

**Math Curriculum
Grade 2**

Essential Question(s): How do operations affect numbers?					
How do we use addition and subtraction to solve problems?					
21st Century Theme:					
Content: Operations and Algebraic Thinking					
Standards: 2.OA					
A. Represent and Solve problems involving addition and subtraction					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
1. Use addition and subtraction within 100 to solve one- and two- step word problems involving situations of adding to, taking apart and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	Concretely model and discuss a large variety of problems. Use drawings & equations with a symbol for the unknown number to represent the problem. Construct and solve open simple sentences. Solve for results unknown: $6-2=$ __ or $n=3+5$ Solve for parts unknown: $3+$ __= 8	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills	Counters Ten Frame Base Ten Blocks Number Line Abacus Calculator Computer Software Calendar		Digits Sum Addends Ten Frame Difference Equal

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Content: Operations and Algebraic Thinking					
21st Century Theme:					
Standards: 2.OA					
B. Add and subtract within 20					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
2. Fluently add and subtract with 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Model ways to make numbers up to 20 using ten frames, counting on, using doubles and near doubles, making tens Visualize single digit numbers on a ten frame.	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment	Cubes Ten Frame 100 and or 200 chart Number line Flash Cards Digit cards Spinners Base Ten Blocks Counting Cubes Dominos		Fact Families Doubles Left overs

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21st Century Theme:					
Content: Operations and Algebraic Thinking					
Standards: 2.OA					
C. work with equal groups of objects to gain foundations for multiplication.					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
3. Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2's; write an equation to express an even number as a sum of two equal addends.	Pairing groups of objects Counting objects in a group by 2s Write an equation to express an even number as a sum of two equal addends $\underline{\quad} + \underline{\quad} = 12$ even+even=even $\underline{\quad} + \underline{\quad} = 14$ odd + odd = even	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment	Connecting Cubes Tiles Grid Paper Number line	Literature Connections A Reminder of One by: Pinczes, Eleanor J. Houghton Mifflin 2002 Even Steven and Odd Todd by: Kathryn Cris Taldi (Hello Math Series- Can be found on U-Tube) Count on Pablo by: de Rubertis, Barbara Kane Press 1999	Remainder Odd Even
4. Use addition to find the total number of objects arranged in rectangular arrays with up to five rows and up to 5 columns; write an equation to express the total as a sum of equal addends.	Write an equation to express the total as a sum of equal addends Create a model array of...stickers, stamps, tiles, counters, etc.	Same as above	Objects used to develop arrays Grid Paper	Literature Connections Each Orange Had 8 Slices by: Giganti Mulberry Books, NY 1999	Row Column Array

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Essential Question(s): How do we understand place value and use properties of operations to add and subtract?					
21st Century Theme:					
Content: Number and Operations in Base Ten					
Standards: 2. NBT					
A. Understand place value					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: 100 can be thought of as a bundle of ten tens-- called a "hundred". The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	Understand that the three digits of a three digit number represent amounts of hundreds, tens and ones.	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	District Specific Texts Base ten blocks Place Value Manipulatives		Hundreds Tens Ones
2. Count within 1000; skip-count by 2s, 5s, 10s, and 100s	Count by multiples of 2s, 5s, 10s, and 100s	Same as above	Number line	Literature: Spunky Monkey Parade by: Stuart J. Murphy	Skip count
3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	Compose and decompose multi-digit numbers (including expanded form)	Same as above	Calculators Number line Abacus		

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4. Compare two three digit numbers based on meanings of the hundreds, tens, and ones digits, using symbols to record the results of comparisons.	Compare and order whole numbers to 1000 Use $<$, $>$, $=$ to compare whole numbers	Same as above	Ten Frame Base Ten Blocks		Standard Form Expanded Form Fact Family Ordinal Numbers Zero Property Word Form Greater than less than Greatest Least Number Sentence More than Less than
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**Math Curriculum
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Essential Question(s): How do we understand place value and use properties of operations to add and subtract?

21st Century Theme:

Content: Number and Operations in Base Ten

Standards: 2. NBT

B. Use place value understanding and properties of operations to add and subtract.

Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	Solve multi-digit addition and subtraction problems using a bar model	Formative Assessment Open-ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	District Specific Texts Spinners Calculators Counters Ten Frame Base Ten Number Lines Computer Software Abacus		Place Value Chart Regroup Add Subtract Compare Doubles Estimate Difference Sum
6. Add up to four two-digit numbers using strategies based on place value and properties of operations.	Apply the following properties of addition: Commutative, Zero as the identity element and Associative	Same as above	Same as above		Same as above

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<p>7. Add and subtract within 1000, 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. Understand 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.</p>	<p>Use different methods to develop fluency in adding and subtracting multi-digit numbers Use the inverse relationship between addition and subtraction Recall addition and subtraction facts Add and subtract whole numbers to 1000 Model addition and subtraction with place value</p>	<p>Same as above</p>	<p>Same as above</p>		<p>Same as above</p>
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Essential Question(s): How do we understand place value and use properties of operations to add and subtract?					
21st Century Theme:					
Content: Number and Operations in Base Ten					
Standards: 2. NBT					
B. Use place value understanding and properties of operations to add and subtract.					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
8. Mentally add 10 to 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900	Use mental math strategies to add and subtract Round to the nearest ten to estimate sums and difference	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	District Specific Texts Base Ten Number Lines Computer Software Abacus Spinner		Place Value Chart Subtract Compare Add Compare Doubles Estimate Difference Sum Regroup
9. Explain why addition and subtraction strategies work, using place value and the properties of operations.	Explanations may be supported by drawings or objects Construct, use, and explain in writing procedures for performing addition and subtraction in problem solving. Model addition and subtraction with place value	Same as above	Same as above		Same as above

