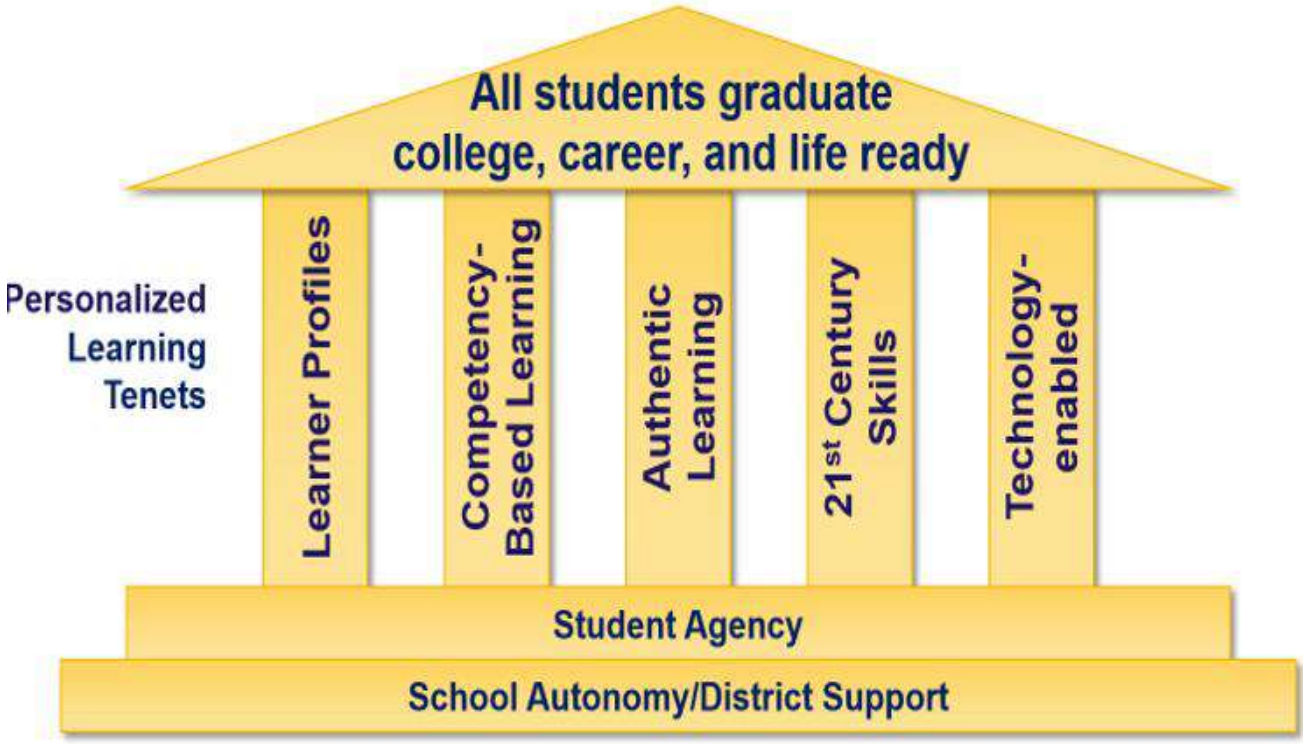
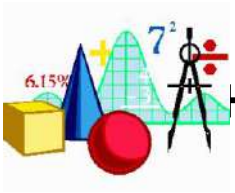
Elementary School Mathematics Graduation Competencies



Revised November 18, 2016



Henry County Mathematics Scoring Criteria

Graduation Competency 1: The student uses mathematical practices to help make sense of the real world. The student can identify variables, formulate a model describing a relationship between the variables, interpret results, and validate and report conclusions and the reasoning behind them. Student links classroom mathematics and statistics to everyday life, work, and decision-making. The student will choose and utilize appropriate mathematics and statistics to analyze empirical situations, to understand them better, and to improve decisions. When making mathematical models, technology is valuable for varying assumptions, exploring consequences, and comparing predictions with data. These practices are best interpreted not as a collection of isolated topics but rather in relation to other competencies.

