

CURRICULUM

GUIDE

Math - Kindergarten

Providence
Schools

Background

Providence Schools teachers and administrators worked collaboratively with consultants from the Charles A. Dana Center at the University of Texas at Austin to develop the mathematics and science curriculum frameworks. The curriculum frameworks encompass two critical questions:

- Content Standards that establish clearly defined expectations for all students, helping to answer the question, **What do students have to learn?**
- Performance Standards that determine performance expectations for content standards, helping to answer the question, **How well do the students have to learn it?**

The curriculum framework provides a work plan that directs the instruction delivered in every classroom in every school in the district. Instruction—the way the curriculum is presented to students—will focus on the needs of students.

Purpose and Use of Curriculum Guides

Curriculum Guides for the curriculum for each grade and subject outline the approximate number of days that each unit in the curriculum will be taught; describe the content to be learned; and list the essential questions that students should be able to answer by the end of the unit.

Parents should become familiar with the Curriculum Guides. You should know when your child is being taught different topics. You should also know the essential questions that your child should be able to answer by the end of each unit.

It is important that you understand that you do not have to be familiar with the content that your child is learning in order to help them with their studies. There are basic questions that you can ask to determine if your child understands the content.

Ask your child what she is learning in each subject
*Does she understand the topic? Is the unit exciting or boring?
What specifically does she like or dislike about the topic?
Does she understand how the topic relates to the real world?*

You know your child better than anyone. You will be able to tell if she or he is benefiting from the instruction and understanding the content of the material by the way they answer you. Speak to your child's teacher if you suspect there is a problem.

Ask your child about his assignments

What is the required work? Has he finished the work on time? Is he having difficulty? If he is having difficulty, why?

Encourage your child to talk to her teachers if she is having difficulty understanding a concept or completing an assignment. If your child continues to experience difficulty, speak to the teacher yourself so that the two of you can work together to support your child.

Even if you do not understand the content that your child is learning, the fact that you are showing interest in his or her school work and believe that it is important that he or she does well sends a powerful message.

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QUARTER I

Content students will be learning

Essential questions students should be able to answer by end of unit

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.

- » How are these objects alike?
- » What makes these objects different?
- » How can you sort these objects in a different way?
- » What words can you use to describe these objects?

Unit 1.2 - Describing Location and Position (10 days)

- Use positional words to locate and find where an object is found 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.

- » How can you describe where this object is?
- » How can acting out this problem help you solve it?
- » What is your strategy to find 1 more? 1 less?

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.

- » What could be the next object in this pattern?
- » What could be the fifth [shape, color, letter, etc.] in this pattern?
- » How can you tell what comes next in the pattern?
- » How can you tell if two patterns are alike or different?
- » How can you show this pattern in a different way?

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 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.
- 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).

- » Why is the last number you say important when counting a set of objects?
- » What number would you use to show no objects, or none?
- » How can you show the same number of objects in different ways? (What's another way you can show ___?)
- » How does one-to-one correspondence help you compare two sets of objects?
- » What do you need to find out?

QUARTERS 1 & 2

Content students will be learning

Essential questions students should be able to answer by end of unit

UNIT 1.4 - COUNTING AND COMPARING 0 TO 5 (CONTINUED)

- 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.

UNIT 1.4 - COUNTING AND COMPARING 0 TO 5 (CONTINUED)

- » How can you use counters to solve the problem?
- » How can you use a list to solve a problem?
- » How does making a list help you keep track of the ways to make a number?

QUARTER 2

QUARTER 2

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.

- » How can you be sure you are counting correctly?
- » How can you show the number in a different way?
- » What does the last number you say when counting a set of objects tell you?
- » How can you use a graph to solve a problem?
- » How can you use a number line to order numbers?

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.

- » Which number is greater/less?
- » Which group has more/fewer?
- » How can you use 5 or 10 as a benchmark to compare numbers?
- » How can you find out which group has more/less objects?
- » How can we find out if a number is greater/less than 5 or 10?

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.

- » How can you tell if a shape is a circle / triangle / rectangle / square?
- » What kinds of figures roll / slide / stack?
- » How can you use smaller shapes to make larger shapes?

