CURRICULUM GUIDE

Math – Grade 2

Providence Schools

QUARTER 1

Content students have to learn	Processes students will learn and use
Unit 1.1 – Relating Addition and Subtraction (12 days)	
• Understand and solve problems involving addition and subtraction of whole numbers using joining, separating, part-part-whole, and comparing. • Relate addition and subtraction as inverse operations. • Compose and decompose a number in different ways without changing its value. • Use expanded notation to represent a number from 0 to 199.	» Use models, known facts, and relationships to explain thinking. » Determine if the solution to a problem is reasonable. » Communicate through discussion, listening, and responding. » Link different representations to solve problems.
Unit 1.2 – Using Strategies for Addition to 18 (11 days)	
• Understand that numbers and expressions can be compared and related to other numbers and expressions in different ways. • Demonstrate understanding of place value, using composing or decomposing numbers, and expanded notation. • Use basic fact strategies (such as doubles and near-doubles) to solve calculations. • Apply commutative and associative properties of addition to solve problems. • Use the concept of equality to find the missing addend.	» Solve problems using a variety of strategies (e.g., draw a picture). » Demonstrate that a problem may be solved in more than one way. » Use models, known facts, properties, and relationships to explain thinking. » Communicate understanding of mathematics in writing and orally.
Unit 1.3 – Using Strategies for Subtraction to 18 (9 days)	
• Understand that numbers and expressions can be compared and related to other numbers using place value. • Apply the inverse relationship of addition and subtraction. • Demonstrate understanding of equality by finding a missing addend or subtrahend. • Connect words and numerals to the quantities they represent.	» Solve problems using a variety of strategies (e.g., apply the answer from the first question to the second question). » Demonstrate that a problem may be solved in more than one way. » Use models, known facts, properties, and relationships to explain thinking. » Communicate through discussion, listening, responding, and explaining.
Unit 1.4 – Using Place Value to 100 (13 days)	
• Apply the base ten numeration system for recording numbers using digits 0–9, groups of ten, and place value. • Demonstrate how numbers can be classified and represented in different ways. • Use place value to compare and order numbers. • Understand that some numbers can be divided into two equal parts (even numbers) and some cannot (odd numbers). • Apply the concept of equivalency in composing or decomposing numbers and in expanded notation. • Identify and extend number patterns.	» Solve problems using a variety of strategies and manipulatives. » Use patterns and relationships to analyze mathematical situations. » Communicate understanding of mathematics. » Create and use representations and models to communicate mathematical ideas and solve problems.

QUARTER 2

Content students have to learn	Processes students will learn and use
Unit 2.1 – Counting Collections of Coins Greater Than One Dollar (10 days)	
• Apply the concept of equivalency when representing the same amount of money using different combinations of coins and bills. • Determine the value of a collection of coins (up to $1.99). • Solve problems by generating a list of outcomes and organizing that list in a systematic way.	» Solve problems using a variety of strategies (e.g., organized lists, tables, counting techniques). » Demonstrate that a problem may be solved in more than one way. » Use mathematical reasoning and proof and be able to use models, known facts, properties, and relationships to explain thinking.
Unit 2.2 – Using Mental Addition to Add Two 2-Digit Numbers (8 days)	
• Apply the concept of equivalence to simplify calculations to find sums in mental math. • Demonstrate conceptual understanding of mathematical operations involving addition of whole numbers. • Describe patterns and relationships among numbers that repeat in predictable ways. • Solve problems by identifying a value that will make an open sentence true.	» Solve problems using a variety of strategies. » Demonstrate that a problem may be solved in more than one way. » Identify the missing information needed to find a solution to a given problem. » Communicate understanding of mathematics.
Unit 2.3 – Using Mental Subtraction of Two-Digit Numbers Less Than 100 (7 days)	
• Apply the concept of equivalence to simplify calculations to find differences and sums in mental math. • Describe patterns and relationships among numbers that repeat in predictable ways. • Apply understanding of the base ten number system when adding and subtracting multiples of ten in mental math. • Use the concept of equality to find missing addends or subtrahends.	» Solve problems using a variety of strategies. » Demonstrate that a problem may be solved in more than one way. » Identify the missing information needed to find a solution to a given problem. » Communicate understanding of mathematics. » Think critically to identify unnecessary information and focus on needed information for problem situations.
Unit 2.4 – Adding Whole Numbers with Regrouping (9 days)	
• Demonstrate conceptual understanding of problem solving using multiple strategies for addition. • Add whole numbers with and without regrouping. • Apply commutative and associative properties for addition to solve problems. • Sequence numbers by extending patterns. • Use equality to find the value to make an open sentence true.	» Solve problems using a variety of strategies. » Demonstrate that a problem may be solved in more than one way. » Link concrete representation to the standard algorithm. » Draw pictures and use objects to illustrate conceptual understanding.

