



Math+ 5 (Yellow)

This research-based course focuses on computational fluency, conceptual understanding, and problem-solving. The engaging course features new graphics, learning tools, and games; adaptive activities that help struggling students master concepts and skills before moving on; and more support for Learning Coaches to guide their students to success. This course for students in Grade 5 investigates whole numbers through practical situations in rounding, exponents and powers, and elementary number theory. Students begin addition and subtraction of integers and apply all of their work with rational numbers to problem-solving experiences. The study of algebra includes work with variables, solving equations and inequalities, using formulas within geometry and measurement, and work within the coordinate system. The study of geometry encompasses properties of lines, angles, two- and three-dimensional figures, and formal constructions and transformations.

SEMESTER 1

Unit 1: Whole Numbers and Powers

Students learn to estimate or calculate sums, differences, products, and quotients in a whole-number problem. They learn to compute a power using repeated multiplication, solve a problem that involves powers, determine the prime factorization of a composite number, and estimate sums and differences on a number line. They apply standard step-by-step approaches for addition, subtraction, multiplication, and division; use estimation to predict solutions to story problems; define and identify prime numbers; and write equations to demonstrate that whole numbers can be factored in multiple ways.

- Round Whole Numbers in Story Problems
- Estimate and Find Sums and Differences
- Estimate Sums and Differences (parts A and B)
- Estimate and Find Products and Quotients
- Estimate Products and Quotients (parts A and B)
- Bases and Exponents (parts A and B)
- Solve Problems Involving Powers
- Prime Factorization

Unit 2: Geometry

Students learn to identify, measure, and draw angles, perpendicular and parallel lines, rectangles, and triangles with appropriate math tools. They predict, describe, and perform transformations on two-dimensional shapes. Students learn about right, acute, obtuse, and straight angles; lines that are parallel, intersecting, and perpendicular; and different types of triangles and quadrilaterals. They learn the attributes of isosceles, equilateral, and right triangles, parallelograms, rectangles, and squares.

- Angles (parts A and B)
- Perpendicular and Parallel Lines
- Construct Triangles and Quadrilaterals
- Angles and Triangles (parts A and B)
- Angles in a Quadrilateral (parts A and B)
- Transformations (parts A and B)
- Draw 2-D Views of 3-D Objects

Unit 3: Fractions: Multiplication and Division

Students learn to multiply and divide fractions and explain a step-by-step approach. They simplify factors in fraction multiplication problems in which numerators and denominators have common factors. They multiply and divide fractions by whole numbers to solve story problems.

- Use Models to Multiply Fractions
- Understand Division of Fractions
- Multiply Fractions (parts A-C)
- Divide Fractions (parts A-C)

Unit 4: Problems Involving Fractions

Students learn to solve story problems involving addition, subtraction, multiplication, and division of fractions. They use objects or sketches to solve story problems that involve addition or subtraction of fractions. They solve and simplify problems that involve addition or subtraction of fractions with unlike denominators.

- Solve Fraction Story Problems (parts A-C)
- Add and Subtract Fractions (parts A-D)

Unit 5: Decimals: Addition and Subtraction

Students learn to round decimal numbers to any place through hundredths, estimate the sum or difference in problems involving decimal numbers, and solve addition or subtraction problems involving decimal numbers. They learn how to verify that the calculated result of a problem involving addition or subtraction of decimal numbers is reasonable. They solve story problems involving addition or subtraction of decimal numbers.

- Round Decimals to Hundredths
- Estimate Decimal Sums/Differences (parts A and B)
- Reasonable Answers and Decimal Problems
- Solve Story Problems with Decimals (parts A and B)

Unit 6: Decimals: Multiplication and Division

Students practice solving multiplication and division problems that involve decimal numbers and verify that the calculated results are reasonable.

- Estimate Decimal Products, Quotients (parts A-C)
- Multiply and Divide Decimals (parts A-C)
- Compute Decimal Story Problems (parts A-C)

Unit 7: Integers

Students learn to identify and represent decimal numbers, fractions, mixed numbers, and positive and negative integers on a number line. They solve problems involving addition or subtraction of integers and verify that the calculated result is reasonable. They identify relative positions of rational numbers on a number line, identify and place negative numbers on a number line, and estimate or calculate a sum or a difference in a whole-number problem.

