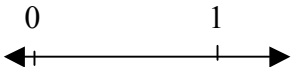




**Curriculum and Assessment Guide  
Grade 5  
Number and Computation**


Big Ideas	EOY Test Question	Resources/ Investigations	On-line Resources/other	Notes/Comments
<p><b>NC 5.1</b> Extend number sense for whole numbers (0 to 100,000,000), to include fractions, mixed numbers, and decimals (through thousandths). MA-E-1.1.1 MA-E-1.3.1 MA-E-1.1.4 MA-E-1.3.3 M-5-NC-1 M-5-NC-2 M-5-NC-8</p>	<p><a href="http://timss.bc.edu/timss1995i/TI_MSSPDF/BMIitems.pdf">TIMSS Released Items 1995:</a> <a href="http://timss.bc.edu/timss1995i/TI_MSSPDF/BMIitems.pdf">http://timss.bc.edu/timss1995i/TI_MSSPDF/BMIitems.pdf</a></p> <p>L9; page 35</p>	<p>Create a set of base-ten blocks for ten thousands and hundred thousands using cm graph paper. Predict the size of one million. Create the block. Compare the block to your estimates.</p>	<p><a href="http://www.arcytech.org/java/b10blocks/description.html">Description and Lesson plan for the Base 10 Blocks Program:</a> <a href="http://www.arcytech.org/java/b10blocks/description.html">http://www.arcytech.org/java/b10blocks/description.html</a></p> <p><a href="http://www.funbrain.com/cgi-bin/getskill.cgi?A1=choices&amp;A2=tens&amp;A3=5&amp;A4=4&amp;A7=4&amp;A8=math">FunBrain Game Finder:</a> <a href="http://www.funbrain.com/cgi-bin/getskill.cgi?A1=choices&amp;A2=tens&amp;A3=5&amp;A4=4&amp;A7=4&amp;A8=math">http://www.funbrain.com/cgi-bin/getskill.cgi?A1=choices&amp;A2=tens&amp;A3=5&amp;A4=4&amp;A7=4&amp;A8=math</a></p>	
<p><b>NC 5.2</b> Develop understanding of fractions as parts of unit wholes, as parts of collections, as locations on a number line, and as divisions of whole numbers. MA-E-1.1.1 MA-E-1.1.5 M-5-NC-6 M-5-NC-7</p>	 <p>Which number best represents the point on the number line?</p> <p>a) 1/9 b) 9/10 c) 3/8 d) 2/5</p> <p><i>Answer b)</i></p>	<p>Find examples of fractions used in newspapers, magazines, etc. Discuss the meaning of the fractions as they are used.</p>	<p><a href="http://www.mathforum.org/alejandre/factor1.html">Math Forum - Suzanne Alejandre: Factor Lesson:</a> <a href="http://www.mathforum.org/alejandre/factor1.html">http://www.mathforum.org/alejandre/factor1.html</a></p> <p><a href="http://mathforum.org/paths/fractions/m.fraclessons.html">Fraction lessons from Math Forum:</a> <a href="http://mathforum.org/paths/fractions/m.fraclessons.html">http://mathforum.org/paths/fractions/m.fraclessons.html</a></p> <p><a href="http://mathforum.org/mathtools/tool.html?co=m5&amp;new_id=425">Fraction Tool:</a> <a href="http://mathforum.org/mathtools/tool.html?co=m5&amp;new_id=425">http://mathforum.org/mathtools/tool.html?co=m5&amp;new_id=425</a></p>	
<p><b>NC 5.3</b> Investigate multiple representations of numbers (including equivalent fractions and mixed numbers) and generate them by composing and decomposing numbers.</p>	<p><a href="http://timss.bc.edu/timss1995i/TI_MSSPDF/BMIitems.pdf">TIMSS Released Items 1995 :</a> <a href="http://timss.bc.edu/timss1995i/TI_MSSPDF/BMIitems.pdf">http://timss.bc.edu/timss1995i/TI_MSSPDF/BMIitems.pdf</a></p> <p><b>K1 Page 93</b></p>	<p><a href="http://www.nku.edu/~mathed/fifthgradeproblp.pdf">http://www.nku.edu/~mathed/fifthgradeproblp.pdf</a></p> <p>NCTM Developing Number Sense 5-8. Activities 2, 5, 7, 8, 26, 27, 28.</p>	<p><a href="http://standards.nctm.org/document/eexamples/chap5/5.1/index.htm">Fraction Track Game:</a> <a href="http://standards.nctm.org/document/eexamples/chap5/5.1/index.htm">http://standards.nctm.org/document/eexamples/chap5/5.1/index.htm</a></p>	

