

CURRICULUM

GUIDE

Math – Kindergarten

Providence
Schools

QUARTER I

Content students have to learn

Processes students will learn and use

Unit 1.1 – Sorting and Classifying by Attributes (13 days)

- Sort and classify objects and polygons by one or two attributes.
- Use attributes to compare objects.
- Demonstrate understanding of the magnitude of numbers using one-to-one correspondence.
- Demonstrate understanding of monetary value for coins.
- Use mental math to add or subtract 1 more or 1 less.
- Use a calendar to relate time and patterns.

- » Use models, properties, and relationships to explain thinking.
- » Demonstrate mathematical communication through discussion individually and in groups.
- » Explain conclusions, thought processes, and strategies in problem-solving situations.
- » Justify answers.
- » Recognize and use mathematics in other curriculum areas.

Unit 1.2 – Describing Location and Position (10 days)

- Use positional words to locate where an object is in the environment.
- Develop understanding of spatial relationships using location and position.
- Develop understanding that objects can be related and compared to other objects in different ways.
- Use mental math to add or subtract 1 more or 1 less.

- » Solve problems using objects to act out the actions in a problem.
- » Use models and relationships to explain thinking.
- » Justify solution processes and answers (e.g., “I chose this method to solve the problem because ...”).
- » Use representations to model and interpret physical phenomena.

Unit 1.3 – Extending and Creating Patterns (8 days)

- Develop understanding that patterns are made up of units that repeat.
- Develop understanding that patterns can be alike or different depending on how they repeat.
- Describe and extend growing patterns where there is a predictable change from one part to the next.
- Use the same set of objects to create different patterns.
- Use mental math to add or subtract 1 more or 1 less.

- » Solve problems by identifying elements that repeat in a predictable way.
- » Use patterns and relationships to analyze mathematical situations.
- » Use models to explain thinking.

Unit 1.4 – Counting and Comparing 0 to 5 (13 days)

- Develop the understanding that counting tells how many are in a set no matter in which order the objects are counted (i.e., the last number said when counting a set is the total, and counting is cumulative).
- Develop understanding that there is a unique symbol that goes with each number word.
- Understand that 0 is a number and that it tells how many objects there are when there are none.
- Decompose and recompose numbers to demonstrate that there is more than one way to show a number.

- » Solve problems by generating an organized list.
- » Generate a list of outcomes and organize that list in a systematic way so all outcomes are accounted for.
- » Verify and interpret results with respect to the original problem.
- » Determine if the solution to a problem is reasonable.
- » Discuss, illustrate, and act out problems about mathematical concepts and relationships.

QUARTER I

Content students have to learn

- Demonstrate conceptual understanding of equivalency by comparing two groups of objects and know that if the numbers of objects match, the groups are equal (have the same number of objects).
- Develop understanding that *1 more than*, *2 more than*, *1 fewer than*, or *2 fewer than* express the relationship between two groups of objects.
- Make and revise estimates of up to 20 objects.

Processes students will learn and use

- » Draw pictures and use objects to illustrate mathematical concepts.
- » Use models and relationships to explain thinking.
- » Draw conclusions using inductive reasoning.

Content students have to learn

Processes students will learn and use

**Unit 2.1 – Composing and Decomposing 6 to 10
(13 days)**

- Develop understanding that counting tells how many are in a set no matter in which order the objects are counted.
- Develop understanding that the last number said when counting a set is the total—counting is cumulative.
- Develop understanding that there is a unique symbol that goes with each number word.
- Develop understanding that there is more than one way to show a number.
- Develop understanding that numbers can be shown by a unique point on the number line.
- Develop understanding that the distance between any two consecutive whole numbers on a given number line is always the same.
- Develop understanding that *1 more than*, *2 more than*, *1 fewer than*, or *2 fewer than* express the relationship between two groups of objects.
- Make and revise estimates of up to 10 objects.
- Mentally add 1 more or 1 less.

- » Solve problems by making, reading, and analyzing a graph.
- » Create and use age-appropriate representations to organize, record, and communicate mathematical ideas.

