Diocese of Boise Math Curriculum – 2nd grade

ESSENTIAL QUESTIONS	DOMAINS AND CLUSTERS	2nd GRADE MATH SKILLS	VOCABULARY	PRACTICES, RESOURCES & ASSESSMENT
Sample Questions” What is place value?	***Counting and Cardinality A1*** Know and use the number names and the count sequence	**Introduced Skills** Count within 1000 Read and write words for numbers Read and write numbers to 1000 using base-ten numbers, number names and expanded form Write whole numbers in expanded form Identify Roman Numerals **Reviewed Skills** Count to 120 starting at any number less than 120 Identify even and odd numbers Read and write numbers up to 120 Identify, read and write ordinal numbers, first, second, etc. Skip count by 2s, 5s, 10s, 100s	**RIT 189-202 & Above** • Skip count • 5 frame • 10 frame • Tens • Add/addition • Sum • Subtract • Subtraction • Difference • Half • Tallest • Before • After • Greater than • Less than • Double • Fewest • Longest • Shortest • Total • Before • Between • Dollar sign • Cent sign • Fact family • Fewer • Hundred • Largest • Less • Metric • Ray	1. Make sense of problems and persevere in solving them 2. Reason abstractly and quantitatively 3. Construct viable arguments and critique the reasoning of others 4. Model with mathematics 5. Use appropriate tools strategically 6. Attend to precision 7. Look for and make sense of structure
How can numbers be compared?	Count to tell the number of objects Understand place value	**Mastered Skills** Count forward beginning from a given number Use models (i.e. number lines, drawings, manipulatives) to Count to 100 by ones and tens **Introduced Skills** Identify dozen, half-dozen, pair, etc. **Reviewed Skills** Given a number, identify more than, less than, equal to, most, least or fewest **Mastered Skills** Show that the number of objects is the same regardless of Identify the highest and lowest number Solve addition word problems		

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<tr>
<td>What are strategies we can use to add numbers?

What are strategies we can use to subtract numbers?</td>
<td>Operations and Algebraic Thinking A2

Demonstrate addition as putting together and adding to

Demonstrate subtraction as taking a part and taking from

Work with addition and subtraction equations</td>
<td>
Reviewed Skills
<table>
<tr><td></td><td>Solve word problems by adding three whole numbers</td></tr>
<tr><td></td><td>Apply the commutative property of addition (i.e. If 8+3=11 then 3+8=11)</td></tr>
<tr><td></td><td>Apply the associative property of addition [i.e.</td></tr>
<tr><td></td><td>Find the number that makes 10 when added to a given number</td></tr>
<tr><td></td><td>Add within 20</td></tr>
<tr><td></td><td>Solve addition word problems</td></tr>
<tr><td></td><td>Decompose numbers less than or equal to 10 (i.e. 5=2+3 and 5=4+1) using objects or drawings</td></tr>
<tr><td></td><td>Represent addition with objects, fingers, mental images, drawings, sounds (i.e. claps), acting out situations, verbal explanation, expressions or equations</td></tr>
</table>
Mastered Skills
<table>
<tr><td></td><td>Relate counting to addition (i.e. count on 2 to add 2)</td></tr>
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Reviewed Skills
<table>
<tr><td></td><td>Associate subtraction as an unknown-addend problem (i.e. subtract 10-8 by finding the number that makes 10 when added to 8)</td></tr>
<tr><td></td><td>Subtract within 20</td></tr>
<tr><td></td><td>Relate counting to subtraction (i.e. count on 2 to take away 2)</td></tr>
<tr><td></td><td>Solve subtraction word problems</td></tr>
</table>
Mastered Skills
<table>
<tr><td></td><td>Subtract within 10 using objects and drawings</td></tr>
<tr><td></td><td>Represent subtraction with objects, fingers, mental images, drawings, sounds (i.e. claps), acting out situations, verbal explanation, expressions or equations</td></tr>
</table>
Introduced Skills
<table>
<tr><td></td><td>Use addition and subtraction within 100 to solve one- and two-step word problems</td></tr>
<tr><td></td><td>Add up to four two-digit numbers</td></tr>
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Before
Between
Model
Ordinal number
Fact family
Manipulative
Ones
Tens
Hundreds
Amount
Highest/lowest
Paris
Properties
Number sentence
Work problem
Expression
Operation
Addend
Digit
Place value
Slide
Flip
Turn
Fraction
Arithmetic
Geometric
Strategy
Hour
Half hour
Symmetry
Estimate
Solid/plane shapes
Rectangular prism

