Achievement Level Descriptors

for

Grade 8 Mathematics

Georgia Department of Education
September 2015

Based on the 2014-2015 Administrations

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 college and career 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 college and career 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 college and career 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 college and career 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 in March 2015 and July 2015. The ALDs are based on the state-adopted content standards.

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 his/her achievement level *as well as all content and skills in any achievement levels that precede his/her own, if any*. For example, a Proficient Learner should also possess the knowledge and skills of a Developing Learner *and* a Beginning Learner.

ALD		Standard	Beginning Learner	Developing Learner	Proficient Learner	Distinguished Learner
Policy			**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 *college and career 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 *college and career 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 *college and career 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 *college and career readiness.*
Range			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.
		8.NS.1 8.NS.2	Recognizes irrational numbers as a category distinct from rational numbers.	Recognizes examples of irrational numbers as square roots of non-perfect squares or cube roots of non-perfect cubes and writes approximations of irrational numbers to the nearest whole number.	Interprets irrational numbers as nonterminating or nonrepeating decimals or as constants such as π.	Recognizes that irrational numbers are not expressible as a quotient of any two rational numbers and writes approximations of irrational numbers as a sequence of calculations that approach but do not reach the number.
		8.EE.1 8.EE.2 8.EE.3 8.EE.4 8.EE.5 8.EE.6 8.EE.7 8.EE.8	Calculates the value of a base with a negative integer exponent, represents whole-number multiples of ten in scientific notation, and identifies equivalent ratios.	Recognizes and uses integer exponents, expresses quantities in scientific notation, finds the slope of a graph and relates it to proportional reasoning, and understands the meaning of equations with two variables	Understands and applies the properties of integer exponents, scientific notation, connections between proportional relationships, the slope of a graph, and triangle similarity and solves linear equations and systems of linear	Understands, applies, and interprets the properties of integer exponents, scientific notation, operations in scientific notation, graphing proportional relationships in multiple ways, the relationship between similar triangles, and the slope of a

				and how to use them to solve problems.	equations and solves word problems with two linear equations in two variables.	graph and interprets, analyzes, graphs, and solves linear equations in two variables and solves complex multistep word problems involving systems of linear equations.
		8.F.1 8.F.2 8.F.3 8.F.4 8.F.5	Distinguishes between relations that are functions and relations that are not.	Identifies and defines linear functions and uses functions to model relationships between two quantities.	Defines, evaluates, compares, and uses functions to model relationships between quantities, in multiple representations.	Defines, analyzes, compares, and uses functions to model relationships between quantities and identifies characteristics of different types of functions.
		8.G.1 8.G.2 8.G.3 8.G.4 8.G.5 8.G.6 8.G.7 8.G.8 8.G.9	Recognizes congruence and similarity and distinguishes between them, finds the hypotenuse of a right triangle whose sides are Pythagorean triples, and recognizes single transformations.	Recognizes and identifies congruence and similarity using physical models, transparencies, or geometry software; applies the Pythagorean theorem in two dimensions; and recognizes and applies sequences of congruent transformations.	Understands congruence and similarity using physical models, transparencies, or geometry software; understands and applies the Pythagorean theorem and its converse, in two dimensions; describes sequences of transformations, including dilations; and applies the formulas of volume.	Understands and analyzes congruence and similarity using physical models, transparencies, or geometry software; interprets and applies the Pythagorean theorem in three dimensions; applies volume to real-world problems; and explains a proof of the Pythagorean theorem.
		8.SP.1 8.SP.2 8.SP.3 8.SP.4	Recognizes association in bivariate data.	Recognizes and describes association in bivariate data.	Constructs and describes bivariate data in a two-way table and recognizes, describes, and investigates patterns of association in bivariate data.	Describes, analyzes, and investigates patterns of association in bivariate categorical data in a two-way table.

