Focus Topic: OA – Operations and Algebraic Thinking

TSW = The Student Will

Objective(s)	Common Core Alignment	Essential Questions	Understandings	Suggested Assessments
• TSW interpret products of whole numbers, *(For example, interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each and describe a context in which a total number of objects can be expressed as 5 × 7)*	3.OA.1	How does knowing basic facts make problem solving easier?	There are certainly relationships for whole numbers and addition that always hold true. These can help simplify calculations.	Ongoing observation & questioning during class discussions
• TSW interpret whole-number quotients of whole numbers, *(For example: 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 and describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8)*	3.OA.2	Why is possible to get the same answer using different operations or numbers? (Associative property and Commutative property)	Addition and subtraction are inverse operations.	Performance tasks
• TSW use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, *(For example: by using drawings and equations with a symbol for the unknown number to represent the problem)*	3.OA.3	How can addition help solve problems?	Writing a number sentence is one way of representing what we know and what we need to find out in a word problem.	Self-Assessment
• TSW 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 = ?)*	3.OA.4	How can I use the plus and minus symbols to help find the sum and difference of a group of numbers?		Literature Connections
• TSW 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)*	3.OA.5	What property do numbers belong to?		Projects

• TSW understand division as an unknown-factor problem. (*For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8)*	3.OA.6			Short Constructed Response
• TSW fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division *(For example: knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations)*	3.OA.7			Extended Constructed Response
• TSW know from memory all products of two one-digit numbers	3.OA.7			
• TSW solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity	3.OA.8			
• TSW assess the reasonableness of answers using mental computation and estimation strategies including rounding	3.OA.8			
• TSW 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 addend)*	3.OA.9			

Focus Topic: NBT– Number & Operations in Base Ten

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Objective(s)	Common Core Alignment	Essential Questions	Understandings	Suggested Assessments
• TSW use place value understanding to round whole numbers to the nearest 10 or 100	3.NBT.1	How would the world be different if we didn't have numbers?	Numbers can be used in the real world in different ways-to locate, to name, to measure, or to show quantity.	Ongoing observation & questioning during class discussions
• TSW 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	3.NBT.2	How are whole numbers used in daily life?	Our number system is based on groups of ten.	Performance tasks

• TSW 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	3.NBT.3	When do we use rounding?		Self Assessment

Focus Topic: MD – Measurement and Data

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Objective(s)	Common Core Alignment	Essential Questions	Understandings	Suggested Assessments
• TSW 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, *(For example: by representing the problem on a number line diagram)*	3.MD.1	What things would be impossible without measurement?	A region can be divided into equal parts in different ways, and parts that are equal in size can have different shapes.	Ongoing observation & questioning during class discussions
• TSW measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l)	3.MD.2	Why do we need standard units of measure?	Measurement tells how much.	Performance tasks
• TSW add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, *(For example: by using drawings (such as a beaker with a measurement scale) to represent the problem)*	3.MD.2	Is there such a thing as exact measurement?		Self-Assessment
• TSW draw a scaled picture graph and a scaled bar graph to represent a data set with several categories	3.MD.3	How does *what* we measure influence *how* we measure?		Literature Connections
• TSW 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)*	3.MD.3			Short Constructed Response
• TSW generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch	3.MD.4			Extended Constructed Response
• TSW display data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters	3.MD.4			

• TSW recognize area as an attribute of plane figures and understand concepts of area measurement - 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 - 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	3.MD.5			
• TSW measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units)	3.MD.6			
• TSW relate area to the operations of multiplication and addition	3.MD.7			
• TSW 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	3.MD.7			
• TSW 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	3.MD.7			
• TSW 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* × *b* and *a* × *c*. Use area models to represent the distributive property in mathematical reasoning	3.MD.7			
• TSW recognize area as additive	3.MD.7			
• TSW 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				
• TSW 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	3.MD.8			

Focus Topic:G –Geometry

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Objective(s)	Common Core Alignment	Essential Questions	Understandings	Suggested Assessments
• TSW understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals)	3.G.1	What is the best shape? Why?	Space figures have length, width, and height. Their names reflect their characteristics.	Ongoing observation & questioning during class discussions
• TSW recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories	3.G.1	How would the world look without solid or plane geometric figures?	Space figures can be grouped by their attributes, and certain types by their numbers of faces, edges, and corners.	Performance tasks
• TSW partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. (*For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape)*	3.G.2	How would the world look if there were only solid or plane geometric figures?		Self-Assessment

Focus Topic:NF –Numbers & Operations - Fractions

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Objective(s)	Common Core Alignment	Essential Questions	Understandings	Suggested Assessments
• TSW 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*	3.NF.1	How can I use fractions in real life?	A region can be divided into equal parts in different ways, and parts that are equal in size can have different shapes.	Ongoing observation & questioning during class discussions
• TSW understand a fraction as a number on the number line; represent fractions on a number line diagram	3.NF.2	Does it have to be equal to be fair?	The denominator of a fraction gives the number of equal parts in all, and the numerator tells how many equal parts are described.	Performance tasks

• TSW 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	3.NF.2	How can we show a part of something?	Different fractions used to name the same fraction are equivalent.	Self-Assessment
• TSW 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	3.NF.2	What is the relationship between fractions and division?	Fractions with a common denominator or a common numerator are easy to compare and order.	Short Constructed Response
• TSW explain equivalence of fractions in special cases, and compare fractions by reasoning about their size	3.NF.3	What things would be impossible without measurement?		Extended Constructed Response
• TSW understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line	3.NF.3			
• TSW 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	3.NF.3			
• TSW express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. (*Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram)*	3.NF.3			
• TSW compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model	3.NF.3			

Focus Topic: Mathematical Practices

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Objective(s)
• TSW make sense of problems and persevere in solving them.
• TSW reason abstractly and quantitatively.
• TSW construct viable arguments and critique the reasoning of others.
• TSW model with mathematics.
• TSW use appropriate tools strategically.
• TSW attend to precision.
• TSW look for and make use of structure
• TSW look for and express regularity in repeated reasoning.