

# 1 Grade Mathematics (Elmbrook School District)

Curriculum Area: Mathematics	Grade Level: 1st grade
Date last reviewed: December 8, 2015	Board approval date: February 3, 2016

## Desired Results:

Course Description and Purpose: This framework for improving student learning focuses on high-quality math standards. It provides teachers with a clear set of math concepts and skills for students to understand and be able to do by the end of the school year.

Enduring Understanding:	Essential Questions:
<p><b>Operations and Algebraic Thinking</b></p> <ul style="list-style-type: none"> <li>There is a relationship between addition and subtraction.</li> <li>There is a connection between counting and addition and subtraction.</li> </ul> <p><b>Number and Operations in Base Ten</b></p> <ul style="list-style-type: none"> <li>There is a relationship between the order of numbers and their magnitude.</li> <li>The understanding of properties of operations support addition and subtraction.</li> <li>Place value supports understanding of larger numbers.</li> </ul> <p><b>Measurement and Data</b></p> <ul style="list-style-type: none"> <li>Objects can be measured indirectly or by utilizing a standard unit.</li> </ul>	<p><b>Operations and Algebraic Thinking</b></p> <ul style="list-style-type: none"> <li>How can properties of operations be used to solve numerical problems?</li> <li>How can symbols be used to show the relationship between numbers?</li> </ul> <p><b>Number and Operations in Base Ten</b></p> <ul style="list-style-type: none"> <li>What is place value and how does it help us understand the relationship between numbers?</li> <li>How can properties of operations, relationships between numbers and place value be used when adding and subtracting numbers?</li> </ul> <p><b>Measurement and Data</b></p> <ul style="list-style-type: none"> <li>In what contexts can we use measurement?</li> <li>What is the value of telling time?</li> </ul>

<ul style="list-style-type: none"> <li>• Time is a unit of measurement.</li> <li>• Data can be represented and interpreted.</li> </ul> <p><b>Geometry</b></p> <ul style="list-style-type: none"> <li>• Shapes have attributes.</li> <li>• Shapes can be combined to create new shapes.</li> <li>• Shapes can be composed and decomposed using equal shares to create larger and smaller shapes.</li> </ul>	<ul style="list-style-type: none"> <li>• How can data be organized to better understand its meaning?</li> </ul> <p><b>Geometry</b></p> <ul style="list-style-type: none"> <li>• What's the value of knowing how to distinguish attributes of shapes?</li> <li>• How much and in what ways can 2D and 3D shapes be composed to create composite shapes?</li> <li>• What role do equal shares play in decomposing shapes?</li> </ul>
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**Assessment Evidence:**

Formative Assessments:	Summative Assessments:
Unit Pre-Assessments Fact Fluency Assessments (Q2, Q3, Q4) RSAs Exit Slips Kid Watching/Conferring	Unit Post Assessments MAP (Measures of Academic Progress) Testing RSAs Exit Slips Learning Models <a href="#">Fact Fluency Assessments</a>

**Instructional Outline:**

Mathematical Practice Standards

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 use of structure.
8. Look for and express regularity in repeated reasoning.

Operations and Algebraic Thinking (OA)		
Represent and solve problems involving addition and subtraction. (1.OA.1-2)		
Standards:	I Can Statements:	Essential Elements:
<b>OA.1</b> 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>I can solve addition and subtraction word problems.</p> <p>I can identify the unknown number in a story problem.</p>	<p><b>EE.1.OA.1.a</b> Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps) or acting out situations.</p> <p><b>EE.1.OA.1.b</b> Recognize two groups that have the same or equal quantity.</p>
<b>OA.2</b> 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>I can solve addition word problems with three numbers.</p> <p>I can identify the unknown number in a story problem.</p>	<b>EE.10A.2</b> Use “putting together” to solve problems with two sets.

