



Indiana Academic Standards for Mathematics – Third Grade  
Adopted April 2014 – Standards Resource Guide Document

This Teacher Resource Guide has been developed to provide supporting materials to help educators successfully implement the Indiana Academic Standards for Third Grade Mathematics- Adopted April 2014. These resources are provided to help you in your work to ensure all students meet the rigorous learning expectations set by the Academic Standards. Use of these resources is optional-teachers should decide which resource will work best in their school for their students.

The Indiana Department of Education would like to thank Lisa Ader, Pamela Cintas, Johanna Huls, Ben Kemp, Jamee McMurray, Jim Mirabelli, Kathy Spivey, and Rhonda Van Winkle for their contributions to this document.

This Resource Guide will be updated as necessary.

The examples in this document are for illustrative purposes only, to promote a base of clarity and common understanding. *Each example illustrates a standard but please note that examples are not intended to limit interpretation or classroom applications of the standards.*

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#### **GOOD WEBSITES FOR MATHEMATICS:**

<http://nlvm.usu.edu/en/nav/vlibrary.html>

<http://www.math.hope.edu/swanson/methods/applets.html>

<http://learnzillion.com>

<http://illuminations.nctm.org>

<https://teacher.desmos.com>

<http://illustrativemathematics.org>

<http://www.insidemathematics.org>

<https://www.khanacademy.org/>

<https://www.teachingchannel.org/>

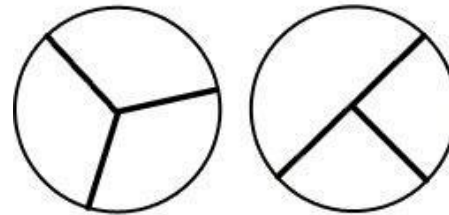
<http://map.mathshell.org/materials/index.php>

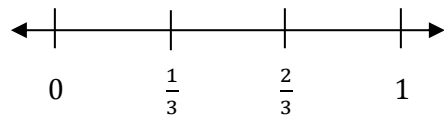
<https://www.istemnetwork.org/index.cfm>

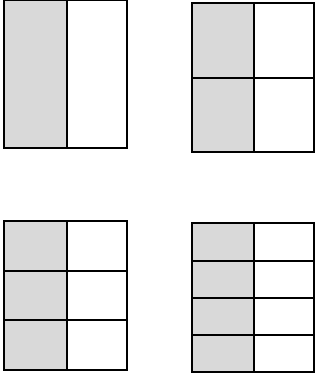
<http://www.azed.gov/azccrs/mathstandards/>

	Indiana Academic Standard for Mathematics Third Grade – Adopted April 2014	Highlighted Vocabulary Words from the Standard Defined	Specific Third Grade Example for the Standard	Specific Third Grade Electronic Resource for the Standard
<b>Number Sense</b>				
MA.3.NS.1	Read and write whole numbers up to 10,000. Use <b>words</b> , <b>models</b> , <b>standard form</b> and <b>expanded form</b> to represent and show equivalent forms of <b>whole numbers</b> up to 10,000.	<p><b>Whole numbers</b> - the set of numbers 0, 1, 2, 3, 4, 5, etc.</p> <p><b>Word form</b> - a number written in words</p> <p><b>Models</b> - a picture representation of the number</p> <p><b>Standard form</b> - a number written in a way that shows only its digits</p> <p><b>Expanded form</b> - a number written as the sum of the values of its digits</p>	<p>a) Write the numeral below in standard form and expanded form.</p> <p style="text-align: center;"><i>five thousand, seven hundred two</i></p> <p>b) Activity: create riddles such as, "I have 5 tens, 12 ones and 3 hundreds. What number am I?"</p> <p>c) Activity: create "I Have - Who Has" cards. For example, one card might have "6,485" on it, another card could have "6000+400+80+5", and another card "six thousand, four hundred eighty-five". Each student would have one card and need to find classmates who have cards with an equivalent value in a different representation.</p>	<p><a href="http://www.ixl.com/math/grade-3/write-numbers-in-words">http://www.ixl.com/math/grade-3/write-numbers-in-words</a></p>
MA.3.NS.2	Compare two whole numbers up to 10,000 using $>$ , $=$ , and $<$ symbols.		<p>a) Use <math>&gt;</math>, <math>=</math>, or <math>&lt;</math> to compare the numbers.</p> <p style="text-align: center;">4,625    <math>\underline{\quad}</math>    4,652</p> <p>b) Activity: students play a variation on the card game "War" making the largest possible number from four dealt cards and then comparing their numbers using the signs <math>&lt;</math>, <math>&gt;</math>, and <math>=</math> printed on index cards.</p>	<p><a href="http://www.ixl.com/math/grade-3/comparing-numbers">http://www.ixl.com/math/grade-3/comparing-numbers</a></p>

