


# Achievement Level Descriptors

# Grade 5 Mathematics

Georgia Department of Education
July 2024
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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 | | | |
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| **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. |
| *5.NR.1: Use place value understanding to solve real-life, mathematical problems.* | | | |
| • Identify the value of a digit up to 100 times the value or 1/1,000 the value of another digit in a multi-digit number.<br>• Use whole-number exponents to denote powers of 10, up to $10^3$. | • Describe the relationship between two identical digits with different place values as being up to 100 times the value or 1/1,000 the value of the other digit.<br>• Use place value understanding to multiply or divide a number by 10, $10^2$, or $10^3$. | • Explain that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.<br>• Explain patterns in the placement of digits when multiplied or divided by a power of 10, up to $10^3$.<br>• Solve real-life, mathematical problems to explain patterns in the place value system. | • Solve multi-step, real-life, mathematical problems to explain patterns in the place value system. |
| *5.NR.2: Multiply and divide multi-digit whole numbers to solve relevant, mathematical problems.* | | | |
| | • Fluently multiply multi-digit whole numbers (up to 3-digit by 2-digit).<br>• Fluently divide multi-digit whole numbers (up to 4-digit dividends and 2-digit divisors no greater than 25). | • Multiply multi-digit whole numbers (up to 3-digit by 2-digit) to solve relevant problems.<br>• Divide multi-digit whole numbers (up to 4-digit dividends and 2-digit divisors no greater than 25) to solve relevant problems. | • Use multiplication and division to solve relevant complex or multi-step problems involving multi-digit whole numbers. |

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| *5.NR.3: Describe fractions and perform operations with fractions to solve relevant, mathematical problems using part-whole strategies and visual models.* | | | |
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| • Recognize a fraction as division of the numerator by the denominator ($a/b = a \div b$).<br>• Given a visual representation, compare and order up to three fractions with different numerators and/or different denominators. | • Explain the meaning of a fraction as division of the numerator by the denominator ($a/b = a \div b$).<br>• Use part-whole strategies and visual representations to<br>○ compare two or three fractions with different numerators and/or different denominators.<br>○ add and subtract fractions and mixed numbers with unlike denominators.<br>○ solve problems involving multiplication of a fraction and a whole number.<br>○ solve problems involving division of a unit fraction by a whole number and a whole number by a unit fraction. | • Use part-whole strategies and visual representations to<br>○ solve problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.<br>○ compare and order three fractions with different numerators and/or different denominators and use the results to solve relevant problems.<br>○ solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators.<br>○ solve problems involving multiplication of a fraction and a whole number.<br>○ explain why the product of a fraction and a whole number is greater than (or less than or equal to) the whole number.<br>○ solve problems involving division of a unit fraction by a whole number and a whole number by a unit fraction. | • Represent and solve relevant complex or multi-step problems involving operations with fractions. |
| *5.NR.4: Read, write, and compare decimal numbers to the thousandths place, and round and perform operations with decimal numbers to the hundredths place to solve relevant, mathematical problems.* | | | |
| • Given the standard form or expanded form of a decimal number, identify the other form.<br>• Given a visual representation, compare decimal numbers to the thousandths place by using >, =, and < symbols.<br>• Given a visual representation, such as a number line, round decimal numbers to the hundredths place. | • Given the standard form or expanded form of a decimal number, create the other form.<br>• Compare decimal numbers to the thousandths place by using >, =, and < symbols.<br>• Round decimal numbers to the hundredths place.<br>• Add decimal numbers to the hundredths place. | • Compare and order up to three decimal numbers to the thousandths place by using >, =, and < symbols.<br>• Round decimal numbers to the hundredths place in relevant, mathematical problems.<br>• Subtract decimal numbers to the hundredths place. | • Compare and order up to three decimal numbers to the thousandths place to solve relevant, mathematical problems.<br>• Add and subtract decimal numbers to the hundredths place to solve relevant mathematical problems. |

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| *5.NR.5: Write, interpret, and evaluate numerical expressions within authentic problems.* | | | |
| • Create simple numerical expressions from authentic problems based on visual representations. | • Write, interpret, and evaluate simple numerical expressions. | • Write, interpret, and evaluate simple numerical expressions that represent actual situations within authentic problems. | • Write, interpret, and evaluate multiple simple numerical expressions with grouping symbols that represent actual situations within authentic problems. |
| *5.PAR.6: Solve relevant problems by creating and analyzing numerical patterns using the given rule(s).* | | | |
| | • Create two numerical patterns using two given rules.<br>• Plot ordered pairs in the first quadrant of the coordinate plane or identify the coordinates of a point in the first quadrant. | • Identify the relationships between corresponding terms of two numerical patterns in tables.<br>• Explain the coordinate values of points in the first quadrant of the coordinate plane in the context of relevant problems. | • Solve relevant problems by creating and analyzing numerical patterns by using two given rules and plotting them in the first quadrant of the coordinate plane. |
| *5.MDR.7: Solve problems involving customary measurements, metric measurements, and time and analyze graphical displays of data to answer relevant questions.* | | | |
| • Identify the appropriate unit of measurement to solve a realistic problem.<br>• Ask statistical investigative questions that can be answered by gathering data from relevant situations. | • Convert units within the metric system requiring one step (e.g., centimeters to meters).<br>• Convert units within the customary measurement system requiring one step (e.g., inches to feet).<br>• Informally describe the center and spread of a set of data shown in a graphical display.<br>• Gather information by developing survey questions that would yield the data needed to answer a statistical investigative question. | • Convert units within the metric system requiring two or more steps (e.g., centimeters to kilometers).<br>• Convert units within the customary measurement system requiring two or more steps (e.g., inches to yards).<br>• Solve multi-step problems by analyzing information from one or more graphical displays of data.<br>• Graphically represent and describe the distribution of data through appropriate graphical displays. | • Solve relevant multi-step problems requiring the conversion of customary measurements or metric measurements. |

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| *5.GSR.8: Examine properties of polygons and rectangular prisms, classify polygons by their properties, and discover volume of right rectangular prisms.* | | | |
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| • Classify polygons based on the number of sides.<br>• Describe attributes of a specific polygon. | • Classify polygons (triangles, quadrilaterals, pentagons, hexagons, and octagons) based on angles, side lengths, symmetry, congruence, and the presence or absence of parallel lines.<br>• Given an image of a right rectangular prism packed with unit cubes, determine the volume of the prism.<br>• Determine the volume of a right rectangular prism by using the height and the area of the base. | • Compare and contrast polygons (triangles, quadrilaterals, pentagons, hexagons, and octagons) based on angles, side lengths, symmetry, congruence, and the presence or absence of parallel lines.<br>• Analyze the properties of categories of shapes to draw conclusions about the properties of shapes in subcategories of the original categories.<br>• Determine the volume of a right rectangular prism by using the height and the area of the base to solve authentic mathematical problems. | • Explain how the volume of a right rectangular prism can be found by multiplying the height by the area of the base to solve authentic mathematical problems. |

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