Achievement Level Descriptors

for

Analytic Geometry

Georgia Department of Education
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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.
	N.RN.1 N.RN.2 N.RN.3 N.CN.1 N.CN.2 N.CN.3	Identifies rational and irrational numbers and rational exponents; and identifies complex numbers.	Uses rational and irrational numbers and rational exponents; understands the concepts of *i*; and adds and subtracts complex numbers.	Uses properties of rational and irrational numbers and rational exponents; understands powers of *i*; and multiplies complex numbers.	Interprets, understands, and uses properties of rational and irrational numbers and rational exponents; uses conjugates to find quotients of complex numbers; and interprets real and complex numbers to solve quadratic equations.
	A.SSE.1 A.SSE.2 A.SSE.3 A.APR.1 A.CED.1 A.CED.2 A.CED.4 A.REI.4 A.REI.7	Uses arithmetic to perform operations with expressions.	Describes the structure of expressions and uses arithmetic to perform operations; creates equations that describe relationships; reasons using equations and inequalities; and identifies solutions to systems of equations graphically.	Interprets the structure of expressions and writes expressions in equivalent forms to solve problems; performs arithmetic operations on polynomials; creates equations that describe numbers or relationships; solves equations and inequalities in one variable; and solves systems of equations in two variables.	Interprets and analyzes the structure of expressions and represents and writes expressions in equivalent forms to solve problems; understands and uses arithmetic operations on polynomials; analyzes and creates equations that describe numbers and relationships; solves multistep equations and inequalities in one variable; and

					solves systems of equations in two variables.
	F.IF.4 F.IF.5 F.IF.6 F.IF.7a F.IF.8 F.IF.9 F.BF.1 F.BF.3 F.LE.3	Identifies and classifies functions.	Interprets functions from context; identifies functions; builds functions that model simple relationships; and compares linear, quadratic, and exponential models.	Interprets functions that arise in applications in terms of the context; analyzes functions using different representations; builds functions that model relationships between two quantities and builds new functions from existing functions; and constructs and compares linear, quadratic, and exponential models and solves problems.	Analyzes and interprets functions that arise in complex applications or in terms of the context; analyzes and represents functions using different representations; builds functions that model complex relationships between two quantities, including from existing functions; and analyzes linear, quadratic, and exponential models and solves problems.
	G.CO.6 G.CO.7 G.CO.8 G.CO.9 G.CO.10 G.CO.11 G.CO.12 G.CO.13	Identifies rigid transformations.	Uses transformations in the plane as a way to understand and represent congruence and applies geometric theorems and identifies geometric constructions.	Understands congruence in terms of rigid motions and proves geometric theorems and makes geometric constructions.	Interprets, analyzes, and understands congruence in terms of rigid motions and proves geometric theorems and uses geometric constructions to solve problems in context.
	G.SRT.1 G.SRT.2 G.SRT.3 G.SRT.4 G.SRT.5 G.SRT.6 G.SRT.7 G.SRT.8	Identifies similarity figures and uses the Pythagorean theorem.	Recognizes and identifies similarity transformations and uses the trigonometric ratios to solve simple problems with right triangles.	Understands similarity in terms of similarity transformations and proves theorems involving similarity and defines trigonometric ratios and solves problems involving right triangles.	Analyzes and understands similarity in terms of similarity transformations and proves theorems involving similarity and interprets and defines trigonometric ratios and solves multistep problems involving right triangles.
	G.C.1 G.C.2 G.C.3 G.C.4 G.C.5	Calculates the circumference and area of a circle.	Understands theorems about circles and finds simple arc lengths and areas of sectors of circles.	Understands and applies theorems about circles and finds arc lengths and areas of sectors of circles.	Understands and applies theorems about circles and uses them in context and uses arc lengths and areas of sectors of circles to solve problems.
	G.GPE.1 G.GPE.2 G.GPE.4	Identifies the center and radius of a circle from a graph.	Identifies the center and radius of a circle from an equation; and identifies the focus and directrix	Translates between geometric descriptions and the equation for a conic section; uses	Translates between geometric descriptions and the equation for a conic section; interprets

			of a parabola from an equation.	coordinates to prove simple geometric theorems algebraically; and derives the equation of a parabola given a focus and directrix.	and uses coordinates to prove simple geometric theorems algebraically; and derives the equation of a parabola given a graph.
	G.MD.1 G.MD.2 G.MD.3 G.MD.4 G.MG.1 G.MG.2 G.MG.3	Calculates volume.	Uses volume formulas to solve problems, visualizes two- and three-dimensional objects, and selects geometric concepts to model situations.	Explains volume formulas and uses them to solve problems, visualizes relationships between two- and three-dimensional objects, and applies geometric concepts in modeling situations.	Explains volume formulas and uses them to solve complex problems, visualizes relationships between two- and three-dimensional objects, and applies geometric concepts in modeling situations with multiple constraints.
	S.ID.6 S.CP.1 S.CP.2 S.CP.3 S.CP.4 S.CP.5 S.CP.6 S.CP.7	Represents data with quantitative variables and calculates the probability of independent events.	Represents data with two categorical and quantitative variables and calculates the probabilities of independent and dependent events.	Summarizes, represents, and interprets data on two categorical and quantitative variables; understands independence and conditional probability and uses them to interpret data; and uses the rules of probability to compute probabilities of compound events in a uniform probability model.	Summarizes, represents, and interprets data on two categorical and quantitative variables; understands and interprets independence and conditional probability and uses them to represent and interpret data; and uses the rules of probability to understand and compute probabilities of compound events in a uniform probability model.