<p>MA.3.NS.3</p>	<p>Understand a fraction, <math>1/b</math>, as the quantity formed by 1 part when a whole is <b>partitioned</b> into <math>b</math> equal parts; understand a fraction, <math>a/b</math>, as the <b>quantity</b> formed by <math>a</math> parts of size <math>1/b</math>. <i>[In grade 3, limit denominators of fractions to 2, 3, 4, 6, 8.]</i></p>	<p><b>Quantity</b> - amount of something <b>Partitioned</b> - divided</p>	<p>Students initial understandings of fraction should include being composed of many equal pieces called unit fractions (i.e. fractions with numerator 1). For example, the fraction <math>5/6</math> is composed of five <math>1/6</math> pieces. Students should also recognize figures that have been divided into fractional parts and those which have not. The figure below on the left is an example of thirds but the one on the right does not show thirds. However, students might indicate that the figure on the right has one part which is <math>1/2</math> and two parts showing <math>1/4</math> and conclude that the two sides are equivalent.</p>	<p><a href="https://www.illustrativemathematics.org/illustrations/833">https://www.illustrativemathematics.org/illustrations/833</a></p>
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MA.3.NS.4	<p>Represent a fraction, <math>\frac{1}{b}</math>, on a <b>number line</b> by defining the <b>interval</b> from 0 to 1 as the whole, and partitioning it into <math>b</math> equal parts. Recognize that each part has size <math>\frac{1}{b}</math> and that the <b>endpoint</b> of the part based at 0 locates the number <math>\frac{1}{b}</math> on the number line.</p>	<p><b>Number line</b>- a straight line on which there is indicated a one-to-one correspondence between points on the line and the set of real numbers.</p> <p><b>Interval</b>- space between two points, in this case the space between 0 and 1</p> <p><b>Endpoint</b>-the last point on a segment or ray</p>	<p>a) Represent <math>\frac{1}{6}</math> on a number line.</p> <p>Note: In the picture below, the whole is defined from 0 to 1. It has been divided into 3 equal parts or thirds. The fraction <math>\frac{1}{3}</math> is the space between 0 and <math>\frac{1}{3}</math>. Students will often count the tic marks and think that it shows fourths rather than thirds. One way to introduce fractions is through measurement activities using a ruler and relating it to a number line. It may also help to start by having students use number lines to create the benchmarks for a half, a quarter, three quarters, etc.</p> 	<p><a href="https://www.illustrativemathematics.org/illustrations/168">https://www.illustrativemathematics.org/illustrations/168</a></p>
MA.3.NS.5	<p>Represent a fraction, <math>\frac{a}{b}</math>, on a number line by marking off lengths <math>\frac{1}{b}</math> from 0. Recognize that the resulting interval has size <math>\frac{a}{b}</math>, and that its endpoint locates the number <math>\frac{a}{b}</math> on the number line.</p>		<p>a) Represent <math>\frac{3}{8}</math> on a number line.</p> <p>b) Represent <math>\frac{5}{4}</math> on a number line.</p>	