Competency #1. Performance Indicators	**Addressed in this competency**	**Grade level**	**Courses**
1. Students can make sense of problems and persevere in solving them.	● explaining to themselves the meaning of a problem and looking for entry points to its solution ● analyze givens, constraints, relationships, and goals ● make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt ● consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution ● monitor and evaluate their progress and change course if necessary (older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need). ● Explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. (younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem). ● check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” ● understand the approaches of others to solving complex problems and identify correspondences between different approaches.	K-12	All
2. Students can reason abstractly and quantitatively.	● make sense of quantities and their relationships in problem situations ● students have the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. ● create a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.	K-12	All
3. Students can construct viable arguments and critique the reasoning of others.	● understand and use stated assumptions, definitions, and previously established results in constructing arguments ● make conjectures and build a logical progression of statements to explore the truth of their conjectures ● analyze situations by breaking them into cases, and can recognize and use counterexamples ● justify their conclusions, communicate them to others, and respond to the arguments of others ● reason inductively about data, making plausible arguments that take into account the context from which the data arose	K-12	All

	• compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is • construct arguments using concrete referents such as objects, drawings, diagrams, and actions • listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments		
4. Students can model with mathematics.	• solve problems arising in everyday life, society, and the workplace • comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later • identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas and analyze those relationships mathematically to draw conclusions • routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose	K-12	All
5. Students can use appropriate tools strategically.	• consider the available tools when solving a mathematical problem (pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software) • sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations • detect possible errors by strategically using estimation and other mathematical knowledge • when making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. • identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems • use technological tools to explore and deepen their understanding of concepts	K-12	All
6. Students can attend to precision.	• communicate precisely to others • use clear definitions in discussion with others and in their own reasoning • state the meaning of the symbols they choose, including using the equal sign consistently and appropriately • careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem • calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context	K-12	All
7 Students can look for and make use of structure.	• look closely to discern a pattern or structure • recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems and can step back for an overview and shift perspective • see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects	K-12	All
8. Students can look for and express regularity in repeated reasoning.	• notice if calculations are repeated, and look both for general methods and for shortcuts • maintain oversight of the process, while attending to the details • evaluate the reasonableness of their intermediate results	K-12	All

Henry County Mathematics Scoring Criteria

Graduation Competency *#2:* The student reasons, describes and analyzes quantitatively using units and number systems to make sense of and solve problems. Number sense provides students with a firm foundation in mathematics. Students build a deep understanding of quantity, ways of representing numbers, relationships among numbers, and number systems. Students learn that numbers are governed by properties and understand that these properties lead to fluency with operations.

Legend:	Grades K-2
	Grades 3-5

Competency 2. Performance Indicators Elementary (K-5)

Number and Operations in Base Ten

a. Explain and make generalizations about the patterns in the place value system and use this understanding and the properties of operations to perform single and multi-digit arithmetic.

a. Explain and make generalizations about the patterns in the place value system and use this understanding and the properties of operations to perform single and multi-digit arithmetic, including whole numbers and decimals.

Measurement and Data

b. Demonstrate an understanding of measurement concepts (time, length, and/or money) by devising an approach to measure using appropriate tools, constructing reasonable estimates and solving problems involving addition and subtraction.

b. Demonstrate an understanding of measurement concepts (time, length, and/or money) by constructing reasonable estimates and solving problems involving all four operations (addition, subtraction, multiplication, and division).

Number and Operations—Fractions

c. Perform all arithmetic operations with fractions and their equivalent decimals by applying and extending previous understandings of operations with whole numbers.

Performance Indicator Scoring Criteria for Competency 2.

Performance Indicators Grades K-2	Emerging	Progressing	Competent	Exemplary
a.Explain and make generalizations about the patterns in the place value system and use this understanding and the properties of operations to perform single and multi-digit arithmetic. MGSE.K.CC.1, 2, 3, 4, 5, 6, 7 MGSE.K.OA.1, 2, 3, 4, 5 MGSE.K.NBT.1 MGSE.2.OA.2 MGSE.2.NBT.1, 3, 4, 5, 6, 7, 8, 9	The student identifies place value and performs single and/or multi-digit arithmetic.	The student recognizes that there are patterns in the place value system and acknowledges that there are properties of operations when performing single and/or multi-digit arithmetic.	The student explains and makes generalizations about the patterns in the place value system and uses this understanding and the properties of operations to perform single and/or multi-digit arithmetic.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.
b. Demonstrate an understanding of measurement concepts (time, length, and/or money) by devising an approach to measure using appropriate tools, constructing reasonable estimates and solving problems involving addition and subtraction. MGSE.K.MD.2 MGSE.1.MD.2, 3 MGSE.2.MD.1, 2, 3, 4, 5, 6, 7, 8	The student understands time length and/or money can be measured, but uses an unreliable approach and/or inappropriate tool.	The student demonstrates an understanding of measurement concepts (time, length, and/or money) by devising an approach to measure using appropriate tools and constructing estimates.	The student demonstrates an understanding of measurement concepts (time, length, and/or money) by devising an approach to measure using appropriate tools, constructing reasonable estimates and solving problems involving addition and subtraction.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.