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8. Look for and express regularity in repeated reasoning

Resources

Pictures
Tables
Graphs
Models
Manipulatives
Ruler
Clock
Cubes

Assessment

Journaling
Performance tasks
Pencil and paper assignments
Presentation
Pictorial representation
Demonstration
Teacher observation

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ESSENTIAL QUESTIONS	DOMAINS AND CLUSTERS	2nd GRADE MATH SKILLS	VOCABULARY	PRACTICES, RESOURCES & ASSESSMENT
	Operations and Algebraic Thinking A2 Use properties of multiplication and division	**Reviewed Skills** ☐ Use the strategy of using the relationship between addition and subtraction (8+4=12 thus 12-8=4) ☐ Use the strategy of creating equivalent but easier or known sums to add and subtract (6+7=6+6+1= 12+1=13) ☐ Determine if equations involving addition and subtraction are true or false (i.e. 6=6, 7=8-1, 5+2=2+5, 4+1=5+2) ☐ Determine the unknown whole number in an addition or subtraction equation (i.e. 8+?=11, 5=□-3, 6+6=□) ☐ Know from memory all sums of two one-digit numbers ☐ Explain the meaning of the equal sign **Introduced Skills** ☐ Write an equation to express an even number as a sum of two equal addends ☐ Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and columns ☐ Write an equation to express the total as a sum of equal addends	• Estimate • Thirds/fourths • Fifth/sixth • Pictograph • Bar graph • Line graph • Greater • Greater than • Largest • Less • Less than • Line segment • Metric • Morning • Multiply • First-twelfth • Ounce • Outside • Penny, nickel dime, quarter • Dollar • Pound • Quart • Similar • Square unit • Taller • Term • Total • Whole number • Dollar sign • Cent sign • Clockwise • O'clock • Rhombus • Hexagon	
	Generate and analyze patterns and relationships	**Reviewed Skills** ☐ Determine whether a group of objects has an odd or even number of members **Reviewed Skills** ☐ Identify and explain arithmetic patterns (including patterns in addition and multiplication tables)		

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<tr>
<td></td>
<td>Numbers and Operations of Base Ten A3

Compare numbers

Explain and use the place value system

Use place value understanding and properties of operations to do arithmetic</td>
<td>
Reviewed Skills
<table>
<tr><td></td><td>Compare two multi-digit numbers based on meanings of the digits in each place</td></tr>
<tr><td></td><td>Compare using the symbols >, <, and =</td></tr>
</table>
Mastered Skills
<table>
<tr><td></td><td>Compare two numbers between 1 and 10</td></tr>
</table>
Introduced Skills
<table>
<tr><td></td><td>Explain that the three digits of a three-digit number represent amounts of hundreds, tens and ones</td></tr>
<tr><td></td><td>Round whole numbers to the nearest 10 or 100</td></tr>
</table>
Reviewed Skills
<table>
<tr><td></td><td>Explain that the two digits of a two-digit number represent amounts of tens and ones</td></tr>
<tr><td></td><td>Explain that the numbers 11-19 are composed of ten ones and one, two, three, four, five, six, seven, eight or nine ones.</td></tr>
<tr><td></td><td>Explain that the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones), and 100, 200, 300, etc. refer to one, two, three, etc. hundreds</td></tr>
</table>
Mastered Skills
<table>
<tr><td></td><td>Compose and decompose numbers from 11 to 19 into ten ones and some further ones</td></tr>
<tr><td></td><td>Explain that 10 can be thought of as a bundle of ten ones – called a “ten”, 100 as ten tens… etc.</td></tr>
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<td>

Whole number
Length
Width
Height
Weight
Temperature
Compare
Classify
Categories
Degrees
Thermometer
Meter
Centimeter
Kilometer
Hour
Minute
Second
Array
Quantity
Relationship[
Expanded form
Expanded numeral
Roman numeral
Equivalent
Counter clockwise
Less likely
More likely
Mixed number
Associative
Remainder
Twice

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<tr>
<td>How would you explain place value to someone?