<p><b>NC 5.4</b> Order and compare whole numbers (0 to 100,000,000), decimals and fractions. MA-E-1.1.5 MA-E-1.3.1 MA-E-1.2.9 M-5-NC-1 M-5-NC-2</p>	<p><a href="http://timss.bc.edu/timss1995i/TI/MSSPDF/BMItems.pdf">TIMSS Released Achievement Item Sets:</a> <a href="http://timss.bc.edu/timss1995i/TI/MSSPDF/BMItems.pdf">http://timss.bc.edu/timss1995i/TI/MSSPDF/BMItems.pdf</a></p> <p>Page 7 item I6 Page 23; Item k-1</p>	<p><a href="http://sunburst-store.com/cgi-bin/sunburst.storefront/3fff0293042981c62717d00b89320677/Catalog">Fraction Attraction :</a> <a href="http://sunburst-store.com/cgi-bin/sunburst.storefront/3fff0293042981c62717d00b89320677/Catalog">http://sunburst-store.com/cgi-bin/sunburst.storefront/3fff0293042981c62717d00b89320677/Catalog</a></p> <p>NCTM Developing Number Sense 5-8. Activities 16, 17, 18. NCTM Understanding Rational Numbers and Proportions. Pg 7 Activity 2 Create a set of numbers and commas, one each on large pieces of tag board or cardboard. Select one student to be each number/comma. As you read a number, students arrange themselves to create it. ****Great for rounding too if the cardboard has zeros on the back.</p>	<p><a href="http://score.kings.k12.ca.us/lessons/greater.html">What on Earth is Greater Than?:</a> <a href="http://score.kings.k12.ca.us/lessons/greater.html">http://score.kings.k12.ca.us/lessons/greater.html</a></p> <p><a href="http://www.figurethis.org/challenges/c02/challenge.htm">Figure This Math Challenges for Families - Challenge!:</a> <a href="http://www.figurethis.org/challenges/c02/challenge.htm">http://www.figurethis.org/challenges/c02/challenge.htm</a></p>	
<p><b>NC 5.5</b> Explore appropriate estimation procedures (models, equivalent forms, benchmarks, etc.) to judge the size of both large and small quantities. MA-E-1.2.5 M-5-NC-5</p>	 <p>If A is located at 0 and B is located at <math>\frac{2}{5}</math>, where would 1 be located?</p> <p>What is the best <i>estimate</i> for the solution of <math>4.7 \underline{\quad} 42</math>?</p> <p>a) 200 b) 160 c) 414 d) 250</p> <p><i>Ans: a</i></p>  <p>If pencil b is 6 inches long, how long is the new pencil?</p> <p><i>Approximately 8 inches.</i></p>	<p><a href="http://www.elm.maine.edu/assessments/teacher/million/">Electronic Learning Marketplace: Assessment Center: Teacher-Developed Assessments: What is a Million?:</a> <a href="http://www.elm.maine.edu/assessments/teacher/million/">http://www.elm.maine.edu/assessments/teacher/million/</a></p> <p>NCTM <i>Developing Number Sense 5-8</i>. Activities 16, 17, 18, 19, 21, 22</p>	<p><a href="http://www.mathcats.com/microworlds/whatacrowd.html">What a Crowd!:</a> <a href="http://www.mathcats.com/microworlds/whatacrowd.html">http://www.mathcats.com/microworlds/whatacrowd.html</a></p> <p><a href="http://www.funbrain.com/cgi-bin/tens.cgi?A1=s&amp;A2=5">FunBrain - Place Value Puzzler:</a> <a href="http://www.funbrain.com/cgi-bin/tens.cgi?A1=s&amp;A2=5">http://www.funbrain.com/cgi-bin/tens.cgi?A1=s&amp;A2=5</a></p>	