MA.3.NS.6	Understand two fractions as <b>equivalent</b> (equal) if they are the same size, based on the same whole or the same point on a number line.	<b>Equivalent-</b> having the same or equal value	<p>Note: Fraction models can be used to help students understand fraction equivalence. The models below show that <math>\frac{1}{2}</math>, <math>\frac{2}{4}</math>, <math>\frac{3}{6}</math>, and <math>\frac{4}{8}</math> are equivalent.</p> 	<a href="https://www.illustrativemathematics.org/illustrations/871">https://www.illustrativemathematics.org/illustrations/871</a>
MA.3.NS.7	Recognize and generate simple <b>equivalent fractions</b> (e.g., $1/2 = 2/4$ , $4/6 = 2/3$ ). Explain why the fractions are equivalent (e.g., by using a visual fraction model).	<b>Equivalent fractions</b> -fractions that name the same part of a whole, same part of a set, or same location on a number line	Name two fractions that are equivalent to $\frac{2}{3}$ . Explain how you know they are equivalent.	<a href="http://www.ixl.com/math/grade-3/equivalent-fractions-choose-the-equivalent-fraction">http://www.ixl.com/math/grade-3/equivalent-fractions-choose-the-equivalent-fraction</a>



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MA.3.NS.8	Compare two fractions with the same numerator or the same denominator by reasoning about their size based on the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions (e.g., by using a visual fraction model).		<p>Use &gt;, =, or &lt; to compare the fractions. Explain how you know your answer is correct.</p> $\frac{2}{8} \quad \text{—} \quad \frac{3}{8}$ $\frac{5}{6} \quad \text{—} \quad \frac{5}{4}$	
MA.3.NS.9	Use <b>place value</b> understanding to round 2- and 3-digit whole numbers to the nearest 10 or 100.	<b>Place value-</b> the value of the place, or position, of a digit in a number	<p>a) Round each number to the nearest 10.</p> <ul style="list-style-type: none"> <li>• 64, 71, 46, 25, 963, 577, 206</li> </ul> <p>b) Round each number to the nearest 100.</p> <ul style="list-style-type: none"> <li>• 863, 577, 206, 354, 729</li> </ul>	



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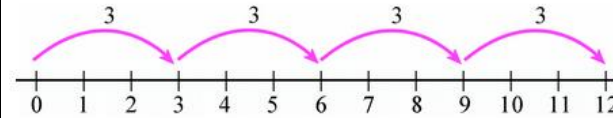
**Computation**

MA.3.C.1	Add and subtract whole numbers <b>fluently</b> within 1000.	<b>Fluently</b> - efficient and accurate	Evaluate each expression.	
			$345 + 89$ $86 - 45$ $502 + 293$	
			$784 - 691$ $402 - 165$ $487 + 465$	

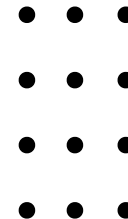
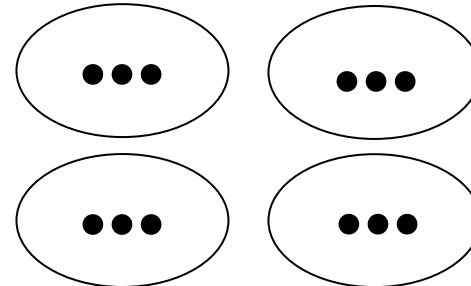
MA.3.C.2 Represent the concept of multiplication of whole numbers with the following models: **equal-sized groups, arrays, area models**, and equal "jumps" on a number line. Understand the **properties of 0 and 1** in multiplication.

**Equal-sized groups** - groups of the same quantity  
**Arrays**- a way of displaying objects in rows and columns  
**Area models** - models showing multiplication related to area  
**Multiplicative Identity Property of 1**- when you multiply a number by 1, the product equals the given number  
**Multiplicative Property of Zero** - when you multiply a number by 0, the product equals 0

For the 4 models below, explain why each shows or does not show the product of 4 and 3.

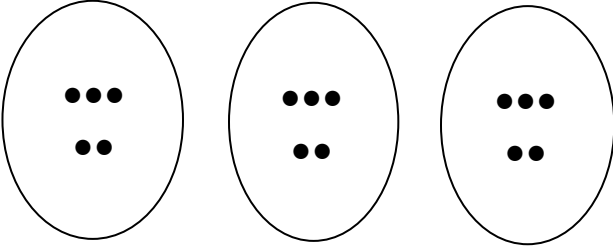



1 <sup>st</sup> number	2 <sup>nd</sup> number	Product
* * * *	* * *	* * * * * * *