**Understand and apply properties of operations and the relationship between addition and subtraction. (1.OA.3-4)**

Standards:	I Can Statements:	Essential Elements:
<p><b>OA.3</b> Apply the commutative and associative properties of operations as strategies to add.  <u>Commutative Property:</u> <math>a+b = b+a</math>  <u>Associative Property:</u> you can add regardless of how the numbers are grouped</p>	<p>I can group and reorder numbers when I add.</p>	<p>Not applicable. See <b>EE.6.EE.3</b> and <b>EE.N-- CN.2</b>.</p>
<p><b>OA.3</b> Apply properties of operations as strategies to subtract.</p>	<p>I can use addition strategies to solve subtraction problems.</p>	
<p><b>OA.4</b> Understand subtraction as an unknown-addend problem.</p>	<p>I can use what I know about addition to find the missing number within a fact family.</p>	<p>Not applicable. See <b>EE.1.NBT.4</b> and <b>EE.1.NBT.6</b></p>

**Add and subtract within 20. (1.OA.5-6)**

Standards:	I Can Statements:	Essential Elements:
<p><b>OA.5</b> Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p>	<p>I can understand that counting on is adding and counting back is subtracting.</p>	<p><b>EE.1.OA.5.a</b> Use manipulatives or visual representations to indicate the number that results when adding one more.</p>
		<p><b>EE.1.OA.5.b</b> Apply knowledge of “one less” to subtract one from a number.</p>
<p><b>OA.6</b> Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.</p>	<p>I can recall addition and subtraction facts.</p>	<p>Not applicable see <b>EE.3.OA.4</b></p>

<p><b>OA.6</b> Use strategies such as: counting on, making ten, decomposing a number leading to a ten, using the relationship between addition and subtraction, and creating equivalent but easier or known sums.  <u>Counting On:</u> +1, +2, or +3  <u>Making Ten/Bridge to Ten:</u> <math>8 + 6 = 8 + 2 + 4 = 10 + 4 = 14</math>  <u>Decomposing a Number Leading to a Ten:</u> <math>13 - 4 = 12 - 3 - 1 = 10 - 1 = 9</math>  <u>Using the Relationship Between Addition and Subtraction/Think Addition:</u> <math>12 - 8 = \_\_\_\_</math>  <u>Think addition!</u> <math>8 + \_\_\_\_ = 12</math>  <u>Creating Equivalent but Easier or Known Sums/Use Doubles:</u> <math>6 + 7 = 6 + 6 + 1 = 12 + 1 = 13</math></p>	<p>I can use strategies to help me add and subtract.</p>	
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**Work with addition and subtraction equations. (1.OA.7-8)**

<b>Standards:</b>	<b>I Can Statements:</b>	<b>Essential Elements:</b>
<p><b>OA.7</b> Understand the meaning of the equal sign.</p>	<p>I can understand the meaning of the equal sign.</p>	<p>Not applicable. See <b>EE 1.OA.1.b</b> and <b>EE.2.NBT.5.a</b></p>
<p><b>OA.7</b> Determine if equations involving addition and subtraction are true or false.</p>	<p>I can tell if an equation is true or false.</p>	<p>Not applicable. See <b>EE 3.OA.4</b></p>
<p><b>OA.8</b> Determine the unknown whole number in an addition or subtraction equation relating three whole numbers (e.g. <math>8 + ? = 11</math>, <math>5 = ? - 3</math>, <math>6 + 6 = ?</math>).</p>	<p>I can solve for the unknown number in addition and subtraction.</p>	