Content students have to learn	Processes students will learn and use
Unit 2.5 – Subtracting Whole Numbers with Regrouping (9 days)	
• Apply understanding of the base ten number system when adding and subtracting. • Demonstrate conceptual understanding of using multiple strategies for addition and subtraction to solve problems. • Connect addition and subtraction as inverse operations. • Use the concept of equality to find a missing addend or subtrahend.	» Solve problems using a variety of strategies (e.g., apply an answer from one question to solve a second question). » Demonstrate that a problem may be solved in more than one way. » Link concrete representation to the standard algorithm. » Justify solution processes and answers (e.g., "I chose this strategy to solve the problem because . . .").

QUARTER 3

Content students have to learn	Processes students will learn and use
Unit 3.1 – Using Addition and Subtraction Strategies to Solve Two-Digit Problems (16 days)	
• Demonstrate conceptual understanding of solving addition and subtraction problems using multiple strategies. • Estimate the number in a set (up to 50) appropriately. • Demonstrate understanding of monetary value by adding coins up to $1.99. • Make change from $1.00 or less. • Use place value to apply equivalency in composing or decomposing numbers and in expanded notation. • Use mental math to add and subtract multiples of 10.	» Solve problems using a variety of strategies (e.g., using reasoning and try, check, revise). » Demonstrate that a problem may be solved in more than one way. » Link conceptual and procedural knowledge. » Use reasoning when problem solving. » Recognize and use mathematics in daily life.
Unit 3.2 – Identifying 2-D and 3-D Geometry (8 days)	
• Sort or classify polygons by their properties, attributes, composition, or decomposition. • Use lines of symmetry to demonstrate congruent parts within a shape. • Create, use, and link different representations to solve problems.	» Draw pictures and use objects to illustrate mathematical concepts. » Identify examples of geometry in nature, art, and architecture.
Unit 3.3 – Using Fractions to Represent Part of a Region or a Set (9 days)	
• Understand that a region can be divided into equal-sized parts in different ways. • Use benchmark fractions to identify and compare fractions. • Use models, explanations, or other representations to identify and describe part of a set. • Apply the concept of equivalency in composing or decomposing numbers.	» Solve problems using a variety of strategies (e.g., act it out/use objects). » Demonstrate that a problem may be solved in more than one way. » Use mathematical reasoning and proof and be able to use models and known facts to explain thinking. » Use representations to explain thinking.
Unit 3.4 – Measuring Length and Area (12 days)	
• Demonstrate understanding of whole numbers using place value to add or subtract. • Make measurement estimates and connect nonstandard measurement to standard measurement. • Make conversions within measurement systems. • Use a ruler to measure appropriately in inches and centimeters. • Describe and measure perimeter and area.	» Solve problems using a variety of strategies. » Demonstrate that a problem may be solved in more than one way. » Draw pictures and use objects to illustrate mathematical concepts.

QUARTER 4

Content students have to learn	Processes students will learn and use
Unit 4.1 – Measuring Time and Temperature (9 days)	
• Tell time in 15-minute intervals. • Demonstrate the knowledge that there are 60 minutes in 1 hour. • Read a thermometer to 1 degree using Fahrenheit and Celsius scales. • Understand that a calendar shows days, weeks, and months. • Apply concepts of equivalency in composing or decomposing numbers.	» Solve increasingly complex problems (e.g., multiple-step problems with "hidden" questions) using a variety of strategies. » Recognize, explore, and develop math connections to other curriculum areas and in daily life. » Communicate understanding of mathematics.
Unit 4.2 – Using Data in Graphs and Probability (16 days)	
• Analyze and interpret various representations of data. • Analyze patterns, trends, or distributions in data using *more, less,* or *equal.* • Describe the likelihood of an event occurring. • Name locations on coordinate grids. • Compare whole numbers using benchmark numbers. • Use models, explanations, or other representations to demonstrate understanding of numbers in expanded notation.	» Solve problems using a variety of strategies. » Link different representations of data. » Recognize and use mathematics in daily life. » Communicate understanding of mathematics.
Unit 4.3 – Using Place Value and Patterns with Numbers to 1,000 (12 days)	
• Demonstrate understanding of whole numbers using place value in expanded notation. • Demonstrate understanding of the magnitude of numbers by using *10 more, 10 less, 100 more,* or *100 less.* • Identify and apply number patterns in the base ten number system. • Compare and order whole numbers up to 199.	» Solve problems using a variety of strategies, including looking for patterns. » Demonstrate that a problem may be solved in more than one way. » Explain thought processes in problem-solving situations.
Unit 4.4 – Using Strategies to Add and Subtract Three-Digit Numbers (9 days)	
• Apply the concept of equivalency in composing or decomposing numbers. • Demonstrate conceptual understanding of solving addition and subtraction problems using multiple strategies. • Connect addition and subtraction as related (inverse) operations. • Estimate to approximate sums and differences by using rounding to transform calculations into simpler ones. • Demonstrate flexibility when mentally adding and subtracting. • Analyze data in a variety of contexts to formulate conclusions.	» Solve problems using a variety of strategies (e.g., making, reading, and analyzing a graph). » Demonstrate that a problem may be solved in more than one way. » Link conceptual and procedural knowledge. » Communicate understanding of mathematics.

Providence Schools

797 Westminster Street
Providence, RI 02903
www.providenceschools.org/guides