<http://www.ixl.com/math/grade-3/related-addition-and-multiplication>



<p>MA.3.C.3</p>	<p>Represent the concept of division of whole numbers with the following models: partitioning, sharing, and an <b>inverse</b> of multiplication. Understand the <b>properties of 0 and 1 in division</b>.</p>	<p><b>Property of 1 in division</b> - any number (except 0) divided by itself is equal to 1. Any number divided by 1 is equal to that number.</p> <p><b>Property of 0 in division</b> - zero divided by any number (except 0) is zero. A number cannot be divided by zero.</p> <p><b>Inverse</b>- the inverse of multiplication is division.</p>	<p>For the 3 models below, explain why each shows or does not show <math>15 \div 3</math>.</p> <hr/>  <hr/> <p style="text-align: center;"><math>5 \times 3 = 15, \text{ so } 15 \div 3 = 5</math></p> <hr/> 	<p><a href="http://www.ixl.com/math/grade-3/division-word-problems-facts-to-10">http://www.ixl.com/math/grade-3/division-word-problems-facts-to-10</a></p>
<p>MA.3.C.4</p>	<p>Interpret whole-number <b>quotients</b> of whole numbers (e.g., interpret <math>56 \div 8</math> as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each).</p>	<p><b>Quotient</b>- when one number (dividend) is divided by another number (divisor), the result obtained is known as quotient</p>	<p>Zack has 72 pencils. He will divide them equally into 9 groups. Which expression represents this situation?</p> <ul style="list-style-type: none"> <li>• <math>72 + 9</math></li> <li>• <math>72 - 9</math></li> <li>• <math>72 \times 9</math></li> <li>• <math>72 \div 9</math></li> </ul>	<p><a href="https://www.illustrativemathematics.org/illustrations/1531">https://www.illustrativemathematics.org/illustrations/1531</a></p> <p><a href="https://www.illustrativemathematics.org/illustrations/1540">https://www.illustrativemathematics.org/illustrations/1540</a></p>



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MA.3.C.5	Multiply and divide within 100 using strategies, such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$ , one knows $40 \div 5 = 8$ ), or properties of operations.		Evaluate each expression.  $30 \times 3$ $72 \div 9$ $24 \times 3$  $76 \div 4$ $19 \times 5$ $84 \div 7$	<a href="http://www.ixl.com/math/grade-3/related-multiplication-and-division">http://www.ixl.com/math/grade-3/related-multiplication-and-division</a>
MA.3.C.6	Demonstrate <b>fluency</b> with multiplication facts and corresponding division facts of 0 to 10.	<b>Fluently</b> - efficient and accurate	Evaluate each expression.  $5 \times 7$ $3 \times 9$ $0 \times 2$ $6 \times 8$  $7 \times 1$ $1 \times 4$ $6 \times 9$ $24 \div 6$  $64 \div 8$ $63 \div 9$ $35 \div 5$ $20 \div 4$  $9 \div 1$ $81 \div 9$	<a href="http://www.ixl.com/math/grade-2/multiplication-tables-up-to-10">http://www.ixl.com/math/grade-2/multiplication-tables-up-to-10</a>  <a href="http://www.multiplication.com/games/play/math-models">http://www.multiplication.com/games/play/math-models</a>

**Algebraic Thinking**

MA.3.AT.1	Solve real-world problems involving addition and subtraction of whole numbers within 1000 (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).		<p>a) The 3rd and 4th grade students are going on a field trip. There are 423 students going altogether and 157 of them are 3rd grade students. How many 4th grade students are going on the field trip?</p> <p>b) A third grade class collected 235 cans for their food drive. The fourth grade class collected 137 cans.</p> <ul style="list-style-type: none"> <li>• How many cans did they collect altogether?</li> <li>• How many more cans did the third grade class collect than the fourth grade class?</li> <li>• How many more cans are needed to have a total of 700 cans?</li> </ul>	<p><a href="https://www.illustrativemathematics.org/illustrations/1315">https://www.illustrativemathematics.org/illustrations/1315</a></p>
MA.3.AT.2	Solve real-world problems involving whole number multiplication and division within 100 in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).		<p>a) Jill bought 48 flowers. She will divide these equally into 6 vases. How many flowers will she put in each vase?</p> <p>b) Jerry bought 9 packages of cookies. Each package contains 10 cookies. How many cookies did he buy in all?</p>	<p><a href="https://www.illustrativemathematics.org/illustrations/262">https://www.illustrativemathematics.org/illustrations/262</a></p>