- Explore Integers (parts A-C)
- Add and Subtract Integers (parts A-C)
- Integer Answers: Reasonable or Not?



Unit 8: Semester Review and Checkpoint

SEMESTER 2

Unit 9: Percents and Probability

Students learn to interpret a percent as a part of a hundred and that the decimal and percent equivalents for a common fraction represent the same value. They practice computing a given percent of whole numbers and representing probabilities as fractions, decimals, and percents. Students identify events that are dependent or independent, use probability to predict future events, and identify and systematically record the possible outcomes for simple events.

- Understand Percents (parts A and B)
- Find Equivalents to Percents (parts A-C)
- Percent of a Number (parts A-C)
- Represent Probabilities
- Identify Dependent and Independent Events
- Probability and Predictions

Unit 10: Algebra

Students learn to use letters to represent unknown values in expressions and equations. They learn to apply the distributive property in equations or expressions with variables. They evaluate simple algebraic expressions and use expressions or equations to answer questions about a problem.

- Understand Variables in Algebra (parts A and B)
- Use the Distributive Property (parts A and B)
- One Variable in Algebraic Expressions
- Expression and Equation Problems (parts A-C)

Unit 11: Coordinate Graphs

Students learn to identify and graph ordered pairs in all quadrants of a coordinate plane. They learn to use the situation presented in a problem to describe the meaning of each coordinate of an ordered pair displayed on a graph. They practice graphing and writing equations to solve problems that involve a linear function.

- Quadrants in the Coordinate Plane
- Ordered Pairs
- Graph or Write an Equation (parts A-D)

Unit 12: Perimeter, Area, and Volume

Students learn to use formulas to find the area of parallelograms and triangles and use appropriate units. They learn to use squares to approximate the area of an irregular shape. They learn to determine the volume of a solid figure and use a formula to find the perimeter of a rectangle or a square. They practice constructing cubes and rectangular boxes from two-dimensional patterns and determining the surface area. They learn to differentiate among appropriate units to measure perimeter, area, and volume.

- Perimeter of a Plane Figure
- Area of Parallelograms (parts A and B)
- Area of Triangles (parts A and B)

- Surface Area
- Area of Irregular Shapes
- Volume of Solid Figures (parts A and B)
- Units of Perimeter, Area, and Volume

Unit 13: Math Reasoning: Methods and Strategies

Students learn to prioritize and sequence the information in a story problem that involves multiplication or division of decimal numbers. They use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning in nonroutine or complex problems. Students learn to apply strategies and results from simple story problems involving fractions to more complex problems and how to break a multistep whole-number story problem or money problem into simpler parts. They learn how to identify and represent decimal numbers, fractions, mixed numbers, and positive and negative integers on a number line.

- Steps to Solve Story Problems (parts A and B)
- Break Down Multistep Problems
- Mathematical Reasoning Methods (parts A-C)
- Choose and Use Strategies (parts A-C)
- Solve Simple to Complex Problems (parts A and B)

Unit 14: Math Reasoning: Solutions

Students learn to express clear and logical solutions to equal-measures problems and rate problems. They learn to use estimation in addition and subtraction of fractions to verify whether calculated results are reasonable. They learn the advantages of exact solutions and approximate solutions to problems involving addition or subtraction of decimal numbers, and give answers to a specified degree of accuracy, such as hundredths. They learn to make precise calculations and use the situation presented in a problem involving decimal-number operations to check the validity of the result.

- Solve Problems Logically (parts A and B)
- Estimation and Reasonable Answers
- Decimal Solutions
- Reasonable Solutions

Unit 15: Data Analysis and Representation

Students learn to explain, compute, and compare the mean, median, or mode for a set of data. They practice organizing and displaying single-variable data in histograms and circle graphs and learn how to interpret information displayed in a graph or table. They learn how to use fractions and percents to compare different data sets. They learn which types of graphs are appropriate for various data sets.

- Mean, Median, or Mode
- Compare Mean, Median, and Mode
- Organize Data to Draw Histograms (parts A and B)
- Create Circle Graphs
- Interpret Graphs and Tables
- Fractions, Percents, and Graphs
- Choose an Appropriate Graph

Unit 16: Semester Review and Checkpoint