Why are number patterns important in math?</td>
<td>Numbers and Operations of Base Ten A3

Use place value understanding and properties of operations to do arithmetic</td>
<td>
Introduced Skills
<table>
<tr><td></td><td>Demonstrate that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones and sometimes it is necessary to compose or decompose tens or hundreds</td></tr>
<tr><td></td><td>Mentally add and subtract 10 or 100 to or from a given number 100-900</td></tr>
<tr><td></td><td>Use and explain problem solving strategies based on place value and properties of operations</td></tr>
</table>
Reviewed Skills
<table>
<tr><td></td><td>Add within 100 by adding a two-digit number and a one-digit number</td></tr>
<tr><td></td><td>Add within 100 by adding a two-digit number and a multiple of 10</td></tr>
<tr><td></td><td>Add and subtract within 100 and 1000 using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction</td></tr>
<tr><td></td><td>Relate strategies to a written method and explain the reasoning</td></tr>
<tr><td></td><td>Demonstrate that in adding two-digit numbers, one adds tens and tens, ones and ones and sometimes it is necessary to compose a ten</td></tr>
<tr><td></td><td>Given a two-digit number, mentally find 10 more or 10 less without having to count</td></tr>
<tr><td></td><td>Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range of 10-90</td></tr>
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Approximate
Billion
Capacity
Composite number
Decade
Deposit
Diagonal
Fahrenheit
Hundredths
Thousandth
Number statement
Hundred million
Parallel
Perpendicular
Vertical
Ton
Unifix cubes
Value
yard

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<tr>
<td>Why do we use factions?</td>
<td>Number and Operations – Fractions A4

Develop understanding of fractions as numbers

Build fractions from unit fractions by applying and extending previous understanding of operation on whole numbers</td>
<td>
Introduced Skills
<table>
<tr><td></td><td>Explain a fraction a/b as the quantity formed by a parts of size 1/b (i.e. 2/3 is equal to 2 parts of 1/3)</td></tr>
<tr><td></td><td>Explain, represent and generate equivalent fractions</td></tr>
</table>
Reviewed Skills
<table>
<tr><td></td><td>Explain a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts (i.e. 1/3)</td></tr>
</table>
Mastered Skills
<table>
<tr><td></td><td>Recognize the division of an object or unit into equal parts: halves</td></tr>
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Introduced Skills
<table>
<tr><td></td><td>Explain addition and subtraction of fractions as joining and separating parts referring to the same whole</td></tr>
<tr><td></td><td>Breakdown a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation</td></tr>
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<td>How do we use measurement?</td>
<td>Measurement and Data B1

Describe and compare measurable attributes

Measure and estimate length is standard units</td>
<td>
Reviewed Skills
<table>
<tr><td></td><td>Compare the length of two objects indirectly by using a third object</td></tr>
<tr><td></td><td>Express the length of an object as a whole number of length units by laying multiple copies of a shorter object end to end</td></tr>
<tr><td></td><td>Explain that the length measurement of an object is the number of same-size length units that span it with no</td></tr>
<tr><td></td><td>Describe several measurable attributes of objects (i.e. length, weight, temperature)</td></tr>
<tr><td></td><td>Compare two objects with a measurable attribute in common</td></tr>
</table>
Mastered Skills
<table>
<tr><td></td><td>Classify objects into given categories</td></tr>
<tr><td></td><td>Count and sort the categories of objects</td></tr>
<tr><td></td><td>Describe temperature as hot, warm, cold, warmer than, cooler than, as warm as, etc.</td></tr>
<tr><td></td><td>Associate temperature in degrees Fahrenheit with weather</td></tr>
</table>
Introduced Skills
<table>
<tr><td></td><td>Measure the length of an object by selecting and using appropriate tools, i.e. ruler, yardstick, meter stick, measuring tape</td></tr>
<tr><td></td><td>Estimate lengths using units of inches, feet, centimeters and</td></tr>
<tr><td></td><td>Measure the length of an object twice using length units of different lengths and describe how the two measurements relate to the size of the chosen unit (cm, m, in., ft.)</td></tr>
<tr><td></td><td>Measure to determine how much longer one object is than another</td></tr>
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<tr>
<td>How do we measure length?

What tools can we use for measurement?