Sources: Kentucky Department of Education. 1999. Released Items from the Commonwealth Accountability Testing System

<p><b>NC 5.9</b> Develop computational fluency using a variety of methods (e.g., mental, paper and pencil, calculator) and strategies.</p>	<p>In a discus-throwing competition, the winning throw was 61.60 m. The second-place throw was 59.72 m. How much longer was the winning throw than the second-place throw?</p> <p>A. 1.18 m B. 1.88 m C. 1.98 m D. 2.18 m</p>		<p>Funbrain.com's MathCar Racing Game</p> <p>Play Math Games</p>	
<p><b>NC 5.10</b> Explore how the use of properties (commutative, associative, and identity properties of addition and multiplication, the distributive property of multiplication over addition, and the zero property of multiplication) and relationships between operations, such as division as the inverse of multiplication are used in computation. MA-E-1.3.2</p>		<p>NCTM Developing Number Sense 5-8. Activity 13</p>	<p><a href="http://www.learner.org/teacherslab/math/patterns/mystery/index.phtml">Patterns in Mathematics -- Logic Patterns:</a> <a href="http://www.learner.org/teacherslab/math/patterns/mystery/index.phtml">http://www.learner.org/teacherslab/math/patterns/mystery/index.phtml</a></p> <p><a href="http://www.edmath.org/potent/Numbers/trees.html">http://www.edmath.org/potent/Numbers/trees.html</a></p> <p><a href="http://sunburst-store.com/cgi-bin/sunburst.storefront/3fff05cf04469f802717d00b89320675/Catalog">How the West was 1x3+4 Ten Tricky Tiles</a> <a href="http://sunburst-store.com/cgi-bin/sunburst.storefront/3fff05cf04469f802717d00b89320675/Catalog">http://sunburst-store.com/cgi-bin/sunburst.storefront/3fff05cf04469f802717d00b89320675/Catalog</a></p>	

**Curriculum and Assessment Guide**  
**Grade 5**  
**Geometry and Measurement**

Big Ideas	EOY Test Questions	Resources/ Investigations	On-Line Resources / Other	Notes/Comments
<p><b>GM 5.1</b>  Identify, describe, and provide examples of basic geometric elements and terms including points, rays, lines (perpendicular, parallel, and intersecting), segments, sides, edges, faces, vertices, radius, diameter, and angles (acute, obtuse, and right).  MA-E-2.1.1  M-5-GM-2  M-5-GM-3</p>		<p>Connected Math: Shapes and Designs – Grade 6</p>	<p><a href="http://standards.nctm.org/document/eexamples/chap5/5.5/index.htm">E-Example 5.5.1: Collecting, Representing, and Interpreting Data</a>  <a href="http://standards.nctm.org/document/eexamples/chap5/5.5/index.htm">http://standards.nctm.org/document/eexamples/chap5/5.5/index.htm</a></p> <p>Exploring Geometric Solids :  <a href="http://illuminations.nctm.org/imath/3-5/GeometricSolids/GeoSolids5.html">http://illuminations.nctm.org/imath/3-5/GeometricSolids/GeoSolids5.html</a></p>	
<p><b>GM 5.2</b>  Compare, contrast, sort and classify basic two and three-dimensional shapes according to their properties AND develop definitions of classes of shapes such as triangles, quadrilaterals, and pyramids.</p>			<p><a href="http://illuminations.nctm.org/imath/3-5/GeometricSolids/student/index.html">Exploring Geometric Solids: http://illuminations.nctm.org/imath/3-5/GeometricSolids/student/index.html</a></p> <p><a href="http://standards.nctm.org/document/eexamples/chap5/5.3/index.htm">E-Example 5.3: Exploring Properties of Rectangles and Parallelograms: http://standards.nctm.org/document/eexamples/chap5/5.3/index.htm</a></p> <p><a href="http://www.learner.org/teachersab/math/patterns/buttons/button_answered.phtml">Patterns in Mathematics -- Logic Patterns</a>  <a href="http://www.learner.org/teachersab/math/patterns/buttons/button_answered.phtml">http://www.learner.org/teachersab/math/patterns/buttons/button_answered.phtml</a></p>	
<p><b>GM 5.3</b>  Identify lines of symmetry AND use lines of symmetry to construct geometric designs.  MA-E-2.1.4  MA-E-2.2.2  MA-E-2.3.4</p>	<p>Construct a design with <b>one and only one</b> line of symmetry.</p> 	<p>Teaching with Manipulatives:  Alpha Shapes</p>		