**Number & Operations in Base Ten (NBT)**

**Extend a counting sequence. (1.NBT.1)**

Standards:	I Can Statements:	Essential Elements:
<b>NBT.1</b> Count to 120, starting at any number less than 120.	I can counts to 120 starting at any number.	<b>EE.1 NBT.1a</b> Count by one's to 30
<b>NBT.1</b> Read and write numerals and represent a number of objects with a written numeral up to 120.	I can read and write numerals up to 120.  I can write a numeral to tell how many objects.	<b>EE.1 NBT.1b</b> Count as many as 10 objects and represents the quantity with the corresponding numeral.
<b>Understand place value. (1.NBT.2-3)</b>		
Standards:	I Can Statements:	Essential Elements:
<b>NBT.2</b> Understand that the two digits of a two-digit number represent amounts of tens and ones.  <u>Special Cases:</u> <ul style="list-style-type: none"> <li>● 10 can be thought of as a bundle of ten ones-called a “ten”.</li> <li>● The numbers from 11-19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.</li> <li>● 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).</li> </ul>	I can tell how many digits a number has.  I can tell which digits show the number of ones and tens.  I can understand that a bundle of ten ones is called one ten.  I can understand that the numbers 11-19 have one ten and some ones. I can understand that the numbers 10, 20, 30, 40, 50, 60, 70, 80, and 90 have some tens and 0 ones.	<b>EE.1.B.NBT.2</b> Create sets of 10
<b>NBT.3</b> Compare two two-digit numbers based on meanings of the tens and ones digits.	I can compare two two-digit numbers.	<b>EE.1.NBT.3</b> Compare two groups of 10 or fewer items when the number of items in each group is similar.

<p><b>NBT.3</b> Record comparisons of two-digit numbers with the symbols <math>&gt;</math>, <math>=</math>, and <math>&lt;</math>.</p>	<p>I can use <math>&lt;</math>, <math>&gt;</math>, and <math>=</math> to compare numbers.</p>	
<p>Use place value understanding and properties of operations to add and subtract (1.NBT.4-6)</p>		
<p><b>Standards:</b></p>	<p><b>I Can Statements:</b></p>	<p><b>Essential Elements:</b></p>
<p><b>NBT.4</b> Adding a two-digit number and a one-digit number.</p>	<p>I can add a two-digit number and a one-digit number.</p>	<p><b>EE.1.NBT.4</b> Compose numbers less than or equal to five in more than one way.</p>
<p><b>NBT.4</b> Adding a two-digit number and a multiple of ten.</p>	<p>I can add a two-digit number and a multiple of ten.</p>	
<p><b>NBT.4</b> Add within 100 using concrete models or drawings and strategies based on <i>place value</i>.</p>	<p>I can use models or drawings to add within 100.</p>	
<p><b>NBT.4</b> Add within 100 using concrete models or drawings and strategies based on <i>properties of operations</i>.</p>	<p>I can use models or drawings to add within 100.</p>	
<p><b>NBT.4</b> Relate the strategy to a written method (i.e. "Labeling" the strategy: model, picture, cubes, etc. with numbers, to show numerically what the mathematical strategy, or thinking was.)</p> <p><u>For Example:</u></p> <ul style="list-style-type: none"> <li>Using the <b>place value</b> strategy for addition may look like: <math>12 + 23 = 10 + 20 = 30</math>, <math>2 + 3 = 5</math>, <math>30 + 5 = 35</math></li> <li>Using the <b>properties of operations</b> for addition may look like: <math>12 + 23 = 12 + 20 = 32</math>, <math>32 + 3 = 35</math></li> </ul>	<p>I can use number models to show my math thinking/reasoning.</p>	

