

Cambria Heights School District Curriculum

Course Name	Mathematics
Grade Level	First Grade

Unit 1	Number and Operations – Base Ten			
Time Frame	4-5 Weeks			
Key Concepts	Essential Questions	PA Core Standard (Descriptor)	Eligible Content (Grades 3-5)	Terminology
Counting, Reading and Writing Numbers	<p>How does understanding place value help me write numbers?</p> <p>How does understanding place value help me read numbers?</p> <p>How does understanding place value help me count to 120?</p>	<p>CC.2.1.1.B.1 Extend the counting sequence to read and write numerals to represent objects</p>	<p>Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p>	
Place Value	<p>How do I use place value to compare numbers?</p> <p>How can I show numbers in different ways?</p>	<p>CC.2.1.1.B.2 Use place value concepts to represent amounts of tens and ones and to compare two digit numbers.</p>	<p>Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: a. 10 can be thought of as a bundle of ten ones — called a “ten.”b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.c. 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).</p>	

			Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.	
Addition and Subtraction	How do I use place value to help me add?	CC.2.1.1.B.3 Use place value concepts and properties of operations to add and subtract within 100.	Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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 and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	
	How do the addition properties help me add?		Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	
	How does understanding the relationship between addition and subtraction help me add?		Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), 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 and explain the reasoning used.	
	How can mental math help me find 10 more or 10 less than a number?			

Unit 2	Operations and Algebraic Thinking-			
Timeframe	5-6 Weeks			
Key Concepts	Essential Questions	PA Core Content Standard	Eligible Content	Terminology
Addition and Subtraction	How can I use what I know about addition and subtraction to solve problems?	CC.2.2.1.A.1 Represent and solve problems involving addition and subtraction within 20	<p>Use Addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem</p> <p>Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p>	
Relating Addition and Subtraction	<p>What are the properties of addition and subtraction?</p> <p>How do I apply the properties of addition and subtraction to solve problems?</p> <p>What is the relationship between addition and subtraction?</p>	CC.2.2.1.A.2 Understand and apply properties of operations and the relationship between addition and subtraction.	<p>Apply properties of operations as strategies to add and subtract. (Note: Students need not use formal terms for these properties.) Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)</p> <p>Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8</p>	

Unit 3 Measurement and Data	Solve problems involving measurement and estimation of intervals of time, money, liquid volumes, masses, and lengths of objects.			
Timeframe Key Concepts	5-6 Weeks			
	Essential Questions	PA Core Content Standard	Eligible Content	Terminology
	<p>How do I compare the lengths of objects?</p> <p>How do I use everyday objects for measurement?</p>	<p>CC.2.4.1.A.1 Order lengths and measure them both indirectly and by repeating length units.</p>	<p>Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p> <p>Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. <i>Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.</i></p>	
	<p>How do I use a clock to tell and write time to the hour?</p> <p>How do I use a clock to tell and write time to the half hour?</p>	<p>CC.2.4.1.A.2 Tell and write time to the nearest half hour using both analog and digital clocks.</p>	<p>Tell and write time in hours and half-hours using analog and digital clocks.</p>	

	<p>How do I use charts and tables to organize and represent data?</p> <p>How do I use charts and tables to ask and answer questions about data?</p>	<p>CC.2.4.1.A.4 Represent and interpret data using tables/charts.</p>	<p>Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p>	
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Unit 4	Geometry- Reason with Shapes and their attributes			
Timeframe	5-6 Weeks			
Key Concepts	Essential Questions	PA Core Content Standard	Eligible Content	Terminology
	<p>What are the attributes that define two- and three- sided shapes?</p> <p>How can I use the attributes of shapes to combine them in new ways?</p>	<p>CC.2.3.1.A.1 Compose and distinguish between two- and three-dimensional shapes based on their attributes.</p>	<p>Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.</p> <p>Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. (Note: Students do not need to learn formal names such as “right rectangular prism.”)</p>	
	<p>How do I divide circles and rectangles into two and four equal shares?</p> <p>How can I describe a part of a whole?</p>	<p>CC.2.3.1.A.2 Use the understanding of fractions to partition shapes into halves and quarters.</p>	<p>Partition circles and rectangles into two and four equal shares, describe the shares using the words <i>halves</i>, <i>fourths</i>, and <i>quarters</i>, and use the phrases <i>half of</i>, <i>fourth of</i>, and <i>quarter of</i>. Describe the whole as two of, or four of the shares. Understand for these examples that</p>	

What happens when I decompose a whole into more equal shares?

decomposing into more equal shares creates smaller shares.