<p><b>GM 5.4</b>  Identify and draw two-dimensional shapes in different orientations using isometries (translations, rotations and reflections).  MA-E-2.2.3  MA-E-2.3.1  M-5-GM-1</p>	<p><a href="http://timss.bc.edu/timss1995i/TIMSSPDF/BMItems.pdf">http://timss.bc.edu/timss1995i/TIMSSPDF/BMItems.pdf</a></p> <p>Page 26; Item k-3</p>	<p><a href="http://www.scienceu.com/library/articles/isometries/index.html">Introduction to Isometries (Science U) :</a>  <a href="http://www.scienceu.com/library/articles/isometries/index.html">http://www.scienceu.com/library/articles/isometries/index.html</a></p>	<p><a href="http://mathcentral.uregina.ca/RR/database/RR.09.96/archamb1.html">Tantalizing Tesselations!:</a>  <a href="http://mathcentral.uregina.ca/RR/database/RR.09.96/archamb1.html">http://mathcentral.uregina.ca/RR/database/RR.09.96/archamb1.html</a></p> <p><a href="http://www.learner.org/teachersab/math/geometry/space/train/index.html">Geometry -- I Took a Trip on a Train:</a>  <a href="http://www.learner.org/teachersab/math/geometry/space/train/index.html">http://www.learner.org/teachersab/math/geometry/space/train/index.html</a></p>	

<p><b>GM 5.5</b>  Select appropriate tools to measure attributes of objects AND use those measurements to describe and compare attributes of objects.  MA-E-2.2.7  MA-E-2.2.8  MA-E-2.2.9  M-5-GM-5</p>				
<p><b>GM 5.6</b>  Estimate (using benchmarks) and determine measures of weight, length, perimeter, area (of rectangles, related triangles, and parallelograms), and angles using both standard and non-standard units.  MA-E-2.2.5  MA-E-2.2.7  MA-E-2.3.6  M-5-GM-2  M-5-GM-5</p>	<p><a href="http://timss.bc.edu/timss1995i/TI/MSSPDF/BMItems.pdf">http://timss.bc.edu/timss1995i/TI/MSSPDF/BMItems.pdf</a></p> <p>Page 21; Item j-17  Page 45; Item M-1</p> <p>Calculate the area and perimeter of a rectangle with the given dimensions. (L = 8ft., W = 3ft.)</p> <p>Using a protractor, draw a 35 degree angle.</p>	<p>Go on a scavenger hunt to find items in the environment “about a meter” “about a centimeter” “about a liter” “about a gram” etc. Create posters or bulletin boards to display their findings.</p> <p>Create ALL ABOUT ME journals in which students measure themselves and record their findings.  “My finger is about 1 cm wide and about 4 _ cm long.”</p>		
<p><b>GM 5.7</b>  Explore and analyze relationships among units within the same measurement system (U.S. Customary and metric) and perform simple unit conversions within the <u>same</u> measurement system.  MA-E-2.1.5  MA-E-2.3.3  M-5-GM-6</p>	<p>There are 5,280 feet in one mile. How many inches are there in one mile? How many feet are there in 7 miles?</p> <p>If a rectangle has a length of <math>2\frac{1}{3}</math> feet and a width of <math>4\frac{1}{2}</math> feet, what is the area in <i>square inches</i>?</p>	<p>Play “What If?” What if you only had a meter stick? What would the measurement be then? What if you only had this cm cube? How would you measure the desk now?</p>	<p><a href="http://www.sciencemadesimple.com/conversions.html">Conversions - online metric converter - US customary &amp; metric conversions for unit measurements, and fractions to decimals:</a>  <a href="http://www.sciencemadesimple.com/conversions.html">http://www.sciencemadesimple.com/conversions.html</a></p>	

