3.OA Operations and Algebraic Thinking

- ☐ Interpret products of whole numbers. (3.OA.A.1)
- ☐ Interpret whole-number quotients of whole numbers. (3.OA.A.2)
- ☐ Use multiplication and division within 100 to solve word problems. (3.OA.A.3)
- ☐ Determine the unknown whole number in a multiplication or division equation relating three whole numbers. (3.OA.A.4)
- ☐ Apply properties of operations as strategies to multiply and divide. (3.OA.B.5)
- ☐ Understand division as an unknown-factor problem. (3.OA.B.6)
- ☐ Fluently multiply and divide within 100. (3.OA.C.7)
- ☐ Solve two-step word problems using the four operations. (3.OA.D.8)
- ☐ Identify arithmetic patterns and explain them using properties of operations. (3.OA.D.9)

Essential Questions	Enduring Understandings
How does knowing basic facts make problem solving easier? How can addition help solve problems? What property do numbers belong to?	There are certainly relationships for whole numbers and addition that always hold true; Addition and subtraction are inverse operations; Writing a number sentence is one way of representing what we know and what we need to find out in a word problem.

Suggested Activities and Resources (in addition to guided reading and leveled materials)	Suggested Assessments
Play "3-way Concentration" – students match 3 cards depicting a given number; Play Empty Set Hunt: Spread cards, face down on a table. Students turn over cards & only keep the ones where zero would name how many are in the set; Pantomime a short scenario relative to using math & ask students to identify the specific use(s) of math that were depicted. Then have students cite, find, or draw their own examples.	Create a set of pictures showing the different uses of number (or you can use pictures already created or cut out of magazines by students). Students take turns, take a picture, & name the use(s) of number that are depicted. Then ask the other students to signal if they agree or disagree, or see another use depicted.

3.NBT Number and Operations in Base Ten

☐ Use place value understanding to round whole numbers to the nearest 10 or 100. (3.NBT.A.1)

☐ 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.A.2)

☐ Multiply one-digit whole numbers by multiples of 10 in the range 10–90 using strategies based on place value and properties of operations. (3.NBT.A.3)

Essential Questions	Enduring Understandings
How would the world be different if we didn't have numbers? How are whole numbers used in daily life? When do we use rounding?	Numbers can be used in the real world in different ways-to locate, to name, to measure, or to show quantity; Our number system is based on groups of ten.

Suggested Activities and Resources (in addition to guided reading and leveled materials)	Suggested Assessments
Play "Say it & Press It" –display a 2- or 3-digit number using base-ten materials & have students say the number then enter it on their calculators; Help students learn to use "ball park estimates" (i.e., change numbers in a given problem to close-but easier numbers that can be computed mentally); begin with addition of 2-digit numbers without regrouping and when children seem comfortable with this, then move to subtraction of 2-digit numbers without regrouping	Show students 2 sets of multi-digit whole numbers & have them determine which set is ordered correctly from highest to lowest or vice versa. Then ask them to explain their rationale using appropriate manipulatives, etc.

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3.NF   Numbers and Operations - Fractions

- ☐ Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts. (3.NF.A.1)
- ☐ Understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*. (3.NF.A.2)
- ☐ Understand a fraction as a number on the number line; represent fractions on a number line diagram. (3.NF.A.2)
- ☐ Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. (3.NF.A.3)

Essential Questions	**Enduring Understandings**
How can I use fractions in real life? Does it have to be equal to be fair? How can we show a part of something?	A region can be divided into equal parts in different ways, and parts that are equal in size can have different shapes; The denominator of a fraction gives the number of equal parts in all, and the numerator tells how many equal parts are described; Different fractions used to name the same fraction are equivalent.
Suggested Activities and Resources (in addition to guided reading and leveled materials) Literature Connection: *The Doorbell Rang* (by Hutchins) – a plate of cookies must be shared by more & more children as the story progresses.	**Suggested Assessments** Students match the correct picture to an oral description. Example - Which picture show a half of a candy bar? Which show a whole candy bar?

3.MD Measurement and Data
☐ Tell and write time to the nearest minute. (3.MD.A.1)   ☐ Measure and estimate liquid volumes and masses of objects using standard units of grams, kilograms, and liters. (3.MD.A.2)   ☐ Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. (3.MD.B.3)   ☐ Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. (3.MD.B.4)   ☐ Recognize area as an attribute of plane figures and understand concepts of area measurement. (3.MD.C.5)   ☐ Measure areas by counting unit squares. (3.MD.C.6)   ☐ Relate area to the operations of multiplication and addition. (3.MD.C.7)   ☐ Solve real world and mathematical problems involving perimeters of polygons. (3.MD.D.8)

Essential Questions	**Enduring Understandings**
What things would be impossible without measurement? Why do we need standard units of measure? Is there such a thing as exact measurement? How does *what* we measure influence *how* we measure?	A region can be divided into equal parts in different ways, and parts that are equal in size can have different shapes; Measurement tells how much.

Suggested Activities and Resources **(in addition to guided reading and leveled materials)**	**Suggested Assessments**
Each day during opening exercises, have students refer to the calendar to determine the date; Play the "Coin Collector" game – Students take turns picking cards with pictures of coins on them, name the coin, & state its value. The winner is the first students to collect one of each coin type.	Give students a randomly ordered set of the target coins (penny nickel, dime, quarter, & a half dollar), and have them…name each one & state its value and put the set in order from least to greatest value; Show students 2 sets of numbers & have them use manipulatives to determine which set is ordered correctly from highest to lowest.

3.G Geometry	
☐ Understand that shapes in different categories may share attributes. (3.G.A.1) ☐ Recognize rhombuses, rectangles, and squares as examples of quadrilaterals. (3.G.A.1) ☐ Partition shapes into parts with equal areas. (3.G.A.2)	
Essential Questions What is the best shape? Why? How would the world look without solid or plane geometric figures? How would the world look if there were only solid or plane geometric figures?	**Enduring Understandings** Space figures have length, width, and height. Their names reflect their characteristics; Space figures can be grouped by their attributes, and certain types by their numbers of faces, edges, and corners.
Suggested Activities and Resources **(in addition to guided reading and leveled materials)** Point out patterns in nature, art work, floor/ceiling tiles, wallpaper, upholstery fabrics; Play "Battleship"; Make a *Geometry to Real-Life Connection Chart* & add items when found; Students to draw simple 2-D shapes based on the teacher's description of their orientation/direction.	**Suggested Assessments** Use direction/orientation vocabulary to direct students where to place the book; Have students pick a specific #D shape out of a collection