Henry County Mathematics Scoring Criteria

Sample Tasks:
https://www.illustrativemathematics.org/content-standards/K/NBT/A/1/tasks/1404
https://www.illustrativemathematics.org/content-standards/1/NBT/B/2/tasks/1150
https://www.illustrativemathematics.org/content-standards/2/NBT/B/5/tasks/1071
http://www.insidemathematics.org/assets/common-core-math-tasks/pocket%20money.pdf
http://www.insidemathematics.org/assets/problems-of-the-month/measuring%20mammals.pdf
http://www.insidemathematics.org/assets/problems-of-the-month/rod%20trains.pdf
https://www.illustrativemathematics.org/content-standards/1/MD/A/2/tasks/1086

Performance Indicators Grades 3-5	Emerging	Progressing	Competent	Exemplary
a. Explain and make generalizations about the patterns in the place value system and use this understanding and the properties of operations to perform single and multi-digit arithmetic, including whole numbers and decimals. MGSE.3.OA.1, 2, 3, 4, 5, 6, 7 MGSE.3.NBT.1, 2, 3 MGSE.4.NBT.1, 2, 4 MGSE.5.NBT.1, 2, 3, 4, 5, 6, 7	The student identifies place value and performs single and multi-digit arithmetic, including whole numbers and/or decimals.	The student recognizes that there are patterns in the place value system and acknowledges that there are properties of operations, but is unable to apply this understanding when performing single and multi-digit arithmetic, including whole numbers and/or decimals.	The student explains and makes generalizations about the patterns in the place value system and uses this understanding and the properties of operations to perform single and multi-digit arithmetic, including whole numbers and/or decimals.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.
b. Demonstrates an understanding of measurement concepts (time, length, and/or money) by constructing reasonable estimates and solving problems involving all four operations (addition, subtraction, multiplication, and division). MGSE.3.MD.1 MGSE.4.MD.1, 2, 3	The student can relate measurement of length, time and money to addition and subtraction.	The student can measure lengths indirectly and directly with units and relate measurement to time and money.	The student demonstrates an understanding of problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.
c. Perform all arithmetic operations with fractions and their equivalent decimals by applying and extending previous understandings of operations with whole numbers. MGSE.3.NF.1, 2, 3 MGSE.3.G.2 MGSE.4.NF. 1, 2,3, 4, 5, 6, 7 MGSE.5.NF.1, 2, 3, 4, 5, 6, 7	The student identifies fractions as numbers and is able to build fractions from unit fractions..	The student can add and subtract fractions using equivalent fractions and can convert fractions to decimal notation.	The students can perform all arithmetic operations with fractions and their equivalent decimals by applying and extending previous understandings of operations with whole numbers.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.

Sample Tasks:
http://www.insidemathematics.org/assets/common-core-math-tasks/leapfrog%20fractions.pdf
http://www.insidemathematics.org/assets/common-core-math-tasks/adding%20numbers.pdf
https://www.illustrativemathematics.org/content-standards/4/MD/A/1/tasks/1508
https://www.illustrativemathematics.org/content-standards/5/NBT/A/2/tasks/1620
https://www.illustrativemathematics.org/content-standards/4/NBT/B/5/tasks/1808

Henry County Mathematics Scoring Criteria

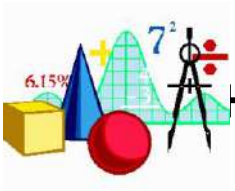
Graduation Competency #3: The student creates, interprets, uses, and analyzes patterns of algebraic structures to make sense of problems. Pattern sense gives students a lens with which to understand trends and commonalities. Students recognize and represent mathematical relationships and analyze change. Students learn that the structures of algebra allow complex ideas to be expressed succinctly.

