South Carolina Mathematics

Grade 5

Mathematical Process Standards MPS

1 Problem Solving MPS.PS

1a Make sense of problems and persevere in solving them strategically. MPS.PS.1

2 Representation & Communication MPS.RC

2a Explain ideas using precise and contextually appropriate mathematical language, tools, and models. MPS.RC.1

3 Connections MPS.C

3a Demonstrate a deep and flexible conceptual understanding of mathematical ideas, operations, and relationships while making real-world connections. MPS.C.1

4 Analyze & Justify MPS.AJ

4a Use critical thinking skills to reason both abstractly and quantitatively. MPS.AJ.1

5 Structure & Patterns MPS.SP

5a Identify and apply regularity in repeated reasoning to make generalizations. MPS.SP.1

Data, Probability, and Statistical Reasoning 5.DPSR

1 Create questions, collect and analyze data, and communicate through multiple representations. 5.DPSR.1

1a Describe data by determining the range and mode, including whole numbers, fractional data, and decimal data. Limit fractions to denominators of 2, 3, 4, 5, 6, 8, and 10, and limit decimals to decimals through the hundredths place. 5.DPSR.1.1

1b Solve two-step, real-world situations using whole number and fractional data represented in tables, line graphs, scaled bar graphs, or dot plots. Limit fractions to denominators of 2, 3, 4, 5, 6, 8, 10, 12, 20, 25, 50, and 100. 5.DPSR.1.2

1c Analyze categorical and numerical data in graphical displays to make predictions or draw conclusions. Limit displays to tables, bar graphs, dot plots, line graphs, and circle graphs with scales of whole numbers, halves, fourths, and eighths. 5.DPSR.1.3

2 Represent the probability of simple events and determine possible outcomes. 5.DPSR.2

2a Represent the probability of a simple event as 0, a fraction, or 1. Limit fractions to denominators of 2, 3, 4, 5, 6, 8, 10, 20, and 25. 5.DPSR.2.1

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Measurement, Geometry, and Spatial Reasoning 5.MGSR

1 Solve area, perimeter, and volume problems in real-world and mathematical situations. 5.MGSR.1

- 1a Solve problems involving area and perimeter of composite figures by decomposing with rectangles. 5.MGSR.1.1
- 1b Estimate and measure the volume of a right rectangular prism with whole-number side lengths by filling it with unit cubes. 5.MGSR.1.2

2 Convert within a given measurement system and measure length. 5.MGSR.2

- 2a Given the unit equivalencies, convert within a single system of measurement from larger units to smaller units and smaller units to larger units for length, weight, liquid volume, and time. Use these conversions in solving real-world situations. Limit units to inches, feet, yards, ounces, pounds, fluid ounces, cups, pints, quarts, gallons, seconds, minutes, hours, milli-, centi-, kilo-, and.base units (grams, liters, meters) 5.MGSR.2.1
- 2b Estimate and measure lengths to the nearest eighth of an inch or nearest millimeter. 5.MGSR.2.2

3 Graph on the coordinate plane. 5.MGSR.3

- 3a Identify the origin, x-axis, and y-axis in the coordinate system. Write, plot, and label ordered pairs, including values in a function table, in the first quadrant of the coordinate plane. 5.MGSR.3.1
- 3b Represent mathematical and real-world situations by graphing, labeling, and interpreting points in the first quadrant of the coordinate plane. 5.MGSR.3.2

Numerical Reasoning 5.NR

1 Represent and compare numbers using relationships within the base ten number system. 5.NR.1.

- 1a Read, write, and represent multi-digit numbers from 0 to 999 with decimals to the thousandths place. Use pictorial, word, standard, or expanded form with fraction or decimal notation. 5.NR.1.1
- 1b Explain how the value of a digit in a multi-digit number changes if the digit moves one or more places to the left or right in the base ten system. Include decimals to the thousandths place. 5.NR.1.2
- 1c Round decimal numbers up to 999 with decimals to the thousandths place to the nearest hundredth, tenth, or whole number. 5.NR.1.3
- 1d Use patterns to explain the exponents when multiplying and dividing by powers of 10, not to exceed the thousandths place. 5.NR.1.4

2 Represent and compare fractions in multiple ways. 5.NR.2

- 2a Compare fractions and mixed numbers with like and unlike denominators of 2, 3, 4, 5, 6, 8, 10, 12, 20, 25, and 100 using equivalence to create a common denominator. Use the symbols for is less than (<), is more than (>), or is equal to (=) to record the comparison. 5.NR.2.1

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Patterns, Algebra, and Function Reasoning 5.PAFR

1 Use multiple representations to reason and solve problems involving operational properties of whole numbers and decimals. 5.PAFR.1

- 1a Use a strategy to compute the product of a two- or three-digit factor times a two-digit factor to include real-world situations. 5.PAFR.1.1
- 1b Use a strategy to compute the quotient of a multi-digit whole number dividend divided by a two-digit whole number divisor, with and without remainders, to include real-world situations. Limit the dividend to four digits. 5.PAFR.1.2
- 1c Use a strategy to compute sums and differences of decimal numbers to the hundredths. 5.PAFR.1.3
- 1d Use a strategy to multiply a one-digit whole number by a decimal to the hundredths and divide a decimal to the hundredths (dividend) by a one-digit whole number (divisor). Justify the calculation. 5.PAFR.1.4

2 Use multiple representations to reason and solve problems involving operational properties of fractions. 5.PAFR.2

- 2a Use a strategy to compute sums and differences of fractions and mixed numbers with unlike denominators and justify the sum or difference to include real-world situations. Limit denominators to 2, 3, 4, 5, 6, 8, 10, 12, 20, 25, 50, and 100.Use a strategy to multiply a fraction by a fraction or a fraction by a whole to include real-world situations. Limit denominators to 2, 3, 4, 5, 6, 8, 10, and 12. 5.PAFR.2.1
- 2b Use a strategy to multiply a fraction by a fraction or a fraction by a whole to include real-world situations. Limit denominators to 2, 3, 4, 5, 6, 8, 10, and 12. 5.PAFR.2.2
- 2c Interpret and represent division of a whole number dividend by a unit fraction divisor and a unit fraction dividend by a whole number divisor and apply to real-world situations. Limit denominators to 2, 3, 4, 5, 6, 8, 10, and 12. 5.PAFR.2.3

3 Use reasoning to represent and solve algebraic and numerical situations. 5.PAFR.3

- 3a Determine the least common multiple (LCM) to find a common denominator. Limit denominators to 2, 3, 4, 5, 6, 8, 10, 12, 20, 25, 50, and 100. 5.PAFR.3.1
- 3b Determine the greatest common factor (GCF) of two numbers both less than or equal to 50 to simplify a fraction into its standard form. 5.PAFR.3.2
- 3c Identify a rule that can describe the pattern from the data of a function table and write it as an expression. 5.PAFR.3.3
- 3d Translate a two-step real-world situation into a numerical expression using parentheses as grouping symbols and evaluate the expression. 5.PAFR.3.4