<b>NBT.4</b> Explain the reasoning used to relate the strategy to a written method.	I can explain my math thinking/reasoning.	
<b>NBT.4</b> Understand that in adding two-digit numbers, a person adds tens and tens and ones and ones (e.g. $12 + 23 = 10 + 20, 2 + 3, 30 + 5 = 35$ ).	I can add two-digit numbers by adding tens and tens and ones and ones.	
<b>NBT.4</b> Understand sometimes it is necessary to compose a ten when adding two-digit numbers (e.g. $27 + 18 = 20 + 10 = 30, 7 + 3 = 10, 30 + 10 = 40, 40 + 5 = 45$ ).	I can understand that sometimes I need to make a ten when adding two-digit numbers.	
<b>NBT.5</b> Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count (e.g. $20 + 10$ , or $34 + 10$ , or $30 - 10$ , or $42 - 10$ ).	I can mentally find 10 more or 10 less than a number.	Not applicable. See <b>EE.1.OA.5.a</b> and <b>EE.1.OA.5.b</b>
<b>NBT.5</b> Explain the reasoning used to mentally find 10 more or 10 less than a number.	I can explain my math thinking/reasoning.	
<b>NBT.6</b> Using concrete models or drawings subtract multiples of ten in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences) (e.g. $80 - 20$ , or $70 - 40$ ) using strategies based on <b>place value</b> .	I can use models or drawings to subtract groups of ten.	<b>EE.1.NBT.6</b> Decompose numbers less than or equal to five in more than one way.
<b>NBT.6</b> Using concrete models or drawings subtract multiples of ten in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences) (e.g. $80 - 20$ , or $70 - 40$ ) using strategies based on <b>properties of operations</b> .	I can use models or drawings to subtract groups of ten.	

<p><b>NBT.6</b> Using concrete models or drawings subtract multiples of ten in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences) (e.g. 80 - 20, or 70 - 40) using the <b>relationship</b> between addition and subtraction.</p>	<p>I can use models or drawings to subtract groups of ten.</p>	
<p><b>NBT.6</b> Relate the strategy to a written method (i.e. “Labeling” the strategy: model, picture, cubes, etc. with numbers, to show numerically what the mathematical strategy, or thinking was.)</p> <p><u>For Example:</u></p> <ul style="list-style-type: none"> <li>Using the <b>place value</b> strategy for subtraction may look like: I know <math>6 - 2 = 4</math>, so I know <math>60 - 20 = 40</math>.</li> <li>Using the relationship between addition and subtraction may look like: <math>60 - 20 = \underline{\quad}</math> Think Addition! <math>20 + \underline{\quad} = 60</math>.</li> </ul>	<p>I can use number models to show my math thinking/reasoning.</p>	
<p><b>NBT.6</b> Explain the reasoning used to relate the strategy to a written method.</p>	<p>I can explain my math thinking/reasoning.</p>	

**Measurement and Data (MD)**

**Measure lengths indirectly and by iterating length units. (1.MD.1-2)**

<b>Standards:</b>	<b>I Can Statements:</b>	<b>Essential Elements:</b>
<p><b>MD.1</b> Order three objects by length.</p>	<p>I can order three objects by length.</p>	<p><b>EE.1.MD.1-2</b> Compare lengths to identify which is longer/shorter, taller/shorter.</p>
<p><b>MD.1</b> Compare the lengths of two objects</p>	<p>I can compare the lengths of two</p>	

indirectly by using a third objects.	objects using a third object.	
<b>MD.2</b> Express the length of an object as a whole number of length units, by laying multiples copies of a shorter object (the length unit) end to end.	I can measure an object using a shorter object.	
<b>MC.2</b> Understand the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.	I can use same size objects to measure with no gaps or overlaps.	
<b>Tell and Write Time (1.MD.3)</b>		
<b>Standards:</b>	<b>I Can Statements:</b>	<b>Essential Elements:</b>
<b>MD.3</b> Tell and write time in hours and half-hours using analog and digital clocks.	<p>I can tell and write time to the hour using analog and digital clocks.</p> <p>I can tell and write time to the half hour using analog and digital clocks.</p>	<p><b>EE.1MD.3.a</b> Demonstrate an understanding of the terms tomorrow, yesterday and today.</p> <p><b>EE.1MD.3.b</b> Demonstrate an understanding of the terms morning, afternoon, day and night.</p> <p><b>EE.1MD.3.c</b> Identify activities that come before, next, and after.</p> <p><b>EE.1MD.3.d</b> Demonstrate an understanding that telling time is the same every day.</p>
<b>Represent and interpret data. (1.MD.4)</b>		
<b>Standards:</b>	<b>I Can Statements:</b>	<b>Essential Elements:</b>