Legend:	Grades K-2
	Grades 3-5

Competency #3. Performance Indicators Elementary School (K-5)
Operations and Algebraic Thinking a. Model, evaluate, and explain problem solving situations involving addition and subtraction, apply the properties of operations, and explain the relationship between addition and subtraction. b. Generate, analyze, and explain numerical patterns and relationships. ***a. Model, evaluate, and explain problem solving situations involving all four operations, apply the properties of operations, and can explain the relationship between addition/subtraction and multiplication/division.*** ***b. Generate, analyze, and explain numerical patterns and relationships.*** **Measurement and Data** ***c. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects, and the conversion of measurements from a larger unit to a smaller unit.***

Performance Indicators Scoring Criteria for Competency 3

Performance Indicators Grades K-2	**Emerging**	**Progressing**	**Competent**	**Exemplary**
a. Model, evaluate, and explain problem solving situations involving addition and subtraction, apply the properties of operations, and explain the relationship between addition and subtraction. MGSEK.OA.1, 2 MGSE1.OA.1, 2, 3, 4, 5, 8 MGSE1.MD.4 MGSE2.OA.1, 2, 4 MGSE2.MD.5, 8	The student models a problem solving situation involving addition and/or subtraction.	The student models a problem solving situation involving addition and subtraction, and applies the properties of addition.	The student models, evaluates, and explains problem solving situations involving addition and subtraction, applies the properties of operations, and explains the relationship between addition and subtraction.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across discipline
b. Generate, analyze, and explain numerical patterns and relationships. MGSEK.CC.1 MGSE1.NBT.2 MGSE2.OA.3 MGSE2.NBT.2	The student generates numerical patterns.	The student generates and analyzes numerical patterns.	The student generates, analyzes, and explains numerical patterns and relationships.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.
Sample Tasks: https://www.illustrativemathematics.org/content-standards/K/OA/A/2/tasks/70 https://www.illustrativemathematics.org/content-standards/K/OA/A/3/tasks/176 https://www.illustrativemathematics.org/content-standards/K/OA/A/3/tasks/175 https://www.illustrativemathematics.org/content-standards/1/OA/A/1/tasks/1152 https://www.illustrativemathematics.org/content-standards/1/OA/A/1/tasks/1317 http://www.insidemathematics.org/assets/problems-of-the-month/squirreling%20it%20away.pdf (Level A or B) https://www.illustrativemathematics.org/content-standards/2/OA/C/tasks/1304				



Henry County Mathematics Scoring Criteria

Performance Indicators Grades 3-5	Emerging	Progressing	Competent	Exemplary
a. Model, evaluate, and explain problem solving situations involving all four operations, apply the properties of operations, and can explain the relationship between addition/subtraction and multiplication/division. MGSE3.OA.1, 2, 3, 4, 5, 6, 7, 8 MGSE3.NBT.2, 3 MGSE3.MD.2, 3, 7, 8 MGSE4.OA.1, 2, 3 MGSE4.NF.3d, 4c MGSE4.MD2 MGSE5.OA.1, 2 MGSE5.NF.6, 7c MGSE5.MD.5	The student models a problem solving situation involving addition, subtraction, multiplication and division.	The student models a problem solving situation involving addition/subtraction and multiplication/division and applies the properties of operations.	The student models, evaluates, and explains problem solving situations involving all four operations, applies the properties of operations, and can explain the relationship between addition/subtraction and multiplication/division.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.
b. Generate, analyze, and explain numerical patterns and relationships. MGSE3.OA.9 MGSE4.OA.5 MGSE4.NBT.1 MGSE5.OA.3 MGSE5.NBT.1, 2 MGSE5.NF.7	The student generates numerical patterns.	The student generates and analyzes numerical patterns.	The student generates, analyzes, and explains numerical patterns and relationships.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.
c. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects, and the conversion of measurements from a larger unit to a smaller unit. MGSE3.MD.1, 2 MGSE.4.MD1, .2, 3 MGSE5.MD.1, 2, 3, 4, 5	The student solves problems involving measurement (intervals of time, liquid volume, masses of objects).	The student solves problems involving measurement and estimation of intervals of time, liquid volume, and masses of objects.	The student solves problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects, and the conversion of measurements from a larger unit to a smaller unit. .	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.

