Achievement Level Descriptors

Grade 7 Mathematics

Georgia Department of Education
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Achievement Levels and Achievement Level Descriptors

With the implementation of the Georgia Milestones Assessment System, Georgia educators have developed four achievement levels to describe student mastery and command of the knowledge and skills outlined in Georgia's content standards. Most students have at least some knowledge of the content described in the content standards; however, achievement levels succinctly describe how much mastery a student has. Achievement levels give meaning and context to scale scores by describing the knowledge and skills students must demonstrate to achieve each level.

The four achievement levels on Georgia Milestones are *Beginning Learner*, *Developing Learner*, *Proficient Learner*, and *Distinguished Learner*. The general meaning of each of the four levels is provided below:

Beginning Learners do not yet demonstrate proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in Georgia's content standards. The students ***need substantial academic support*** to be prepared for the next grade level or course and to be on track for post-secondary readiness.

Developing Learners demonstrate partial proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in Georgia's content standards. The students ***need additional academic support*** to ensure success in the next grade level or course and to be on track for post-secondary readiness.

Proficient Learners demonstrate proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in Georgia's content standards. The students ***are prepared*** for the next grade level or course and are on track for post-secondary readiness.

Distinguished Learners demonstrate advanced proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in Georgia's content standards. The students ***are well prepared*** for the next grade level or course and are well prepared for post-secondary readiness.

More detailed and content-specific concepts and skills are provided for each grade, content area, and course in the **Achievement Level Descriptors** (ALDs). ALDs are narrative descriptions of the knowledge and skills expected at each of the four achievement levels and were developed for each grade level, content area, and course by committees of Georgia educators.

ALDs show a progression of knowledge and skills for which students must demonstrate competency across the achievement levels. It is important to understand that a student should demonstrate mastery of the knowledge and skills within the student's achievement level as well as all content and skills in any achievement levels that precede the student's own, if any. For example, a Proficient Learner should also possess the knowledge and skills of a Developing Learner and a Beginning Learner.

POLICY DESCRIPTORS			
Beginning Learner	**Developing Learner**	**Proficient Learner**	**Distinguished Learner**
Beginning Learners do not yet demonstrate proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in Georgia's content standards. The students *need substantial academic support* to be prepared for the next grade level or course and to be on track post-secondary *readiness.*	**Developing Learners demonstrate partial proficiency in the knowledge and skills** necessary at this grade level/course of learning, as specified in Georgia's content standards. The students *need additional academic support* to ensure success in the next grade level or course and to be on track for *post-secondary readiness.*	**Proficient Learners demonstrate proficiency in the knowledge and skills** necessary at this grade level/course of learning, as specified in Georgia's content standards. The students *are prepared* for the next grade level or course and are on track for *post-secondary readiness.*	**Distinguished Learners demonstrate advanced proficiency in the knowledge and skills** necessary at this grade level/course of learning, as specified in Georgia's content standards. The students *are well prepared* for the next grade level or course and are well prepared for *post-secondary readiness.*
RANGE DESCRIPTORS			
A student who achieves at the Beginning Learner level demonstrates minimal command of the grade-level standards.	A student who achieves at the Developing Learner level demonstrates partial command of the grade-level standards.	A student who achieves at the Proficient Learner level demonstrates proficiency of the grade-level standards.	A student who achieves at the Distinguished Learner level demonstrates advanced proficiency of the grade-level standards.
7.NR.1: Solve relevant, mathematical problems, including multi-step problems, involving the four operations with rational numbers and quantities in any form (integers, percentages, fractions, and decimal numbers).			
• Identify that the sum of a number and its opposite is 0. • Identify the absolute value of a rational number. • Given a horizontal or vertical number line, solve a problem involving the addition of two rational numbers. • Identify that the subtraction of two rational numbers is equivalent to adding the additive inverse. • Identify equivalent expressions involving the addition of rational numbers by using the properties of operations. • Identify repeating decimal numbers as rational numbers.	• Solve relevant problems involving the sum of a number and its opposite. • Solve problems involving the sum of two rational numbers. • Given a horizontal or vertical number line, solve a problem involving the subtraction of two rational numbers. • Given a number line, demonstrate the subtraction of two rational numbers as the absolute value of their difference to represent a situation. • Identify equivalent expressions involving the addition, subtraction, multiplication, and division of rational numbers by using the properties of operations. • Match fractional forms of rational numbers to the decimal and/or percentage forms.	• Solve relevant problems involving the addition, subtraction, multiplication, and division of two rational numbers and interpret the solution. • Apply the properties of operations to add, subtract, multiply, and divide rational numbers. • Solve multi-step contextual problems involving rational numbers, converting between forms as appropriate and assessing the reasonableness of answers.	• Solve complex, multi-step contextual problems involving rational numbers, converting between forms as appropriate and assessing the reasonableness of answers by using mental computation and estimation strategies.