<p><b>GM 5.8</b>          Make and use coordinate systems to specify locations and to describe paths AND Find the distance between points along horizontal and vertical lines of a coordinate system.          MA-E-4.2.5</p>	<p><a href="http://timss.bc.edu/timss1995i/TIMSSPDF/BMItems.pdf">TIMSS Released Items 1995 : http://timss.bc.edu/timss1995i/TIMSSPDF/BMItems.pdf</a></p> <p><b>J16, page 20</b></p>	<p>Place ordered pairs on the corner of the students' desks. Use them throughout the year to identify each seat in the classroom.</p> <p>Create a first quadrant with letters of the alphabet on intersections. Have students spell a list of math words using the coordinates of each letter instead of spelling with the letters.</p>	<p><a href="http://score.kings.k12.ca.us/lessons/hearts/discrete.math.html">SCORE Math: How Many Different Paths: http://score.kings.k12.ca.us/lessons/hearts/discrete.math.html</a></p>	
<p><b>GM 5.9</b>          Identify and build a three-dimensional object from two-dimensional representations of that object and vice versa.</p> <p>Identify vertices, edges, faces, and simple surface area          MA-E-2.1.1          MA-E-2.2.4          M-5-GM-1</p>	<p>Draw a rectangular prism from a view that would be looking at it from the left and higher than the figure. Use dotted lines to indicate the edges that would be hidden if a solid figure.</p>	<p>Use <a href="http://www.polydron.co.uk/cgibin/index.cgi?currency=dollars">Polydrons</a> <a href="http://www.polydron.co.uk/cgibin/index.cgi?currency=dollars">http://www.polydron.co.uk/cgibin/index.cgi?currency=dollars</a> or <a href="#">Frameworks</a> to create 3 dimensional shapes out of triangles, squares, rectangles, pentagons, etc. Compare and contrast them. Challenge students to name the shapes in such a way that other students can select it from a group of shapes. Lead students toward the "real" names of the shapes.</p> <p>Use <a href="#">Polydrons or Frameworks</a> to explore the faces edges and vertices of 3 dimensional shapes. Create a chart and look for patterns</p>	<p><a href="http://illuminations.nctm.org/imateh/3-5/GeometricSolids/GeoSolids4.html">Exploring Geometric Solids : http://illuminations.nctm.org/imateh/3-5/GeometricSolids/GeoSolids4.html</a></p> <p><a href="http://www.learner.org/teachersab/math/geometry/space/plotplan/index.html">Geometry -- Plot Plans and Silhouettes : http://www.learner.org/teachersab/math/geometry/space/plotplan/index.html</a></p> <p><a href="http://www.learner.org/teachersab/math/geometry/space/shadows/index.html">Geometry -- Shadows : http://www.learner.org/teachersab/math/geometry/space/shadows/index.html</a></p>	
<p><b>GM 5.10</b>          Use charts and tables to determine time schedules and work with time zones.          M-5-GM-4</p>	<p>If it is 3:15 a.m. in Los Angeles, what time is it in Cincinnati?</p> <p>a) 3:15 p.m. b) 12:15 a.m.          c) 6:15 a.m. d) 5:15 a.m.</p>			