What is time?</td>
<td>Measurement and Data B1

Solve problems using measurement

Time - B2

Work with time</td>
<td>
Introduced Skills
<table>
<tr><td></td><td>Use addition and subtraction within 100 to solve word problems involving lengths</td></tr>
<tr><td></td><td>Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg) and liters (l)</td></tr>
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Reviewed Skills
<table>
<tr><td></td><td>Observe Celsius and Fahrenheit thermometers to measure and record temperature to the nearest degree</td></tr>
<tr><td></td><td>Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec, degrees</td></tr>
<tr><td></td><td>Identify temperatures in degrees Celsius and Fahrenheit</td></tr>
</table>
Mastered Skills
<table>
<tr><td></td><td>Recognize that temperature is measured in degrees</td></tr>
</table>
Introduced Skills
<table>
<tr><td></td><td>Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.</td></tr>
</table>
Reviewed Skills
<table>
<tr><td></td><td>Tell and write time in hours and half-hours using analog and digital clocks</td></tr>
<tr><td></td><td>Read the clock to tell time in terms of minutes before and after the hour</td></tr>
<tr><td></td><td>Write the date using words and numbers</td></tr>
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ESSENTIAL QUESTIONS	DOMAINS AND CLUSTERS	2nd GRADE MATH SKILLS	VOCABULARY	PRACTICES, RESOURCES & ASSESSMENT
Why do we use money? What is our currency system? How do we write and count money?	***Money - B3*** Work with money	**Introduced Skills** Solve problems involving dollar bills, quarters, dimes, nickels Use $ and ¢ symbols appropriately **Reviewed Skills** Identify and recognize relative value of penny, nickel, dime, quarter and dollar Show how different combinations of coins equal the same amount of money		
	Data – B4 Represent and interpret data	**Introduced Skills** Generate measurement data by measuring lengths of several objects to the nearest whole unit or making repeated Show data by making a line plot Represent a data set with several categories on a scaled **Reviewed Skills** Organize, represent and interpret data with up to three categories Ask and answer questions about the total number of data points – how many, how many more or less Show data with a picture graph and a bar graph Solve simple put-together, take-apart and compare problems using information presented in a graph Solve one- and two-step “how many more” and “how many less” problems using information presented in a graph		
	Geometric Shapes – B5 Explain, identify and use geometric shapes	**Introduced Skills** Explain concepts of area measurement Measure areas by counting unit squares (i.e. square cm, square m, square in, square ft) Find the area of a rectangle with whole-number side lengths by tiling it Recognize area as additive		

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<tr>
<td>How do we name shapes?

How do we find out how much space shapes take up?

How do we divide shapes into equal parts?</td>
<td>Geometry - C

Identify and describe shapes?

Analyze, compare, create, classify and compose shapes</td>
<td>
Introduced Skills
<table>
<tr><td></td><td>Recognize rhombuses, rectangles and square as quadrilaterals</td></tr>
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Reviewed Skills
<table>
<tr><td></td><td>Correctly name shapes regardless of orientation or size (square, circle, triangle, rectangle, hexagon, cube, cone, cylinder, sphere)</td></tr>
<tr><td></td><td>Identify shapes as two-dimensional</td></tr>
<tr><td></td><td>Identify shapes as three-dimensional</td></tr>
</table>
Mastered Skills
<table>
<tr><td></td><td>Describe objects in the environment using names of shapes</td></tr>
<tr><td></td><td>Describe the relative positions of objects (i.e. above, below, beside, in front of, behind, next to)</td></tr>
</table>
Introduced Skills
<table>
<tr><td></td><td>Partition rectangles into row and columns</td></tr>
<tr><td></td><td>Recognize that equal shares of identical wholes need not have the same shape</td></tr>
<tr><td></td><td>Draw points, lines, line segments, rays, angles and perpendicular and parallel lines</td></tr>
</table>
Reviewed
<table>
<tr><td></td><td>Distinguish between defining attributes (i.e. triangles are closed and three-sided) versus non-defining attributes (i.e. color, orientation, overall size)</td></tr>
<tr><td></td><td>Compose two-dimensional shapes or three-dimensional shapes to create a composite shape</td></tr>
<tr><td></td><td>Compose new shapes from composite shapes</td></tr>
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ESSENTIAL QUESTIONS	DOMAINS AND CLUSTERS	2nd GRADE MATH SKILLS	VOCABULARY	PRACTICES, RESOURCES & ASSESSMENT
	Geometry - C Analyze, compare, create, classify and compose shapes	**Reviewed** ☐ Partition circles and rectangles into equal shares ☐ Describe the divisions of shapes using the words halves, half of, fourths, fourth of, quarters and quarter of. ☐ Describe the whole of a shape as two of or four of the shares, two halves, three thirds, etc. ☐ Show that decomposing into more equal shares creates smaller shares of an object ☐ Analyze and compare two- and three-dimensional shapes ☐ Build and draw shapes to possess defining attributes ☐ Use informal language to describe similarities, different parts and other attributes of shapes ☐ Model shapes in the world by building and drawing shapes ☐ Compose simple shapes to form larger shapes (i.e. join two triangles to make a rectangle)		