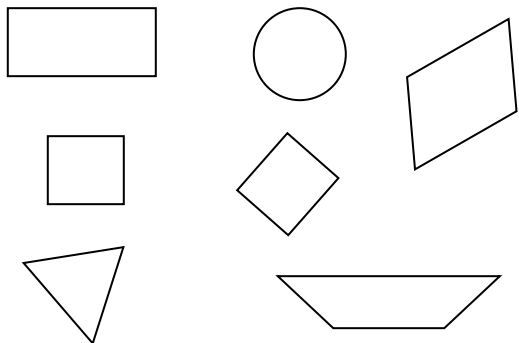
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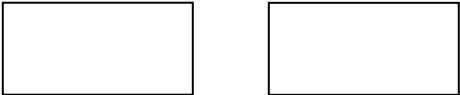
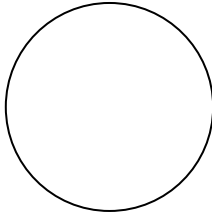
MA.3.AT.3	Solve two-step real-world problems using the four operations of addition, subtraction, multiplication and division (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).		<p>a) Sydney collected 231 rocks last week and 137 rocks this week. She gave 53 of the rocks to her friends. How many rocks does she have now?</p> <p>b) Eric’s goal is to practice his math facts for a total of 75 minutes this week. He practiced yesterday for 15 minutes. For the next 6 days, he will practice the same amount of time each day. How many minutes will Eric need to practice each day to reach his goal?</p>	<p><a href="https://www.illustrativemathematics.org/illustrations/1301">https://www.illustrativemathematics.org/illustrations/1301</a></p>
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MA.3.AT.4	Interpret a multiplication equation as equal groups (e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each). Represent verbal statements of equal groups as multiplication equations.		<p>a) Which two statements could represent <math>6 \times 4</math> ?</p> <ul style="list-style-type: none"> <li>The total number of oranges if Bill has 6 bags with 4 oranges in each bag.</li> <li>The total number of oranges if Bill has 6 oranges and Amy has 4 oranges.</li> <li>The total number of oranges if Bill has 4 oranges and Amy has 6 oranges.</li> <li>The total number of oranges if Bill has 4 bags with 6 oranges in each bag.</li> </ul> <p>b) Which two expressions could represent “the total number of marbles if 5 marbles are placed on each of 10 desks?”</p> <p style="text-align: center;"> <math>10 \times 5</math>    <math>10 + 5</math>    <math>10 \div 5</math>  <math>10 - 5</math>    <math>5 + 10</math>    <math>5 \times 10</math> </p>	<a href="http://www.ixl.com/math/grade-3/multiplication-sentences">http://www.ixl.com/math/grade-3/multiplication-sentences</a>
MA.3.AT.5	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.		<p>What is the missing number in each equation?</p> <p style="text-align: center;"> <math>24 = \square \times 6</math>    <math>? \times 7 = 56</math>    <math>9 = 72 \div \square</math>  <math>6 = \square \div 7</math>    <math>? \div 5 = 6</math> </p>	

MA.3.AT.6	Create, extend, and give an appropriate rule for number patterns using multiplication within 100.		<p>a) A pattern is shown in the table below. To find the 2<sup>nd</sup> Number, a math operation is done to the 1<sup>st</sup> Number. Describe how to find the 2<sup>nd</sup> Number and complete the table.</p> <table border="1" data-bbox="1029 527 1659 600"> <tr> <td>1<sup>st</sup> Number</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>2<sup>nd</sup> Number</td> <td>7</td> <td>14</td> <td>21</td> <td>28</td> <td></td> <td></td> </tr> </table> <p>b) Activity: Have students create their own number pattern. Then, have them switch patterns with other students to try to determine each others' rule.</p>	1 <sup>st</sup> Number	1	2	3	4	5	6	2 <sup>nd</sup> Number	7	14	21	28			<a href="https://www.teachervision.com/multiplication/lesson-plan/3033.html">https://www.teachervision.com/multiplication/lesson-plan/3033.html</a>
1 <sup>st</sup> Number	1	2	3	4	5	6												
2 <sup>nd</sup> Number	7	14	21	28														