**Curriculum and Assessment Guide  
Grade 5  
Probability and Statistics**

<b>Big Ideas</b>	<b>EOY Test Question</b>	<b>Resources/ Investigations</b>	<b>On-line Resources /other</b>	<b>Notes/Comments</b>
<p><b>PS 5.1</b> Pose questions, design investigations, collect (using observations, surveys, and experiments), organize, describe, and Interpret data to answer questions. MA-E-3.2.1 MA-E-3.2.2 MA-E-3.3.3 MA-E-3.2.3 M-5-PS-2</p>		<p>Common names have changed over time. Names such as Joshua, Ashley, and Katie are common now. What were the common names 100 years ago?</p>	<p>M &amp; M Graphing and Probability <a href="http://ericir.syr.edu/cgi-bin/printlessons.cgi/Virtual/Lessons/Mathematics/Probability/PRB0005.html">http://ericir.syr.edu/cgi-bin/printlessons.cgi/Virtual/Lessons/Mathematics/Probability/PRB0005.html</a>  <a href="http://mathforum.org/">http://mathforum.org/</a></p>	

<p><b>PS 5.2</b> Construct and interpret <b>appropriate</b> displays of data from among line graphs, pictographs, line plots, simple Venn diagrams and tables. MA-E-3.2.3 MA-E-3.3.3 M-5-PS-2</p>	<p><a href="http://timss.bc.edu/timss1995i/TI/MSSPDF/BMIitems.pdf">TIMSS Released Items 1995 : http://timss.bc.edu/timss1995i/TI/MSSPDF/BMIitems.pdf</a> <b>J13 Page 16</b></p> <p>Some students started a storytelling club at the beginning of the year, and the club has been growing ever since. 7 students came to tell stories at the first meeting, and 4 came to listen. 10 students came to tell stories at the second meeting, and 6 came to listen. 13 students came to tell stories at the third meeting, and 8 came to listen, 16 students came to tell stories at the fourth meeting, and 10 came to listen. Draw a graph showing the Total Number of students who attended each of the four meetings. Then study the pattern shown in your graph. What is the Total Number of students that you think will come to the fifth meeting? Explain your answer. <i>Ans: Reference</i></p>		<p><a href="http://nces.ed.gov/nceskids/graphing/">Create a Graph: http://nces.ed.gov/nceskids/graphing/</a></p>	
<p><b>PS 5.3</b> Interpret circle graphs. MA-E-3.2.4</p>				
<p><b>PS 5.4</b> Recognize the differences in representing categorical and numerical data. MA-E-3.2.3 MA-E-3.3.3</p>				

<p><b>PS 5.5</b> Propose and justify conclusions and predictions that are based on data and design studies to further investigate the conclusions and predictions. MA-E-3.1.3 MA-E-3.2.5 MA-E-3.3.1 MA-E-3.2.5 MA-E-3.3.2 M-5-PS-5</p>				
<p><b>PS 5.6</b> Explore, find, and interpret measures of central tendency (mean, median, and mode) and range. MA-E-3.1.1 MA-E-3.2.6 M-5-PS-1 M-5-PS-6</p>	<p>These are Tom's grades for the 2<sup>nd</sup> grading period: 82, 95, 76, 90, 89. This is the grading scale at Tom's school: 90-100 A; 80-89 B; 70-79 C; 60-69 D; below 60 F What grade will Tom receive on his report card this grading period?</p>		<p>Mr. Pearson's Statistics Lesson <a href="http://mathforum.org/midpow/solutions/solution.ehtml?puzzle=108">http://mathforum.org/midpow/solutions/solution.ehtml?puzzle=108</a></p>	
<p><b>PS 5.7</b> Use counting techniques, tree diagrams, and tables to explore probability experiments and to generate all possible outcomes in simple probability activities. MA-E-3.2.7 M-5-PS-3</p>	<p>Use a tree diagram to list your predictions for the probability that you would get exactly two heads if you flip three coins.  <i>Ans: 3/8</i></p>		<p><a href="http://mathforum.org/workshops/usi/pascal/pizza_pascal.html">Math Forum: Exploring Pascal's Triangle</a> : <a href="http://mathforum.org/workshops/usi/pascal/pizza_pascal.html">http://mathforum.org/workshops/usi/pascal/pizza_pascal.html</a></p> <p><a href="http://nces.ed.gov/nceskids/probability/">Probability: What are Your Chances?-NCES Students' Classroom:</a> <a href="http://nces.ed.gov/nceskids/probability/">http://nces.ed.gov/nceskids/probability/</a></p> <p>Flipping Over Pennies <a href="http://mathforum.org/midpow/solutions/solution.ehtml?puzzle=61">http://mathforum.org/midpow/solutions/solution.ehtml?puzzle=61</a></p>	

