Georgia Milestones Assessment System

Achievement Level Descriptors

Grade 4 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.

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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 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.*
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.
4.NR.1: Recognize patterns within the base ten place value system with quantities presented in real-life situations to compare and round multi-digit whole numbers through the hundred-thousands place.			
• Given a whole number to the hundred-thousands place in base ten numerals or expanded form, identify the other form of that number. • Recognize that a digit in one place in a whole number has a value that is 10 times greater than the value of the same digit one place to the right. • Given a visual representation, compare two multi-digit whole numbers to the hundred-thousands place using >, =, and < symbols. • Given a visual aid, such as a number line, round multi-digit whole numbers to the 1,000s, 10,000s, or 100,000s.	• Given a whole number to the hundred-thousands place in base ten numerals or expanded form, create the other form of that number. • Recognize that a digit in one place in a whole number has a value that is 1/10 the value of the same digit one place to the left. • Compare two multi-digit whole numbers to the hundred-thousands place using >, =, and < symbols. • Round multi-digit whole numbers to the 1,000s, 10,000s, or 100,000s.	• Determine the value of a digit in a whole number when the digit is shifted to the left or right. • Compare and order three to five multi-digit whole numbers to the hundred-thousands place using >, =, and < symbols. • Round multi-digit whole numbers to any place up to the hundred-thousands place to solve real-life mathematical problems.	• Compare and order up to five multi-digit whole numbers to the hundred-thousands place to solve real-life mathematical problems.

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4.NR.2: Using part-whole strategies, solve problems involving addition and subtraction through the hundred-thousands place, as well as multiplication and division of multi-digit whole numbers presented in real-life, mathematical situations.			
• Given a visual representation, solve problems involving multiplicative comparison. • Multiply multi-digit whole numbers (up to 4 digits) by single-digit whole numbers.	• Add and subtract multi-digit whole numbers to the hundred-thousands place. • Solve multiplicative comparison problems. • Multiply multi-digit whole numbers (2 digits by 2 digits). • Divide multi-digit whole numbers (up to 4-digit dividends) by single-digit whole numbers (1-digit divisors).	• Add and subtract multi-digit whole numbers within 100,000 to solve real-life mathematical problems. • Interpret and solve real-life mathematical problems involving multiplicative comparison using an expression or visual representation. • Multiply multi-digit whole numbers (up to 4 digits) by single-digit numbers or multiply 2 two-digit whole numbers to solve real-life mathematical problems. • Divide multi-digit whole numbers (up to 4-digit dividends) by single-digit whole numbers (1-digit divisors) to solve real-life mathematical problems. • Justify the reasonableness of solutions using mental computation and estimation strategies.	• Use multiple operations (addition, subtraction, multiplication, and division) with multi-digit whole numbers to solve real-life multi-step mathematical problems.
4.PAR.3: Generate and analyze patterns, including those involving shapes, input/output diagrams, factors, multiples, prime numbers, and composite numbers.			
• Given a number or shape pattern, extend or complete the pattern. • Given an input-output rule and a table, find a missing value in the table. • Identify a multiple of a single-digit number up to 100.	• Generate a number or shape pattern based on a given rule. • Match an input-output rule to a table. • Given a number in the range 1–100, identify a factor pair of the number. • Determine whether a given whole number in the range of 1–100 is prime or composite.	• Identify features of a number or shape pattern that are not explicit in the given rule. • Use input-output rules and tables to represent and describe patterns. • Given a number in the range 1–100, find all factors of the number. • Given a single-digit number, find all multiples of the number up to 100. • Explain the relationship between whether a number is prime or composite and its factor pairs.	• Solve real-life problems or find relationships using an input-output table. • Solve real-life problems involving factors and multiples.