**Unit 2.2 – Comparing Numbers to 10
(9 days)**

- Compare a pair of numbers where the number that shows more is greater and the number that shows fewer is less.
- Use 5 as a benchmark to compare numbers.
- Use 10 as a benchmark to compare numbers.
- Compare relationships between numbers using *1 more*, *2 more*, *1 fewer*, and *2 fewer*.
- Make and revise estimates of up to 10 objects.

- » Use objects to act out the actions in a problem.
- » Identify mathematical situations occurring in literature for children.
- » Recognize and use mathematics in their daily lives (e.g., graphs, tables, maps).

**Unit 2.3 – Using 2-D and 3-D Geometry
(11 days)**

- Identify objects that are the same and different, using at least one measurable or nonmeasurable attribute.
- Compare, describe, sort, and classify squares and rectangles.
- Identify, describe, sort, and classify circles and triangles.
- Recognize shapes that can be combined to make other shapes.
- Develop understanding that *1 more than*, *2 more than*, *1 fewer than*, or *2 fewer than* express the relationship between two groups of objects.
- Make and revise estimates of up to 10 objects.

- » Use models, properties, and relationships to explain their thinking.
- » Draw pictures and use objects to illustrate mathematical concepts.
- » Identify examples of geometry in nature, art, and architecture.

Content students have to learn

Processes students will learn and use

Unit 2.4 – Using Fractions to Describe Equal Parts and Using Words to Identify Ordinal Positions (10 days)

- Understand $\frac{1}{2}$ as a “fair share.”
 - Divide a region or set into equal-sized parts in different ways.
 - Use ordinal numbers to tell order.
 - Count to find positions/order in a row.
 - Develop understanding that *1 more than*, *2 more than*, *1 fewer than*, or *2 fewer than* express the relationship between two groups of objects.
 - Make and revise estimates of up to 12 objects.
- » Solve problems by using objects to act out the actions in the problem.
 - » Solve a problem by using a picture or diagram.

Content students have to learn

Processes students will learn and use

Unit 3.1 – Measuring and Comparing Length, Weight, and Capacity (12 days)

- Use attributes of measurement to compare and order objects in the environment.
- Develop the understanding that objects can be compared and ordered by length, capacity, and weight.
- Recognize that objects come in different sizes.
- Use nonstandard units to measure length, capacity, and weight.
- Describe capacity as a measure of the amount a container can hold.
- Describe the weight of an object as a measure of how heavy the object is.
- Develop the understanding that *1 more than*, *2 more than*, *1 fewer than*, or *2 fewer than* express the relationship between two groups of objects.
- Make and revise estimates of up to 12 objects.

- » Solve problems using a guess-and-check strategy.
- » Verify and interpret results with respect to the original problem.
- » Determine if the solution to a problem is reasonable.
- » Explain conclusions, thought processes, and strategies in problem-solving situations.
- » Use models, known facts, properties, and relationships to explain thinking.

Unit 3.2 – Adding Whole Numbers to 9 (10 days)

- Use joining parts to make a whole.
- Show joining groups using a plus sign in an addition expression.
- Write number sentences using + and = to show parts of a whole.
- Compose and decompose whole numbers without changing the value.
- Develop understanding that *1 more than*, *2 more than*, *1 fewer than*, or *2 fewer than* express the relationship between two groups of objects.
- Make and revise estimates of up to 12 objects.

- » Solve problems by showing information in the problem using a picture or diagram.
- » Create and use age-level-appropriate representations to organize, record, and communicate mathematical ideas.

Unit 3.3 – Subtracting Whole Numbers to 9 (9 days)

- Determine how many are left when some objects in a group are taken away.
- Compare two groups to find how many more or fewer.
- Use the minus sign (–) to represent take away situations when recording subtraction.
- Write and solve subtraction sentences to represent take away situations.
- Develop the understanding that *1 more than*, *2 more than*, *1 fewer than*, or *2 fewer than* express the relationship between two groups of objects.
- Make and revise estimates of up to 12 objects.

- » Demonstrate that a problem may be solved in more than one way.
- » Act out number stories to help subtract and solve problems.