<p><b>PS 5.8</b>  Determine and describe the probability of events as impossible, unlikely, likely, equally likely, and certain AND represent the measure of the likelihood of an event by a number from 0 to 1.  MA-E-3.1.2  MA-E-3.2.7  M-5-PS-5</p>	<p><a href="http://timss.bc.edu/timss1995/TI/MSSPDF/BMItems.pdf">TIMSS Released items from 1995:</a>  <a href="http://timss.bc.edu/timss1995/TI/MSSPDF/BMItems.pdf">http://timss.bc.edu/timss1995/TI/MSSPDF/BMItems.pdf</a></p> <p><b>I9 Page 11</b></p>			
<p><b>PS 5.9</b>  Determine fairness of games using simple probability activities.  MA-E-3.2.8  M-5-PS-3</p>				
<p><b>PS 5.10</b>  Explore how sample size affects the reliability of the outcome.  MA-E-3.3.2  M-5-PS-4</p>	<p>Bill is at the county fair. There are 3 tubs of water containing ducks. Tub #1 has 10 ducks numbered 1 to 10. Tub #2 has 20 ducks numbered 1 to 20. Tub #3 has 50 ducks numbered 1 to 50. If Bill draws a duck marked with the number 15 from one of the three tubs of water, he will win a prize. Which tub should Bill choose in order to have the best chance of winning a prize?  <i>Ans: B</i>  <i>Reference: Released KIRIS item</i></p>	<p>Jones, Graham &amp; Thornton, Carol. <u>Data, Chance &amp; Probability</u>. Page 59</p>		