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4.NR.4: Solve real-life problems involving addition, subtraction, equivalence, and comparison of fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100 using part-whole strategies and visual models.			
• Given a visual representation, compare two fractions with different numerators and different denominators. • Given a visual representation, represent a fraction as a sum of fractions with the same denominator using an equation. • Given a visual representation, add and subtract fractions with like denominators.	• Generate equivalent fractions. • Compare two fractions with the same numerator or the same denominator. • Represent a fraction or a whole number as the sum of unit fractions. • Represent a fraction as a sum of fractions with the same denominator using an equation. • Add and subtract fractions with like denominators.	• Explain the relationship between equivalent fractions in real-life problems. • Compare two fractions with the same numerator or the same denominator to solve real-life problems. • Compare two fractions with different numerators and different denominators. • Solve real-life mathematical problems by representing fractions or whole numbers as the sum of unit fractions. • Identify sums of fractions that are equivalent to a given fraction in more than one way. • Add and subtract fractions and mixed numbers with like denominators in real-life problems.	• Solve real-life problems involving addition, subtraction, equivalence, and comparison of fractions. • Compare two fractions with different numerators and different denominators to solve real-life mathematical problems. • Add and subtract fractions and mixed numbers with like denominators to solve complex real-life problems.
4.NR.5: Solve real-life problems involving addition, equivalence, comparison of fractions with denominators of 10 and 100, and comparison of decimal numbers as tenths and hundredths using part-whole strategies and visual models.			
• Given a visual representation, identify equivalent fractions with denominators of 10 and 100. • Given a visual representation, identify equivalency between a fraction with a denominator of 10 or 100 and a decimal number. • Given a visual representation, compare two decimal numbers to the hundredths place using >, =, and < symbols.	• Identify or create equivalent fractions with denominators of 10 and 100. • Represent fractions with denominators of 10 or 100 as a decimal number. • Compare two decimal numbers to the hundredths place using >, =, and < symbols.	• Add two fractions with denominators of 10 and 100. • Represent a decimal number to the hundredths place as a fraction. • Compare two decimal numbers to the hundredths place to solve real-life problems.	• Solve real-life problems involving comparison of fractions with denominators of 10 or 100 to decimal numbers to the hundredths place.

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4.MDR.6: Measure time and objects that exist in the world to solve real-life, mathematical problems and analyze graphical displays of data to answer relevant questions.			
• Given a measurement in metric units, express the measurement using a different metric unit (e.g., 2 kilograms is 2,000 grams). • Determine whether a set of data is categorical or numerical. • Identify the dot plot that represents a set of measurement data to the nearest 1/2, 1/4, and 1/8 of an inch.	• Determine an appropriate representation of data based on whether the data are categorical or numerical. • Create or complete a dot plot that represents a set of measurement data to the nearest 1/2, 1/4, and 1/8 of an inch.	• Solve problems involving elapsed time and solve multi-step problems involving elapsed time and metric units. • Solve problems using bar graphs, pictographs, and dot plots. • Solve problems involving addition and subtraction of fractions with common denominators by using information presented in dot plots.	• Solve complex real-life problems involving measurement data, including finding equivalent measurement units and using information presented in bar graphs, pictographs, and dot plots.
4.GSR.7: Investigate the concepts of angles and angle measurement to estimate and measure angles.			
• Identify an angle at the center of a circle as right, acute, or obtuse.	• Given an angle or an angle measure, identify the angle as right, acute, or obtuse. • Represent and identify angle measures using degrees.	• Given a circle divided into equal-sized wedges, find the angle of a wedge by dividing 360 by the number of wedges.	• Investigate the concepts of angle measure using degrees to solve real-life mathematical problems.
4.GSR.8: Identify and draw geometric objects, classify polygons based on properties, and solve problems involving area and perimeter of rectangular figures.			
• Determine whether a two-dimensional shape is a polygon.	• Identify points, lines, line segments, rays, angles (right, acute, obtuse), perpendicular lines, parallel lines, and lines of symmetry in two-dimensional figures. • Identify isosceles, equilateral, scalene, right, acute, and obtuse triangles. • Find the perimeter of a composite figure made of rectangles.	• Solve problems involving points, lines, line segments, rays, angles (right, acute, obtuse), perpendicular lines, parallel lines, and lines of symmetry including problems with multiple figures and multiple attributes. • Classify polygons based on lines of symmetry, the presence or absence of parallel or perpendicular line segments, or the presence or absence of angles of a specified size and based on side lengths. • Find the area of a composite figure made of rectangles.	• Find the perimeters and areas of composite figures made of rectangles to solve complex real-life problems.

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