QUARTERS 2 & 3

Content students will be learning

Essential questions students should be able to answer by end of unit

UNIT 2.3 - USING 2-D AND 3-D GEOMETRY (CONTINUED)

- 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.

UNIT 2.3 - USING 2-D AND 3-D GEOMETRY (CONTINUED)

- » How can you use objects to solve a problem?

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.

- » How can you be sure two parts are equal?
- » How do you know if a whole is separated into halves?
- » How can you describe the order of ___ things in a row?
- » How can you show equal parts to solve a problem?
- » How do you draw a picture to show order?

QUARTER 3

QUARTER 3

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 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 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.

- » How can you compare and order the length of three objects?
- » How can you use [connecting cubes, string, yarn, ribbon, paper clips, etc.] to measure length?
- » Which container holds more? How can we find out?
- » How can you use connecting cubes and a balance to find out how much something weighs?
- » How do you make an estimate to solve a problem?
- » How do you check your estimate?
- » How can you tell a story problem while you act it out?
- » How can you draw a picture of the problem?

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.

- » How does moving two groups of objects together help you know how many objects there are in all?
- » What do you find out when you join two groups, or two parts of a whole?

QUARTERS 3 & 4

Content students will be learning

Essential questions students should be able to answer by end of unit

UNIT 3.2 - ADDING WHOLE NUMBERS TO 9 (CONTINUED)

- 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.

UNIT 3.2 - ADDING WHOLE NUMBERS TO 9 (CONTINUED)

- » What symbols can you write to show joining two groups and finding the sum?
- » What does an addition sentence tell you?
- » What do you draw to solve a problem about joining groups?

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 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.

- » How does moving an object, or objects, to the side of a group of objects help you know how many objects are left?
- » How does matching one object in one group with another object in another group help you find out about the relationship between the two groups?
- » What is another way you could have solved this subtraction problem?
- » How can you act out a number story about the part of the group leaving?

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 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.

- » How can you represent the number of objects you counted?
- » How can you check to know you are correct?
- » How can you tell whether a number is odd or even?
- » What numbers are repeated in each column of the hundreds chart as you count?
- » When you count by 2s, 5s, and 10s on a hundreds chart, what patterns do you see?
- » Why is it easier to count objects that are arranged in groups of 2 or 5?
- » How can you use a pattern to solve a problem?

QUARTER 4

QUARTER 4

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.

- » How can you find the value of a group of [pennies, nickels, dimes]?
- » How can you use different coins to represent [5 cents, 7 cents, 10 cents, etc.]?
- » How can you use coins to solve a problem?

QUARTER 4 (CONTINUED)

Content students will be learning

Essential questions students should be able to answer by end of unit

UNIT 4.1 - COUNTING AND COMPARING MONEY THROUGH 10 CENTS (CONTINUED)

- 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.

UNIT 4.1 - COUNTING AND COMPARING MONEY THROUGH 10 CENTS (CONTINUED)

- » How could you tell a story problem while you act it out?

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.

- » What do you do in the morning? Afternoon? Evening?
- » What happened [first, next, last, before, after]?
- » What is a clock used for?
- » What will help you solve this problem?
- » What can you draw to show your thinking?

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.

- » How can days help you measure time? Months?
- » How are yesterday, today, and tomorrow related?
- » What are some things you wear when it is cold? When it is hot?
- » How can you tell if your answer makes sense?

Unit 4.4 - Making and Reading Graphs (11 days)

- 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.

- » Which group has [more, fewer, as many as]?
- » How do you know which group has [more, fewer, as many as] than the other group?
- » What does this graph tell us?

QUARTER 4 (CONTINUED)

Content students will be learning

Essential questions students should be able to answer by end of unit

UNIT 4.4 - MAKING AND READING GRAPHS (CONTINUED)

- Apply understanding that *1 more than, 2 more than, 1 fewer than, or 2 fewer than* express the relationship between two groups of objects.
- Make estimates and revise as objects are being counted.

UNIT 4.4 - MAKING AND READING GRAPHS (CONTINUED)

- » If I have two things, how can I find out which one students in our class like better?
- » How does making a graph help you solve this problem?
- » How can you use a graph to compare information about things?