7.PAR.2: Use properties of operations, generate equivalent expressions and interpret the expressions to explain relevant situations.			
• Identify a linear expression that represents a relevant situation.	• Apply the properties of operations to identify equivalent linear expressions with rational coefficients. • Write an expression that represents a relevant situation to show how quantities are related.	• Apply the properties of operations to create equivalent linear expressions with rational coefficients. • Write expressions presented in relevant situations in different forms to explain how the quantities are related.	• Apply the properties of operations to write, evaluate, and interpret equivalent linear expressions with rational coefficients in multi-step, relevant problems.
7.PAR.3: Represent authentic situations using equations and inequalities with variables; solve equations and inequalities symbolically, using the properties of equality.			
• Solve problems of the form $px + q = r$ and $p(x + q) = r$. • Solve problems of the form $px \pm q > r$, $px \pm q < r$, $px \pm q \leq r$, and $px \pm q \geq r$.	• Solve practical problems of the form $px + q = r$ and $p(x + q) = r$ and interpret the solutions based on the situations. • Solve problems of the form $px \pm q > r$, $px \pm q < r$, $px \pm q \leq r$, and $px \pm q \geq r$ and interpret the solutions based on realistic situations.	• Create and solve algebraic equations and inequalities to represent realistic problems. • Graph algebraic inequalities on a number line and interpret the solutions based on realistic situations.	• Create linear equations and inequalities to solve complex, realistic problems, and graph and/or interpret the solutions.

7.PAR.4: Recognize proportional relationships in relevant, mathematical problems; represent, solve, and explain these relationships with tables, graphs, and equations.			
• Calculate a unit rate from a verbal description. • Given a graph, identify whether the relationship shown is proportional. • Determine the missing side in a pair of scale drawings of geometric figures. • Make a prediction about a population from the data in a representative sample.	• Identify and calculate the unit rate from a realistic problem. • Given a set of values described by a graph/table or a relevant context, determine whether the values are in a proportional relationship. • Create a scale drawing of a geometric figure. • Graph a proportional relationship from the slope or unit rate. • Solve relevant ratio and percentage problems. • Explain potential limitations to making predictions about a population from a representative sample. • Recognize the sampling method that would best support a conclusion about a population.	• Determine the unit rate or constant of proportionality by extracting data from a table, graph, equation, diagram, or verbal description. • Determine whether two quantities presented in authentic problems are in a proportional relationship. • Explain the properties of proportional relationships to solve relevant problems. • Explain what a coordinate point (x, y) means in the graph of a proportional relationship and relate it to the unit rate. • Solve a multi-step, relevant problem involving scale drawings. • Given the graph of a proportional relationship, use similar triangles to explain why the slope is the same between any two points. • Compare two different proportional relationships represented in different ways. • Solve multi-step, relevant ratio and percentage problems. • Make a prediction about a population from repeated random samples.	• Explain the key features of proportional relationships in equations, tables, and graphs to explain the relationships in context. • Solve a multi-step, everyday problem involving scale drawings, including computing lengths and areas and explaining relationships in the context of the problem. • Solve multi-step, relevant problems involving proportional relationships in different forms, explaining the solution in the context of the problem. • Analyze and interpret how data is collected to solve statistical questions and compare multiple data sets to solve complex, relevant problems.

7.GSR.5: Solve practical problems involving angle measurement, circles, area of circles, surface area of prisms and cylinders, and volume of cylinders and prisms composed of cubes and right prisms.			
• Determine the measure of an angle with a whole, nonstandard unit. • Identify supplementary, complementary, vertical, and adjacent angles.	• Given a circle divided into wedges of equal size, make a comparison. • Determine the measure of an angle, in whole-number degrees, using a protractor. • Solve a problem by using facts about supplementary, complementary, vertical, and adjacent angles. • Determine the circumference and area of a circle. • Determine the surface area of right prisms and cylinders. • Determine the volumes of cylinders and right prisms.	• Determine the measure of an angle within a figure, in whole-number degrees, using a protractor. • Solve a multi-step problem by using facts about supplementary, complementary, vertical, and adjacent angles. • Solve a realistic problem involving the area or circumference of a circle. • Solve a realistic problem involving the surface areas of a right prism and a cylinder. • Identify the two-dimensional cross sections that result from horizontally or vertically slicing (limited to horizontal and vertical slices) right rectangular prisms, right rectangular pyramids, cones, cylinders, and spheres. • Solve multi-step problems involving the volumes of cylinders and right prisms.	• Solve a multi-step problem with multiple relationships between supplementary, complementary, vertical, and adjacent angles. • Solve multi-step, realistic problems involving the areas and circumferences of circles and the surface areas and volumes of prisms and cylinders.
7.PR.6: Using mathematical reasoning, investigate chance processes and develop, evaluate, and use probability models to find probabilities of simple events presented in authentic situations.			
• Recognize an event as likely, unlikely, or neither likely nor unlikely.	• Determine the probability of an event based on the likelihood of the event. • Determine the probability of a chance event by using the data collected from trials of the event. • Use a uniform probability model to predict the outcome of an experiment. • Use a probability model to predict an outcome. • Compare data from two data displays and numerical summaries.	• Calculate the theoretical probability of a chance event. • Compare the experimental and theoretical probabilities of events. • Describe a uniform probability model that represents a realistic problem. • Describe a probability model that represents a realistic problem. • Use measures of central tendency and/or variability to compare data from two data displays.	• Describe situations modeled by probabilities, including making predictions based on experimental and theoretical probabilities and developing probability models.

