Mentoring
Mathematical
Minds

Correlation to the Common Core State Standards

GRADE 3

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PROJECT M³ Mentoring Mathematical Minds

Grade 3

Correlation to the Common Core State Standards

Common Core State Standards	Project M³: Mentoring Mathematical Minds
Operations & Algebraic Thinking	
Represent and solve problems involving multiplication and division.	
3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.*	**Level 3-4: Awesome Algebra** Chapter 1, Lessons 1-3 **Level 3-4: Awesome Algebra** Chapter 3, Lesson 1 **Level 3-4: In Search of the Yeti** Chapter 1, Lesson 3 **Level 3-4: In Search of the Yeti** Chapter 2, Lessons 1-3 **Level 3-4: In Search of the Yeti** Chapter 3, Lessons 1-2 **Level 3-4: Digging for Data** Chapter 1, Lessons 1-2
3.OA.A.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.*	**Level 3-4: Awesome Algebra** Chapter 1, Lessons 1-3
3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	**Level 3-4: Awesome Algebra** Chapter 1, Lessons 1-2 **Level 3-4: In Search of the Yeti** Chapter 1, Lesson 3 **Level 3-4: In Search of the Yeti** Chapter 2, Lessons 1-3 **Level 3-4: In Search of the Yeti** Chapter 3, Lessons 1-2
3.OA.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ?*	**Level 3-4: Awesome Algebra** Chapter 1, Lessons 1-3 **Level 3-4: In Search of the Yeti** Chapter 1, Lesson 3 **Level 3-4: In Search of the Yeti** Chapter 2, Lessons 1-3 **Level 3-4: In Search of the Yeti** Chapter 3, Lessons 1-2
Understand properties of multiplication and the relationship between multiplication and division.	
3.OA.B.5 Apply properties of operations as strategies to multiply and divide. *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)*	**Level 3-4: Factors, Multiples and Leftovers** Chapter 1, Lesson 1 **Level 3-4: Factors, Multiples and Leftovers** Chapter 1, Lesson 4 **Level 3-4: Factors, Multiples and Leftovers** Chapter 2, Lessons 2-3 **Level 3-4: How Big Is Big?** Chapter 1, Lesson 3 **Level 3-4: In Search of the Yeti** Chapter 2, Lessons 2-3

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Operations & Algebraic Thinking	
3.OA.B.6 Understand division as an unknown-factor problem. *For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.*	**Level 3-4: Awesome Algebra** Chapter 1, Lessons 1-3 **Level 3-4: Factors, Multiples and Leftovers** Chapter 2, Lesson 1 **Level 3-4: In Search of the Yeti** Chapter 1, Lesson 3 **Level 3-4: In Search of the Yeti** Chapter 2, Lesson 3 **Level 3-4: In Search of the Yeti** Chapter 3, Lessons 1-2
Multiply and divide within 100.	
3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	**Level 3-4: Awesome Algebra** Chapter 1, Lessons 1-2 **Level 3-4: Factors, Multiples and Leftovers** Chapter 1, Lesson 2 **Level 3-4: Factors, Multiples and Leftovers** Chapter 2, Lesson 1 **Level 3-4: In Search of the Yeti** Chapter 1, Lesson 3 **Level 3-4: In Search of the Yeti** Chapter 2, Lessons 1-3 **Level 3-4: In Search of the Yeti** Chapter 3, Lessons 1-2
Solve problems involving the four operations, and identify and explain patterns in arithmetic.	
3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	**Level 3-4: Awesome Algebra** Chapter 1, Lessons 1-2 **Level 3-4: Awesome Algebra** Chapter 3, Lessons 1-3 **Level 3-4: How Big Is Big?** Chapter 2, Lesson 3 **Level 3-4: In Search of the Yeti** Chapter 1, Lessons 1-3 **Level 3-4: In Search of the Yeti** Chapter 2, Lessons 1-3 **Level 3-4: In Search of the Yeti** Chapter 3, Lessons 1-2
3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*	**Level 3-4: Awesome Algebra** Chapter 1, Lessons 1-3 **Level 3-4: Awesome Algebra** Chapter 2, Lessons 1-3 **Level 3-4: Unraveling the Mystery of the MoLi Stone** Chapter 1, Lessons 1-3 **Level 3-4: Unraveling the Mystery of the MoLi Stone** Chapter 3, Lessons 1-2 **Level 3-4: How Big Is Big?** Chapter 1, Lesson 3 **Level 3-4: How Big Is Big?** Chapter 2, Lesson 2
Number & Operations in Base Ten	
Use place value understanding and properties of operations to perform multi-digit arithmetic.	
3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	**Level 3-4: How Big Is Big?** Chapter 1, Lessons 1-2
3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	**Level 3-4: Awesome Algebra** Chapter 3, Lessons 1-3 **Level 3-4: Unraveling the Mystery of the MoLi Stone** Chapter 1, Lessons 1, 3 **Level 3-4: Unraveling the Mystery of the MoLi Stone** Chapter 2, Lessons 1, 3 **Level 3-4: Unraveling the Mystery of the MoLi Stone** Chapter 3, Lesson 2 **Level 3-4: Unraveling the Mystery of the MoLi Stone** Chapter 4, Lesson 2 **Level 3-4: How Big Is Big?** Chapter 1, Lessons 2, 3 **Level 3-4: How Big Is Big?** Chapter 2, Lesson 1