**Math Curriculum
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Essential Question(s): How is measurement used in the real world?					
21st Century Theme:					
Content: Measurement and Data					
Standards: 2.MD					
A. Measure and estimate lengths in standard units.					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
1. Measure the length of an object by selecting and using appropriate tools, such as rulers, yardsticks, meter sticks, and measuring tapes.	Select and use appropriate tools such as rulers, yardsticks, meter sticks and measuring tape. (inch, foot, yard & centimeter)	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Open-ended problems End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	District Specific Texts Yardsticks Rulers Meter Sticks Measuring Tape Textbook Website Computer Software	Writing Activity: Write directions on how to measure something for someone who doesn't know how.	Inch Foot Yard Centimeter Meter Ruler Measuring Tape

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2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	Describe how the two measurements relate to the size of the unit chosen. Compare and measure lengths using customary and metric units.	Same as above	Same as above	Science: Measure the circumference of a pumpkin	Same as above
3. Estimate lengths using units of inches, feet, centimeters, and meters.	Solve problems involving estimation, measuring and computing length.	Same as above	Same as above		Same as above
4. Measure to determine how much longer one object is than another. Expressing the length difference in terms of a standard length unit.	Solve problems involving measuring and computing length.	Same as above	Same as above		Same as above

**Math Curriculum
Grade 2**

Essential Question(s): How is measurement used in the real world?					
21st Century Theme:					
Content: Measurement and Data					
Standards: 2.MD					
B. Relate addition and subtraction to length.					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary

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<p>5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g. by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.</p>	<p>Use drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. Build skills in addition and subtraction and measurement through problem solving. Solve real world problems involving addition, subtraction and multiplication. Apply and explain problem solving processes.</p>	<p>Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work</p>	<p>Number lines Rulers Manipulatives</p>		<p>Inch Foot Yard Centimeter Meter Ruler Yard Stick Measuring Tape 0-100 Number</p>
<p>6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0,1,2,... , and represent whole-number sums and differences within 100 on a number line diagram.</p>	<p>Demonstrate partitioning and transitivity in relation to length.</p>	<p>Same as above</p>	<p>Same as above</p>		<p>Same as above</p>

**Math Curriculum
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Essential Question(s): How is measurement used in the real world?					
21st Century Theme: Financial & Economic					
Content: Measurement and Data					
Standards: 2.MD					
C. Work with time and money					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
7.Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	Use A.M. and P.M. to write time. Tell time to five minutes.	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	District Specific Texts Computer Software Textbook Website Play Money Cardboard Replicas of Clocks Puzzles comparing clocks		Hour Minute Clock Digital Clock Analog Clock Dollar Quarter Dime Nickel Penny

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<p>8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and cents symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?</p>	<p>If you have 2 dimes and 3 pennies, how many cents do you have?</p>	<p>Same as above</p>	<p>Same as above</p>	<p>Literature Connection: If You Made a Million by: David M. Schwartz & Willow Morrow, 1994 Language Arts: Role Play going to the store Social Studies: Discuss Consumers, goods & services</p>	<p>Same as above</p>
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<p>Essential Question(s): How is measurement used in the real world?</p>					
<p>21st Century Theme:</p>					
<p>Content: Measurement and Data</p>					
<p>Standards: 2.MD</p>					
<p>D. Represent and interpret data.</p>					
<p>Skills</p>	<p>Instructional Procedures</p>	<p>Assessment</p>	<p>Resources</p>	<p>Interdisciplinary Connections</p>	<p>Vocabulary</p>

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<p>9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.</p>	<p>Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.</p>	<p>Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work</p>	<p>District Specific Texts Computer Software Textbook Website Play Money Replica of Clocks Puzzles comparing clocks</p>		<p>Picture Graphs Bar Graphs Line Plot Horizontal Vertical</p>
<p>10. Draw a picture graph and a bar graph (with single unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.</p>	<p>Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. Collect and organize data in different ways.</p>	<p>Same as above</p>	<p>Same as above</p>	<p>Language Arts: Identify a topic and create and write survey questions.</p>	<p>Same as above</p>

Essential Question(s):	How do we understand shapes and their attributes?
21st Century Theme:	
Content:	Geometry
Standards:	2.G
A. Reason with shapes and their attributes.	

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Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
<p>1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.</p>	<p>Identify parts of lines and curves. Identify, describe, sort and classify two-dimensional & three-dimensional shapes. Identify triangles, quadrilaterals, pentagons, hexagons & cubes.</p>	<p>Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work</p>	<p>Shapes Tangrams Geo-Board District Specific Texts Computer Software 3-D Shape Models Fraction Tiles</p>	<p>Literature: Greedy Triangle by: Mariln Burns</p>	<p>Whole Fraction Half Third Fourth Same Like Fractions Triangle</p>
<p>2. Partition a rectangle into rows and columns of same-sized squares and count to find the total number of them.</p>	<p>Compare and decompose two-dimensional shapes. Develop foundations for understanding area.</p>	<p>Same as above</p>	<p>Same as above</p>		<p>Hexagon Quadrilaterals Pentagon Cubes Symmetry</p>

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<p>3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc. And describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.</p>	<p>Connect geometric concepts with unit fractions, halves, thirds, fourths. Understand the relationship between a fraction and a whole. Compare and order halves, thirds, fourths using bar models.</p>	<p>Same as above</p>	<p>Same as above</p>		<p>Plane Shape Trapezoid Figure Rectangular Prism Pyramid</p>