**Curriculum and Assessment Guide**  
**Grade 5**  
**Algebraic Ideas**

<b>Big Ideas</b>	<b>End-of-Year Test Questions</b>	<b>Resources / Investigations</b>	<b>On-line Resources / Other</b>	<b>Notes / Comments</b>
<p><b>A 5.1</b>            Analyze, create, extend and find rules for patterns (both geometric and numeric) and functions through pictures, tables, and graphs.            MA-E-4.1.1            MA-E-4.2.1            MA-E-4.2.2            MA-E-4.3.1            MA-E-4.3.2            M-5-A-1</p>	<p><a href="http://timss.bc.edu/timss1995i/T1/MSSPDF/BMIItems.pdf">http://timss.bc.edu/timss1995i/T1/MSSPDF/BMIItems.pdf</a></p> <p>Page 39 Item L-39</p> <p>Kayla made 2 out of 8 foul shots in her first basketball game, 5 out of 10 in her second game, and 8 out of 12 in her third game. If she continues at that pace, which choice best predicts how many she should make in her fourth game?</p> <p>a.) 3 out of 12            b.) 4 out of 8            c.) 11 out of 14            d.) 7 out of 14</p> <p>Explain.</p>	<p>Teacher's Helper (Problem Solver)            Mental Math workbook Algebraic Reasoning, Grades 5-8 (teacher's paradise .com)            Elementary Algebra, Gr. 4-5 (teacher's paradise .com)            Fun with Math, Grade 5 (teacher's paradise .com)            Base 10 cubes</p>	<p><a href="http://illuminations.nctm.org/imateh/3-5/GeometricSolids/GeoSolids3.html">Exploring Geometric Solids: http://illuminations.nctm.org/imateh/3-5/GeometricSolids/GeoSolids3.html</a></p> <p><a href="http://www.figurethis.org/challenges/c07/challenge.htm">Figure This Math Challenges for Families - Challenge! : http://www.figurethis.org/challenges/c07/challenge.htm</a></p> <p><a href="http://www.funbrain.com/cgi-bin/cracker.cgi?A1=s&amp;A2=1&amp;INSTRUCTS=1">Number Cracker : http://www.funbrain.com/cgi-bin/cracker.cgi?A1=s&amp;A2=1&amp;INSTRUCTS=1</a></p> <p><a href="http://www.ed.gov/pubs/parents/hyc.html">http://www.ed.gov/pubs/parents/hyc.html</a></p>	
<p><b>A 5.3</b>            Express mathematical relationships using equations.            MA-E-4.1.2            MA-E-4.2.3            MA-E-4.3.2            M-5-A-2</p>	<p>If Bob has three more cars than Jason, tell using a number sentence how we could represent the number of cars that Bob owns.  <math>(B = J + 3)</math></p>		<p><a href="ftp://www.uky.edu/pub/arsi/openresponsequestions/mathorq.pdf">ftp://www.uky.edu/pub/arsi/openresponsequestions/mathorq.pdf</a></p>	
<p><b>A 5.4</b>            Compare and contrast equations, expressions and inequalities.            MA-E-4.3.1            M-5-A-2</p>				
<p><b>A 5.5</b>            Represent the idea of a variable as an unknown quantity using a letter or a</p>				

symbol. MA-E-4.1.2 M-5-A-2				
<b>A 5.6</b> Analyze and solve number sentences with a missing value or variable. MA-E-4.1.2 MA-E-4.2.2 M-5-A-2			<a href="http://www.funbrain.com/cgi-bin/fb.cgi?A1=start2&amp;A2=Medium&amp;ALG=Yes&amp;INSTRUCTS=1">FunBrain Power Football: http://www.funbrain.com/cgi-bin/fb.cgi?A1=start2&amp;A2=Medium&amp;ALG=Yes&amp;INSTRUCTS=1</a>	
<b>A 5.7</b> Graph ordered pairs on a positive coordinate grid. MA-E-4.2.5			<a href="http://www.col-ed.org/smcnws/elementary.html">FunBrain Game Finder http://www.col-ed.org/smcnws/elementary.html</a>	
<b>A 5.8</b> Locate and graph whole numbers, fractions, and decimals on a number line. MA-E-4.2.4				
<b>A 5.9</b> Investigate how change in one variable relates to change in a second variable. M-5-A-3			<a href="ftp://www.uky.edu/pub/arsi/openresponsequestions/mathorq.pdf">E-Example 5.2: Understanding Distance, Speed, and Time ftp://www.uky.edu/pub/arsi/openresponsequestions/mathorq.pdf</a>	
<b>A.5.10</b> Identify and describe situations with constant or varying rates of change and compare them. MA-E-4.3.1 M-5-A-3	3. a) On a hiking trip, Bob and his two friends hiked 15 miles the first day, 10 miles the second, and 7 miles the third. If they walked a total of 60 miles over the 5-day trip and did not walk more than 18 miles on any one day, how many miles could they have walked each of the last two days? b) How many miles did they average per day? c) If they could hike at a top speed of 6 miles per hour on flat terrain, but had to slow down when climbing hills, could they have made the trip in a single 10-hour day of sunshine? Support your answer.		<a href="http://www.mste.uiuc.edu/users/aki/open_ended/">http://www.mste.uiuc.edu/users/aki/open_ended/</a>	