MD.4 Organize, represent, and interpret data with up to three categories.	I can organize, represent, and interpret data.	EE.1.MD.4 Organize data into categories by sorting.
MD.4 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.	I can ask and answer question about the data.	
<b>Geometry (G)</b>		
<b>Reason with shapes and their attributes (1.G.1-3)</b>		
<b>Standards:</b>	<b>I Can Statements:</b>	<b>Essential Elements:</b>
G.1 Distinguish between defining attributes (e.g. triangles are closed and three sided) versus non-defining attributes (e.g. color, orientation, overall size).	I can use attributes to tell what a shape is and is not.	EE.1.G.1 Identify the relative position of objects that are on, off, in, and out.
G.1 Build and draw shapes to possess defining attributes.	I can build and draw shapes to possess defining attributes.	
G.2 Compose two-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create composite shapes, and compose new shapes from the composite shape.	I can use two-dimensional shapes to create a new shape.	EE. 1.G.2 Sort shapes of same size and orientation (circle, square, rectangle, triangle).
G.2 Compose 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.	I can use three-dimensional shapes to create a new shape.	
G.3 Partition circles and rectangles into two	I can divide circles and rectangles	EE.1.G.3 Put together two

and four equal shares.	into two and four equal shares.	pieces to make a shape that relates to the whole (i.e., two semicircles to make a circle, two squares to make a rectangle).
<b>G.3</b> Describe the whole as all of the equal shares (e.g. Two halves or four fourths).	I can describe the whole as all of the equal shares.	
<b>G.3</b> Describe equal shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of.	I can describe equal shares using the words: halves, fourths, and quarters.  I can describe equal shares using the words: half of, fourth of, and quarter of.	
<b>G.3</b> Understand that decomposing into more equal shares creates smaller shares.	I can understand that when a shapes is divided into more pieces, the size of the pieces gets smaller.	

### Resources

#### **Dreambox** [dreambox.com](http://dreambox.com)

Dreambox is an online learning system. It uses adaptive questioning to determine and deliver the right lesson at the right time to personalize to the individual student. All domains and standards are addressed through this online learning system. Use in Grades K-5 as an intervention or enrichment tool.

#### **Everyday Math Resources**

*Everyday Mathematics* is a comprehensive Pre-K through Grade 6 mathematics program engineered for the Common Core State Standards. Developed by The University of Chicago, School Mathematics Project, the *Everyday Mathematics* spiral curriculum continually reinforces abstract math concepts through concrete real-world applications.

**Front Row [frontrowed.com](http://frontrowed.com)**

Front row is an online learning system. It uses adaptive questioning to determine and deliver the right lesson at the right time to personalize to the individual student. All domains and standards are addressed through this online learning system. Use in Grades K-5 as an intervention or enrichment tool.

**Khan Academy [khanacademy.org](http://khanacademy.org)**

Khan Academy is an online learning resource. It offers practice exercises, instructional videos, and a personalized learning system. The math missions is adaptive to guide learners in their strengths and learning gaps. All domains and standards are addressed through this online learning system. Use in Grades K-5 as a supplemental resource tool.

**Xtra Math [xtramath.org](http://xtramath.org)**

Xtra Math is an online math fact fluency program that helps students master addition, subtraction, multiplication, and division facts. Two domains, Operations and Algebraic Thinking and Number and Operations in Base Ten, are addressed. Use in Grades 2-5 as a supplemental resource tool.

**Vizzle**

VizZle is an online researched-based program that provides a library of more than 14,000 lessons and the tools and media to customize them or create your own from scratch. The lessons can be tailored to any grade level, assigned to any student, and played on iPad or Android tablets, laptop or desktop computers. Data is tracked automatically. This award-winning Special Education Software is developed collaboratively with educators.

**Equals Mathematics**

Equals Mathematics is a K-12, standards-based curriculum for students with mild, moderate, and severe disabilities.

**\*\*\*A variety of ipads apps that provide practice in specific domains of the Common Core State Standards.\*\*\***