QUARTER 3

Content students have to learn

Processes students will learn and use

Unit 3.4 – Counting to 20 and Using Number Patterns to 100 (12 days)

- Identify the unique symbol that goes with each number word.
 - Identify even or odd groups of numbers by dividing them into two equal/unequal groups.
 - Count, write missing numbers, and look for counting patterns on a hundreds chart.
 - Use patterns to count objects more easily.
 - Count by 10s to 50 and identify the oral name of each decade number.
 - Develop the understanding that *1 more than*, *2 more than*, *1 fewer than*, or *2 fewer than* express the relationship between two groups of objects.
 - Make and revise estimates of up to 20 objects.
- » Solve problems by identifying elements that repeat in a predictable way.
 - » Use patterns and relationships to analyze mathematical situations.

Content students have to learn

Processes students will learn and use

Unit 4.1 – Counting and Comparing Money Through 10 Cents (9 days)

- Demonstrate the conceptual understanding that specific coins and bills have unique values.
- Recognize that the size of a coin does not indicate its value.
- Apply concepts of equivalence in composing and decomposing monetary values using coins and bills.
- Demonstrate the understanding that money amounts can be counted and compared.
- Develop an understanding that *1 more than*, *2 more than*, *1 fewer than*, or *2 fewer than* express the relationship between two groups of objects.
- Make and revise estimates of up to 20 objects.

- » Use patterns and relationships to analyze mathematical situations.
- » Use manipulatives as tools to solve problems.
- » Use objects to act out the actions in the problem.

Unit 4.2 – Measuring Time Using Order of the Day, Duration, and Clocks (11 days)

- Understand a clock as a tool for measuring time.
- Identify the order of the day: morning, afternoon, evening.
- Decide the order in which a sequence of events occurs.
- Recognize the numbers 1-12 on a clock face.
- Understand that some activities take more time than others and some events always take place at the same time.
- Develop understanding that *1 more than*, *2 more than*, *1 fewer than*, or *2 fewer than* express the relationship between two groups of objects.
- Make and revise estimates of up to 20 objects.

- » Use logical reasoning to solve problems.
- » Demonstrate that a problem may be solved in more than one way.
- » Draw pictures and use objects to illustrate mathematical concepts.
- » Determine if the solution of a problem is reasonable.
- » Link different representations.
- » Justify solution processes and answers (e.g., “I chose this method to solve the problem because ...”).

Unit 4.3 – Using a Calendar to Tell Time (12 days)

- Understand that parts of the year can be described using months.
- Name the months and seasons of the year.
- Develop understanding that all weeks have seven days and each day/each week is the same length.
- Identify and order the days of the week.
- Understand that the days in a month are numbered consecutively using the counting numbers.
- Identify the days in relation to each other (yesterday, today, and tomorrow).
- Develop the understanding that temperature can be described using numbers.
- Develop understanding that *1 more than*, *2 more than*, *1 fewer than*, or *2 fewer than* express the relationship between two groups of objects.
- Make and revise estimates of up to 20 objects.

- » Use a picture to help understand and solve a problem.
- » Determine if the solution of a problem is reasonable.
- » Exhibit confidence in the ability to solve problems independently and in groups.
- » Use models, known facts, properties, and relationships to explain thinking.
- » Justify solution processes and answers (e.g., “I chose this method to solve the problem because ...”).

Content students have to learn

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**Unit 4.4 – Making and Reading Graphs
(11 days)**

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| <ul style="list-style-type: none"> • Compare two groups of objects and determine if they have the same number of objects or if one has more and one has less. • Use different types of graphs to answer questions. • Apply understanding that <i>1 more than</i>, <i>2 more than</i>, <i>1 fewer than</i>, or <i>2 fewer than</i> express the relationship between two groups of objects. • Make estimates and revise as objects are being counted. | <ul style="list-style-type: none"> » Solve problems by making, reading, and analyzing graphs. » Draw conclusions using inductive reasoning. » Create and use age-level-appropriate representations to organize, record, and communicate mathematical ideas (e.g., students should recognize the relationship among seven counters, seven tally marks, and the symbol 7). » Use conventional and self-generated (invented) representations and connect them. |
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