Henry County Mathematics Scoring Criteria

Graduation Competency #4: The student uses functions to interpret and analyze a variety of contexts. Functions describe situations where one quantity determines another. Functions describe situations where one quantity determines another. In school mathematics, functions usually have numerical inputs and outputs and are often defined by an algebraic expression. Functions presented as expressions can model many important phenomena

Legend:	Grades K-2
	Grades 3-5

Competency #4. Performance Indicators Elementary School (K-5)
Operations and Algebraic Thinking a. Organize information in contexts using two column tables and analyze data in the table by looking for and explaining patterns. ***a. Organize information in contexts using two column tables and analyze data in the table by looking for and explaining patterns.***

Performance Indicators Scoring Criteria for Competency 4

Performance Indicators Grades K-2	**Emerging**	**Progressing**	**Competent**	**Exemplary**
a. Organize information in contexts using two column tables and analyze data in the table by looking for and explaining patterns. MGSE.K.OA.3, 4 MGSE.1.OA.1, 4, 7, 8 MGSE.2.NBT.2	With limited understanding, the student constructs charts from a context.	The student constructs two-column charts or tables of data from a context.	The student organizes information in contexts using two column tables and analyzes data in the table by looking for and explaining patterns.	The competent student can organize information from an authentic context and/or problems that exist across disciplines.
Sample Tasks: http://nrich.maths.org/88 http://nrich.maths.org/137 http://nrich.maths.org/166&part				
Performance Indicators Grades 3-5	**Emerging**	**Progressing**	**Competent**	**Exemplary**
a. Organize information in contexts using two column tables and analyze data in the table by looking for and explaining patterns. MGSE.4.OA.5 MGSE.5.OA.3 MGSE.5.G.2	With limited understanding, the student constructs charts from a context.	The student constructs two-column charts or tables of data from a context.	The student organizes information in contexts using two column tables and analyzes data in the table by looking for and explaining patterns.	The competent student can organize information from an authentic context and/or problems that exist across disciplines.
Sample Tasks: http://www.insidemathematics.org/assets/common-core-math-tasks/houses%20in%20a%20row.pdf http://www.insidemathematics.org/assets/problems-of-the-month/digging%20dinosaurs.pdf (Level D) http://www.insidemathematics.org/assets/problems-of-the-month/first%20rate.pdf (Level A)				

Henry County Mathematics Scoring Criteria

Graduation Competency #5: The student proves, understands, and models geometric concepts using appropriate tools, theorems and constructions to solve problems and apply logical reasoning. Geometric sense allows students to comprehend space and shape. Students analyze the characteristics and relationships of shapes and structures, engage in logical reasoning, and use tools and techniques to determine measurement. Students learn that geometry and measurement are useful in representing and solving problems in the real world as well as in mathematics.

Legend:	Grades K-2
	Grades 3-5

Competency #5. Performance Indicators Elementary School (K-5)
Geometry
a. Create, identify, and distinguish between shapes based on their properties and defining attributes.
a. Identify, create, and distinguish between shapes, lines, and angles based on their properties and defining attributes.
b. Partition shapes into equal shares to model and solve problems and describe these shares as halves, thirds, fourths and/or quarters.
b. Graph points on the coordinate plane to solve real-world and mathematical problems.
Measurement and Data
c. Describe, compare, and estimate measurable attributes (i.e. length, weight).
c. Understand and model concepts of geometric measurement (perimeter, area and volume) and relate these measurements to multiplication and to addition.
d. Demonstrate the understanding of the concepts of angle by measuring angles and explaining their measurements.

Performance Indicators Scoring Criteria for Competency 5

Performance Indicators Grades K-2	Emerging	Progressing	Competent	Exemplary
a. Create, identify, and distinguish between shapes based on their properties and defining attributes. MGSEK.G.1, 2, 3, 4, 5, 6 MGSE1.G.1, 2 MGSE2.G.1	The student identifies shapes based on their properties and defining attributes.	The student identifies and creates shapes based on their properties and defining attributes.	The student identifies, creates, and distinguishes between shapes based on their properties and defining attributes.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.
b. Partition shapes into equal shares to model and solve problems and describe these shares as halves, thirds, fourths and/or quarters. MGSE.1.G.3 MGSE.2.G.2, 3	The student identifies shapes partitioned into equal shares.	The student partitions shapes into equal shares and describes these shares as halves, thirds, fourths and quarters.	The student partitions shapes into equal shares to model and solve problems and describes these shares as halves, thirds, fourths and quarters.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.
c. Describe, compare, and estimate measurable attributes (i.e. length, weight). MGSEK.MD.1, 2 MGSE1.MD.1, 2 MGSE2.MD.1, 2, 3, 4	The student describes an object based on a measurable attribute.	The student describes and compares objects to one another.	The student describes, compares, and estimates measurable attributes.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic

				context and/or problems that exist across disciplines.