Common Core State Standards	Project M³: Mentoring Mathematical Minds
3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.	**Level 3-4: Unraveling the Mystery of the MoLi Stone** Chapter 1, Lessons 1, 3 **Level 3-4: Unraveling the Mystery of the MoLi Stone** Chapter 2, Lessons 1, 3
Number & Operations—Fractions	
Develop understanding of fractions as numbers.	
3.NF.A.1 Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a/b* as the quantity formed by a parts of size 1/*b*.	**Level 3-4: Digging for Data** Chapter 3, Lessons 1, 3
3.NF.A.2.A Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/*b* and that the endpoint of the part based at 0 locates the number 1/*b* on the number line.	**Level 3-4: Digging for Data** Chapter 3, Lessons 1, 3
3.NF.A.2.B Represent a fraction *a/b* on a number line diagram by marking off a lengths 1/*b* from 0. Recognize that the resulting interval has size *a/b* and that its endpoint locates the number *a/b* on the number line.	**Level 3-4: Digging for Data** Chapter 3, Lessons 1, 3
3.NF.A.3.A Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.	**Level 3-4: Digging for Data** Chapter 3, Lessons 1, 3
3.NF.A.3.B Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.	**Level 3-4: Digging for Data** Chapter 3, Lessons 1, 3
Measurement & Data	
Solve problems involving measurement and estimation.	
3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	**Level 3-4: Digging for Data** Chapter 1, Lessons 1-2

Common Core State Standards	Project M³: Mentoring Mathematical Minds
3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.	**Level 3-4: In Search of the Yeti** Chapter 3, Lessons 1-2
Represent and interpret data.	
3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*	**Level 3-4: Digging for Data** Chapter 1, Lessons 1-3 **Level 3-4: Digging for Data** Chapter 2, Lessons 1-3 **Level 3-4: Digging for Data** Chapter 3, Lessons 1-2
Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	
3.MD.C.5.A A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.	**Level 3-4: In Search of the Yeti** Chapter 2, Lessons 2-3
3.MD.C.5.B A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.	**Level 3-4: In Search of the Yeti** Chapter 2, Lessons 1-3
3.MD.C.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).	**Level 3-4: In Search of the Yeti** Chapter 2, Lessons 1-3
3.MD.C.7 Relate area to the operations of multiplication and addition.	**Level 3-4: Factors, Multiples and Leftovers** Chapter 1, Lesson 1
3.MD.C.7.A Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.	**Level 3-4: In Search of the Yeti** Chapter 2, Lessons 1-3
3.MD.C.7.B Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	**Level 3-4: Factors, Multiples and Leftovers** Chapter 1, Lesson 1 **Level 3-4: In Search of the Yeti** Chapter 2, Lessons 1-3

Common Core State Standards	Project M³: Mentoring Mathematical Minds
3.MD.C.7.C Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.	**Level 3-4:** Factors, Multiples and Leftovers Chapter 1 Lesson 4
3.MD.C.7.D Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.	Level 3-4 In Search of the Yeti Chapter 2 Lessons 1-3
Geometric measurement: recognize perimeter.	
3.MD.D.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	Level 3-4 In Search of the Yeti Chapter 1 Lesson 3 Level 3-4 In Search of the Yeti Chapter 2 Lessons 1-3