### Geometry

MA.3.G.1	Identify and describe the following: cube, sphere, prism, pyramid, cone, and cylinder.		Describe similarities and differences between a pyramid and cone.	<a href="http://www.ixl.com/math/grade-3/identify-planar-and-solid-shapes">http://www.ixl.com/math/grade-3/identify-planar-and-solid-shapes</a>
MA.3.G.2	Understand that shapes (e.g., rhombuses, rectangles, and others) may share <b>attributes</b> (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize and draw rhombuses, rectangles, and squares as examples of quadrilaterals. Recognize and draw examples of quadrilaterals that do not belong to any of these subcategories.	<b>Attributes</b> - characteristics or features	<p>Which two shapes do not belong in this group? Describe how they are different from the other 5 shapes.</p> 	<a href="http://www.ixl.com/math/grade-3/which-2-dimensional-shape-is-being-described">http://www.ixl.com/math/grade-3/which-2-dimensional-shape-is-being-described</a>

MA.3.G.3	Identify, describe and draw points, lines and line segments using appropriate tools (e.g., ruler, straightedge, and technology), and use these terms when describing two-dimensional shapes.		<p>a) Draw a point, line segment, and line.</p> <p>b) Describe how a line segment is different than a line.</p> <p>Activity: Have students identify objects inside and outside the classroom and describe where they see points and lines represented.</p>	<a href="https://www.illustrativemathematics.org/illustrations/1263">https://www.illustrativemathematics.org/illustrations/1263</a>
MA.3.G.4	Partition shapes into parts with equal areas. Express the area of each part as a <b>unit fraction</b> of the whole ( $\frac{1}{2}$ , $\frac{1}{3}$ , $\frac{1}{4}$ , $\frac{1}{6}$ , $\frac{1}{8}$ ).	<b>Unit fraction</b> - a fraction with a numerator of 1.	<p>a) Divide the rectangle on the left so that it is split into 3 parts with equal areas. Then, divide the other rectangle in a different way but still into 3 parts with equal areas.</p> <div style="text-align: center;">  </div> <p>b) Divide the circle so that it is split into 4 parts with equal areas. Then, determine how much each area represents in terms of the whole circle.</p> <div style="text-align: center;">  </div>	<a href="https://www.illustrativemathematics.org/illustrations/1502">https://www.illustrativemathematics.org/illustrations/1502</a>

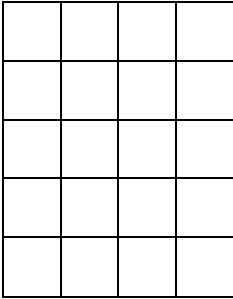
## Measurement

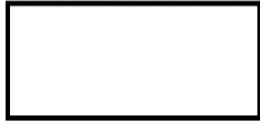
MA.3.M.1	Estimate and measure the <b>mass</b> of objects in grams (g) and kilograms (kg) and the volume of objects in quarts (qt), gallons (gal), and liters (l). Add, subtract, multiply, or divide to solve one-step real-world problems involving masses or <b>volumes</b> that are given in the same units (e.g., by using drawings, such as a beaker with a measurement scale, to represent the problem).	<b>Mass</b> - the amount of matter an object contains <b>Volume</b> - the amount of 3-dimensional space an object occupies; capacity	<p>a) Mr. Ruiz wants to bring lemonade for his 24 students on Friday. Which amount of lemonade would be reasonable for Mr. Ruiz to bring for his students?</p> <ul style="list-style-type: none"> <li>• About 4-5 quarts</li> <li>• About 2-3 gallons</li> <li>• About 1 liter</li> </ul> <p>b) Activity: Have students identify five things that have a mass of about 1 gram, 5 grams, 10 grams, and 1 kilogram. This may help students develop gram benchmarks.</p>	<p><a href="https://learnzillion.com/lessons?utf8=%E2%9C%93&amp;filters%5Bsubject%5D=math&amp;query=3.MD.2&amp;commit=Search+lessons">https://learnzillion.com/lessons?utf8=%E2%9C%93&amp;filters%5Bsubject%5D=math&amp;query=3.MD.2&amp;commit=Search+lessons</a></p> <p><a href="https://www.illustrativemathematics.org/illustrations/1929">https://www.illustrativemathematics.org/illustrations/1929</a></p>
MA.3.M.2	Choose and use appropriate units and <b>tools</b> to estimate and measure length, weight, and temperature. Estimate and measure length to a quarter-inch, weight in pounds, and temperature in degrees Celsius and Fahrenheit.	<b>Tools</b> - may include rulers, balance or scales, beakers, graduated cylinders, and thermometers	<p>a) What is the length of the line segment to the nearest quarter-inch?</p> <p style="text-align: center;">_____</p> <p>b) Based on the thermometer below (given in degrees Fahrenheit), what is the temperature?</p>	<p><a href="http://www.ixl.com/math/grade-3/which-metric-unit-is-appropriate">http://www.ixl.com/math/grade-3/which-metric-unit-is-appropriate</a></p>