Sample Tasks:
http://nrich.maths.org/7009
http://www.insidemathematics.org/assets/problems-of-the-month/piece%20it%20together.pdf (Level A & B)
http://www.insidemathematics.org/assets/problems-of-the-month/surrounded%20and%20covered.pdf (Level A)
http://www.insidemathematics.org/assets/problems-of-the-month/on%20balance.pdf (Level A)

Performance Indicators Grades 3-5	Emerging	Progressing	Competent	Exemplary
a. Identify, create, and distinguish between shapes, lines, and angles based on their properties and defining attributes. MGSE3.G.1 MGSE4.G.1, 2, 3 MGSE5.G.3, 4	The student identifies shapes, lines, and angles based on their properties and defining attributes.	The student identifies and creates shapes, lines, and angles based on their properties and defining attributes.	The student identifies, creates, and distinguishes between shapes, lines, and angles based on their properties and defining attributes.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.
b. Graph points on the coordinate plane to solve real-world and mathematical problems. MGSE5.G.1, 2	The student identifies the structure of the coordinate plane (i.e. x-axis, y-axis, origin, coordinate pairs)	The student identifies and graphs points within the first quadrant of the coordinate plane.	The student graphs points on the coordinate plane to solve real-world and mathematical problems.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.
c. Understand and model concepts of geometric measurement (perimeter, area and volume) and relate these measurements to multiplication and to addition. MGSE3.MD.5, 6, 7, 8 MGSE.3.G.2 MGSE4.MD.3, 8 MGSE5.MD.3, 4, 5	The student builds models of geometric measurement (perimeter, area and volume) problems.	The student develops understanding of geometric measurement (perimeter, area and volume) through model building and sense making.	The student understands and models concepts of geometric measurement (perimeter, area and volume) and relates these measurements to multiplication and addition.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.
d. Demonstrate the understanding of the concepts of angle by measuring angles and explaining their measurements. MGSE4.MD.5, 6, 7	The student identifies angles as right, acute, obtuse, or straight.	The student measures angles using tools such as pattern blocks & circles, angle rulers, and protractors.	The student demonstrates the understanding of the concepts of angle by measuring angles and explaining their measurements in reference to a circle.	The competent student makes sense of and solves problems and defends a mathematical model in an authentic context and/or problems that exist across disciplines.

Henry County Mathematics Scoring Criteria

Graduation Competency #6: The student uses a variety of data analysis and statistics strategies to analyze, develop and evaluate inferences based on data. The use of data and probability provide students with tools to understand information and uncertainty. Students ask questions and gather and use data to answer them. Probability provides the foundation for collecting, describing, and interpreting data.

Legend:	Grades K-2
	Grades 3-5

Competency #6. Performance Indicators Elementary School (K-5)
Data a. Collect, represent, and interpret data with up to three categories. ***a. Collect, represent, and interpret data with multiple categories.***

Performance Indicators Scoring Criteria for Competency 6

Performance Indicator Grades K-2	**Emerging**	**Progressing**	**Competent**	**Exemplary**
a. Collect, represent, and interpret data with up to three categories. MGSE.K.MD.3 MGSE.1.MD.4 MGSE.2.MD.9, 10	With limited understanding, the student asks questions, gathers information, attempts to represent data.	The student can ask a variety of questions, gather information, and represent data.	The student collects, represents, and interprets data with up to three categories.	The competent student collects, represents and interprets data in a variety of contexts and in problems that exist across disciplines.

Sample Tasks: http://www.insidemathematics.org/assets/problems-of-the-month/pick%20a%20pocket.pdf (Level A) http://nrich.maths.org/2341				
Performance Indicator Grades 3-5	**Emerging**	**Progressing**	**Competent**	**Exemplary**
a. Collect, represent, and interpret data with up to three categories. MGSE.3.MD.3, 4 MGSE.4.MD.4 MGSE.5.MD.2	With limited understanding, the student asks questions, gathers information, attempts to represent data.	The student can ask a variety of questions, gather information, and represent data.	The student collects, represents, and interprets data with multiple categories.	The competent student collects, represents and interprets data in a variety of contexts and in problems that exist across disciplines.
Sample Tasks: http://www.insidemathematics.org/assets/problems-of-the-month/through%20the%20grapevine.pdf (Level A) http://nrich.maths.org/7725				