Georgia Mathematics

Grade 5

Mathematical Practices

0 Display perseverance and patience in problem-solving. Demonstrate skills and strategies needed to succeed in mathematics, including critical thinking, reasoning, and effective collaboration and expression. Seek help and apply feedback. Set and monitor goals. 5.MP

- 0.1 Make sense of problems and persevere in solving them. 5.MP.1
- 0.2 Reason abstractly and quantitatively. 5.MP.2
- 0.3 Construct viable arguments and critique the reasoning of others. 5.MP.3
- 0.4 Model with mathematics. 5.MP.4
- 0.5 Use appropriate tools strategically. 5.MP.5
- 0.6 Attend to precision. 5.MP.6
- 0.7 Look for and make use of structure. 5.MP.7
- 0.8 Look for and express regularity in repeated reasoning. 5.MP.8

Numerical Reasoning

1 Use place value understanding to solve real-life, mathematical problems. 5.NR.1

- 1.1 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. 5.NR.1.1
- 1.2 Explain patterns in the placement of digits when multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10, up to 1 0 3 10^3. 5.NR.1.2

2 Multiply and divide multi-digit whole numbers to solve relevant, mathematical problems. 5.NR.2

- 2.1 Fluently multiply multi-digit (up to 3- digit by 2-digit) whole numbers to solve authentic problems. 5.NR.2.1
- 2.2 Fluently divide multi-digit whole numbers (up to 4-digit dividends and 2-digit divisors no greater than 25) to solve practical problems. 5.NR.2.2

3 Describe fractions and perform operations with fractions to solve relevant, mathematical problems using part-whole strategies and visual models. 5.NR.3

- 3.1 Explain the meaning of a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers. 5.NR.3.1
- 3.2 Compare and order up to three fractions with different numerators and/or different denominators by flexibly using a variety of tools and strategies. 5.NR.3.2
- 3.3 Model and solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators. 5.NR.3.3
- 3.4 Model and solve problems involving multiplication of a fraction and a whole number. 5.NR.3.4
- 3.5 Explain why multiplying a whole number by a fraction greater than one results in a product greater than the whole number, and why multiplying a whole number by a fraction less than one results in a product less than the whole number and multiplying a whole number by a fraction equal to one results in a product equal to the whole number. 5.NR.3.5
- 3.6 Model and solve problems involving division of a unit fraction by a whole number and a whole number by a unit fraction. 5.NR.3.6

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. 5.NR.4

- 4.1 Read and write decimal numbers to the thousandths place using base-ten numerals written in standard form and expanded form. 5.NR.4.1
- 4.2 Represent, compare, and order decimal numbers to the thousandths place based on the meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. 5.NR.4.2
- 4.3 Use place value understanding to round decimal numbers to the hundredths place. 5.NR.4.3
- 4.4 Solve problems involving addition and subtraction of decimal numbers to the hundredths place using a variety of strategies. 5.NR.4.4

5 Write, interpret, and evaluate numerical expressions within authentic problems. 5.NR.5

- 5.1 Write, interpret, and evaluate simple numerical expressions involving whole numbers with or without grouping symbols to represent actual situations. 5.NR.5.1

Patterning & Algebraic Reasoning

6 Solve relevant problems by creating and analyzing numerical patterns using the given rule(s). 5.PAR.6

- 6.1 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms by completing a table. 5.PAR.6.1
- 6.2 Represent problems by plotting ordered pairs and explain coordinate values of points in the first quadrant of the coordinate plane. 5.PAR.6.2

Measurement & Data Reasoning

7 Solve problems involving customary measurements, metric measurements, and time and analyze graphical displays of data to answer relevant questions. 5.MDR.7

- 7.1 Explore realistic problems involving different units of measurement, including distance, mass, weight, volume, and time. 5.MDR.7.1
- 7.2 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life. 5.MDR.7.2
- 7.3 Convert among units within the metric system and then apply these conversions to solve multistep, practical problems. 5.MDR.7.3
- 7.4 Convert among units within relative sizes of measurement units within the customary measurement system. 5.MDR.7.4

Geometric & Spatial Reasoning

8 Examine properties of polygons and rectangular prisms, classify polygons by their properties, and discover volume of right rectangular prisms. 5.GSR.8

- 8.1 Classify, compare, and contrast polygons based on properties. 5.GSR.8.1
- 8.2 Determine, through exploration and investigation, that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. 5.GSR.8.2
- 8.3 Investigate volume of right rectangular prisms by packing them with unit cubes without gaps or overlaps. Then, determine the total volume to solve problems. 5.GSR.8.3
- 8.4 Discover and explain how the volume of a right rectangular prism can be found by multiplying the area of the base times the height to solve authentic, mathematical problems. 5.GSR.8.4