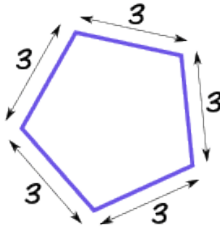

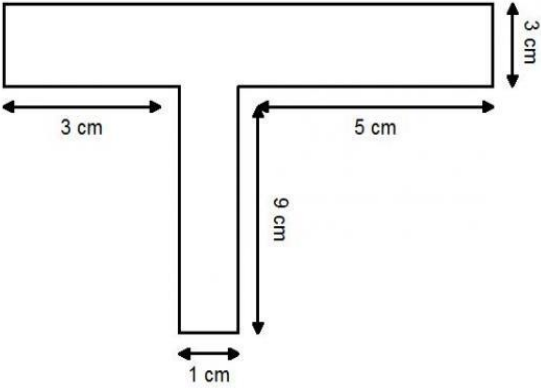




MA.3.M.3	Tell and write time to the nearest minute from <b>analog clocks</b> , using a.m. and p.m., and measure time intervals in minutes. Solve real-world problems involving addition and subtraction of time intervals in minutes.	<b>Analog clock</b> - includes an hour hand (short) and a minute hand (long) to represent the time	Noah starting reading his book at 7:15 p.m. He stopped reading at 8:05 p.m. How many minutes did Noah read?	<a href="http://www.ixl.com/math/grade-3/read-clocks-and-write-times">http://www.ixl.com/math/grade-3/read-clocks-and-write-times</a>
MA.3.M.4	Find the value of any collection of coins and bills. Write amounts less than a dollar using the ¢ symbol and write larger amounts using the \$ symbol in the form of dollars and cents (e.g., \$4.59). Solve real-world problems to determine whether there is enough money to make a purchase.		Derek has \$5.00. He wants to buy a sandwich for \$2.25, chips for \$0.75, a drink for \$1.25, and a cookie for \$1.25. Does Derek have enough money to buy all of this? Support your answer using words, numbers, and/or symbols.	<a href="http://www.ixl.com/math/grade-3/purchases-do-you-have-enough-money-up-to-10-dollars">http://www.ixl.com/math/grade-3/purchases-do-you-have-enough-money-up-to-10-dollars</a>

