heart. The Problem Solving Handbook, found on pages xiii–xxiii, presents to students a process that begins with making sense of the problem. Read and Understand, the first phase of the process, has students ask themselves, What am I trying to find? and What do I know?, questions that will help identify the givens and constraints of the problem. In the second phase, Plan and Solve, students decide on a solution plan. The Problem-Solving Recording Sheet, a reproducible teaching resource, provides a structured outline to help students make sense of the problem and implement a workable solution method. In the final phase, Look Back and Check, students verify that their work is reasonable and reflects the information given. Each lesson begins with Problem-Based Interactive Learning, an activity in which students interact with their peers and teachers to make sense of and decide on a workable solution for a real-world situation. Another feature of each lesson is the set of problem-solving exercises in which students persevere by applying different skills and strategies to solve problems. Each topic includes at least one problem-solving lesson in which students focus on honing their sense-making and problem-solving skills.

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5.MP.2 Reason abstractly and quantitatively.	enVisionMATH provides scaffolded instruction to help students develop both quantitative and abstract reasoning. In the Visual Learning Bridge, students can see how to represent a given situation numerically or algebraically. They will have opportunities later in the lesson to reason abstractly as they endeavor to represent situations symbolically. Reasonableness exercises remind students to compare their work to the original situation. In the Do You Understand? part of the Guided Practice, students gain experiences with quantitative reasoning as they consider the meaning of different parts of an expression or equation. Reasoning problems throughout the exercise sets focus students' attention on the structure or meaning of an operation, for example, rather than merely the solution.
5.MP.3 Construct viable arguments and critique the reasoning of others.	Consistent with a focus on reasoning and sense-making is a focus on critical reasoning — argumentation and critique of arguments. In Pearson's enVisionMATH, the Problem-Based Interactive Learning affords students opportunities to share with classmates their thinking about problems, their solution methods, and their reasoning about the solutions. The many Reasoning exercises found throughout the program specifically call for students to justify or explain their solutions. Writing to Explain exercises help students develop foundational critical reasoning skills by having them construct explanations for processes. The ability to articulate a clear explanation for a process is a stepping stone to critical analysis and reasoning of both the student's own processes and those of others.

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5.MP.4 Model with mathematics.	Students in Pearson's enVisionMATH are introduced to mathematical modeling in the early grades. They first use manipulatives and drawings and then equations to model addition and subtraction situations. The Visual Learning Bridge and Visual Learning Animation often present real-world situations, and students are shown how these can be modeled mathematically. In later grades, students expand their modeling skills to include representations such as tables and graphs, as well as equations.
5.MP.5 Use appropriate tools strategically.	Students become fluent in the use of a wide assortment of tools ranging from physical objects, including manipulatives, rulers, protractors, and even pencil and paper, to digital tools, such as eTools, calculators, and computers. As students become more familiar with the tools available to them, they are able to begin making decisions about which tools are most helpful in a particular situation.
5.MP.6 Attend to precision.	Students are expected to use mathematical terms and symbols with precision. Key terms and concepts are highlighted in each lesson. In the Do You Understand? feature, students revisit these key terms or concepts and provide explicit definitions or explanations. For the Writing to Explain and Think About the Structure exercises, students are asked to use precise language to provide clear explanations of terms, concepts, or processes. Students are reminded to use appropriate units of measure in their solutions as well as in labels for diagrams, graphs, and other kinds of displays.

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5.MP.7 Look for and make use of structure.	Students are encouraged to look for structure as they develop solution plans. In the Look for a Pattern problem-solving lessons, children in the early years develop a sense of patterning with visual and physical objects. As students mature in their mathematical thinking, they look for structure in numerical operations by focusing on place value and properties of operations. This focus on looking for and recognizing structure enables students to draw from patterns as they formalize their thinking about the structure of operations.
5.MP.8 Look for and express regularity in repeated reasoning.	Students are prompted to look for repetition in computations to help them develop shortcuts and become more efficient problem-solvers. Students are reminded to think about problems they have encountered previously that may share features or processes. They are encouraged to draw on the solution plan developed for such problems, and as their mathematical thinking matures, to look for and apply generalizations to similar situations. The Problem-Based Interactive Learning activities offer students opportunities to look for regularity in the way operations behave.
Operations and Algebraic Thinking 5.OA	
A. Write and interpret numerical expressions.	
5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	6-4, 6-5 **CC:** 6-6A
5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.*	3-8, 6-1, 6-3

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B. Analyze patterns and relationships.	
5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*	**CC:** 6-4A, 6-6B, 6-6C, 17-4B, 17-4C
Number and Operations in Base Ten	5.NBT
C. Understand the place value system.	
5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	7-1
5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	7-1, 7-5
5.NBT.3 Read, write, and compare decimals to thousandths.	1-3, 1-4
a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).	1-3, 1-4, 9-8, 9-9
b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	1-4
5.NBT.4 Use place value understanding to round decimals to any place.	2-2
D. Perform operations with multi-digit whole numbers and with decimals to hundredths.	
5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	3-4, 3-5, 3-6, 3-8, 5-3, 5-8, 6-4, 10-7

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5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	4-1, 4-2, 4-4, 4-5, 4-6, 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 5-7 **CC:** 5-3A
5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	2-6, 2-7, 2-8, 7-2, 7-3, 7-4, 7-5, 7-6, 7-7, 7-8 **CC:** 2-6A, 7-4A, 7-4B, 7-6A
Number and Operations—Fractions 5.NF	
E. Use equivalent fractions as a strategy to add and subtract fractions.	
5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)*	10-3, 10-4, 10-5, 10-6 **CC:** 10-5A, 10-7A
5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.*	9-11, 10-1, 10-3, 10-4, 10-5, 10-6 **CC:** 10-1A, 10-5A, 10-7A

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F. Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	
5.NF.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*	9-2
5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	11-1, 11-2, 11-3
a. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. *For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)*	11-1, 11-2, 11-3
b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	**CC:** 11-3A
5.NF.5 Interpret multiplication as scaling (resizing), by:	**CC:** 11-4A
a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.	**CC:** 11-2A

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b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.	**CC:** 11-4A
5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	11-1, 11-2, 11-3
5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.)	11-4 **CC:** 11-5A
a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3.*	**CC:** 11-5A
b. Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.*	11-4

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c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?*	**CC:** 11-5A
Measurement and Data 5.MD	
G. Convert like measurement units within a given measurement system.	
5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	14-1, 14-2, 14-3, 14-4, 14-5
H. Represent and interpret data.	
5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*	18-2 **CC:** 18-2A, 18-2B
I. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	
5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	13-5 **CC:** 13-5A
a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.	13-5, 13-7 **CC:** 13-5A
b. A solid figure which can be packed without gaps or overlaps using *n* unit cubes is said to have a volume of *n* cubic units.	13-5 **CC:** 13-5A
5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	**CC:** 13-5A

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5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	13-5, 13-6, 13-7
a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.	13-5 **CC:** 13-5A
b. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.	13-5 **CC:** 13-6A
c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	13-6 **CC:** 13-6A
Geometry 5.G	
J. Graph points on the coordinate plane to solve real-world and mathematical problems.	
5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).	17-2 17-3 **CC:** 17-4A, 17-4B, 17-4C
5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	17-2 **CC:** 17-4B, 17-4C

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K. Classify two-dimensional figures into categories based on their properties.	
5.G.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.*	8-3, 8-4, 8-5, 8-6 **CC:** 8-6A,
5.G.4 Classify two-dimensional figures in a hierarchy based on properties.	8-3, 8-4, 8-5, 8-6 **CC:** 8-6A, 8-6B