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 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
- .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

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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

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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

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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

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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