<p>MA.3.M.5</p>	<p>Find the <b>area</b> of a rectangle with whole-number side lengths by modeling with unit squares, and show that the area is the same as would be found by multiplying the side lengths. Identify and draw rectangles with the same <b>perimeter</b> and different areas or with the same area and different perimeters.</p>	<p><b>Area</b>- the number of square units needed to cover a surface <b>Perimeter</b>- the distance around a closed, flat shape.</p>	<p>a) In the diagram below, a small square represents one square unit. What is the area of the rectangle?</p> <div data-bbox="1255 459 1486 755" data-label="Diagram">  </div> <p>b) In the rectangle above, how many rows and columns are there? The product of the number of rows and columns should equal the area found in the previous question. See if this is true for other rectangles such as one with 7 rows and 2 columns. Does the product of the number of rows and columns equal the area? Show your work.</p> <p>c) Draw a rectangle with the same perimeter as the one above, but with a different area.</p> <p>d) Draw a rectangle with the same area as the one above, but with a different perimeter.</p>	<p><a href="http://www.ixl.com/math/grade-3/area-of-figures-made-of-unit-squares">http://www.ixl.com/math/grade-3/area-of-figures-made-of-unit-squares</a></p> <p><a href="https://www.illustrativemathematics.org/illustrations/1515">https://www.illustrativemathematics.org/illustrations/1515</a></p>
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MA.3.M.6	Multiply side lengths to find <b>areas</b> of rectangles with whole-number side lengths to solve real-world problems and other mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	<b>Area-</b> the number of square units needed to cover a surface	<p>a) What is the area of the rectangle below?</p> <div style="text-align: center;"> <p>9 ft.</p>  <p>2 ft.</p> </div> <p>b) Juanita’s group is working at a rectangular table that measures 8 feet by 6 feet. What is the area of the table?</p>	<p><a href="http://www.ixl.com/math/grade-3/area-of-rectangles">http://www.ixl.com/math/grade-3/area-of-rectangles</a></p>
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<p>MA.3.M.7</p>	<p>Find perimeters of <b>polygons</b> given the side lengths or by finding an unknown side length.</p>	<p><b>Polygon</b> - a closed shape (two-dimensional) bounded by three or more line segments</p>	<p>a) What is the perimeter, in units, of the pentagon?</p>  <p>b) What is the perimeter of the square?</p> <p>3 in. </p> <p>c) What is the perimeter of the shape below?</p> 	<p><a href="http://www.ixl.com/math/grade-3/perimeter-find-the-missing-side-length">http://www.ixl.com/math/grade-3/perimeter-find-the-missing-side-length</a></p>
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## Data Analysis

MA.3.DA.1	<p>Create <b>scaled picture graphs</b>, <b>scaled bar graphs</b>, and <b>frequency tables</b> to represent a data set—including data collected through observations, surveys, and experiments—with several categories. Solve one- and two-step “how many more” and “how many less” problems regarding the data and make predictions based on the data.</p>	<p><b>Scaled Picture Graph</b>- a graph that uses symbols to represent data  <b>Scaled Bar Graph</b>- a graph that uses rectangular bars to represent data  <b>Frequency Table</b>- a way of organizing data in columns and rows</p>	<p>a) Based on the graph below, how many more books did Nick read than William?</p> <table border="1" data-bbox="1146 506 1593 708"> <thead> <tr> <th colspan="2">Number of Books Read</th> </tr> </thead> <tbody> <tr> <td>Nick</td> <td><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>William</td> <td><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td colspan="2" style="text-align: center;"><input type="checkbox"/> = 3 books</td> </tr> </tbody> </table> <p>b) Activity: Students can conduct an observation, survey, or experiment. They can collect, organize, and display their data, and make observations based on their data display. (Examples: conduct a survey about favorite food, color, etc.; observe and tally the different colors of shirts classmates wear to school on a given day.)</p>	Number of Books Read		Nick	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	William	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> = 3 books		<p><a href="http://www.ixl.com/math/grade-3/create-pictographs">http://www.ixl.com/math/grade-3/create-pictographs</a></p> <p><a href="http://www.ixl.com/math/grade-3/create-bar-graphs">http://www.ixl.com/math/grade-3/create-bar-graphs</a></p>
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<input type="checkbox"/> = 3 books												
MA.3.DA.2	<p>Generate measurement data by measuring lengths with rulers to the nearest quarter of an inch. Display the data by making a <b>line plot</b>, where the horizontal scale is marked off in appropriate units, such as whole numbers, halves, or quarters.</p>	<p><b>Line Plot</b> - data represented with check marks, X's, or other symbols above a number line to show the frequency of each value</p>	<p>Ten students in Darrel’s class measured the length of their thumb to the nearest quarter-inch. The data is shown below. Create a line plot to display the data.</p> $1\frac{1}{4}, 1\frac{1}{2}, 2\frac{1}{2}, 2\frac{1}{4}, 2, 1\frac{3}{4}, 2, 1\frac{1}{4}, 1\frac{1}{2}, 1\frac{1}{4}$	<p><a href="https://learnzillion.com/lessons?utf8=%E2%9C%93&amp;filters%5Bsubject%5D=math&amp;query=4.MD.4&amp;commit=Search+lessons">https://learnzillion.com/lessons?utf8=%E2%9C%93&amp;filters%5Bsubject%5D=math&amp;query=4.MD.4&amp;commit=Search+lessons</a></p>								