

Unit Overviews K-2

Unit Overview

Instructional Focus Document Kindergarten



Unit one – Introducing & Developing Numbers 0-5 and reciting numbers to 30 (15 – Days)

Introduction

This unit bundles student expectations that address the foundational skills for developing an understanding of numbers 0 – 5, counting forward and backward 1 – 5, cardinality, subitizing, conservation of set, comparing numbers and sets of objects using comparative language, and generating numbers or set of objects less than or greater than a given amount. This unit also includes the student expectation that addresses reciting numbers up to 30 by ones beginning with any number. According to the Texas Education Agency, mathematical process standards including application, a problem-solving model, tools and techniques, communication, representations, relationships, and justifications should be integrated (when applicable) with content knowledge and skills so that students are prepared to use mathematics in everyday life, society, and the workplace.

During this Unit

Students are introduced to the numbers 0 – 5. They use sets of objects up to 5 to develop an understanding of the concepts of cardinality, meaning that the last number said when counting a set of objects names the number of objects; hierarchical inclusion, meaning each prior number in the counting sequence is included in the set as the set increases; and conservation of set, meaning if the same number of objects are counted and then rearranged, the quantity of objects in the set does not change. Students apply cardinality, hierarchical inclusion, and conservation of set as they begin to grasp the true meaning of numbers. Students count forward and backward to 5 with and without objects, as well as read, write, and represent the numbers. Students also compose and decompose numbers up to 5 using objects and pictures, which parallels the development of subitizing, meaning instantly recognizing the number being represented by a small quantity of objects in random and organized arrangements. Students apply all of these skills as they consider magnitude, or relative size, to compare sets of objects up to 5 and generate a set of objects and pictures that is more than, less than, or equal to a given number. Students use comparative language to describe the comparison of numbers represented using objects, pictures, or numerals. When given a number up to 5, students are expected to generate a number that is one more than or one less than a given number. Along with the investigation of number and quantity, students are expected to recite numbers up to 30 by tens beginning with 10 and by ones beginning with any number. Practice with rote reciting of numbers and learning the correct sequence of numbers aids in developing the foundation for meaningful counting strategies.

Other considerations: Reference the [Mathematics Kindergarten Instructional Considerations to Activate Purposeful Planning \(ICAPP\) Resource](#).

After this Unit

In Unit 03, students will continue to develop the foundations of number as they extend their number set to include 6 to 10 and extend reciting numbers up to 60 by tens beginning with 10 and by ones beginning with any number.

Additional Notes

In Kindergarten, reciting numbers up to 30, reading, writing, and representing numbers, cardinality, subitizing, and comparing and describing sets of objects are foundational concepts that are subsumed within the Kindergarten *Texas Response to Curriculum Focal Points (TxRCFP)*: Developing an understanding of whole numbers. Counting forward and backward with and without objects, composing and decomposing numbers, and generating numbers and sets of objects that are more than, less than, or equal to an original quantity are also subsumed within the Kindergarten *Texas Response to Curriculum Focal Points (TxRCFP)*: Developing an understanding of whole numbers as well as the Kindergarten *Texas Response to Curriculum Focal Points (TxRCFP)*: Developing an understanding of addition and subtraction. This unit is supporting the development of the *Texas College and Career Readiness Standards (TxCCRS)*: I. Numeric Reasoning A1, A2, B1, B2; II. Algebraic Reasoning D1, D2; V. Statistical Reasoning A1, C2; VII. Problem Solving and Reasoning A1, A2, A3, A4, A5, B1, C1, D1, D2; VIII. Communication and Representation A1, A2, A3, B1, B2, C1, C2, C3; IX. Connections A1, A2, B1, B2, B3.

Unit Overviews K-2

Unit Overview

Instructional Focus Document First Grade



Unit one – Numeracy using data analysis – 8 Days



Introduction

This unit bundles student expectations that address collecting, sorting, and organizing data, and representing the data using picture and bar-type graphs in order to draw conclusions, generate questions, and answer questions from the data while demonstrating numeracy skills. According to the Texas Education Agency, mathematical process standards including application, a problem-solving model, tools and techniques, communication, representations, relationships, and justifications should be integrated (when applicable) with content knowledge and skills so that students are prepared to use mathematics in everyday life, society, and the workplace.

Prior to this Unit

In Kindergarten, students developed an understanding of numbers up to 20, including the comparison of numbers up to 20. Kindergarten students solved problems involving addition and subtraction of whole numbers within 10. Kindergarten students also collected, sorted, and organized data to create real-object graphs and picture graphs. Students compared and contrasted the different data representations. Students drew conclusions to answer questions using information from the graphs, including identifying the quantities represented in each category and comparing the value of each category as more than, less than, or the same as another category.

During this Unit

Students begin the year demonstrating numeracy using authentic data analysis experiences. Students explore collecting, sorting, and organizing data in up to three categories using previously learned data analysis skills. They use the categorical data collected from surveys or collections of objects to create tally charts, T-charts, picture graphs, and bar-type graphs. Picture graphs and bar-type graphs are designed to represent data involving small quantities since the intervals of these graphs are one-to-one. Recall, students have prior experiences with picture graphs, but bar-type graphs are a new representation for Grade 1. After creating each representation, students compare and contrast the different data representations. Students examine the data to draw conclusions demonstrating their knowledge of number from Kindergarten by determining the value of each category using one-to-one correspondence and comparing data values up to 20 as more than, less than, or equal to. Students extend drawing conclusions by comparing the values of each category and counting on to determine how many more or how many less. Students also draw conclusions to answer questions that involve determining the necessary operation, addition and subtraction, needed to answer a question among the categories with data values within 10 and performing the necessary operation to determine the solution. Students are expected to generate their own questions along with solutions regarding the data represented in the graphs. Although the unit is designed around Grade 1 standards involving data analysis, the intent of the unit is to provide valuable teacher insight into students' understanding of numeracy, allowing an opportunity for teachers to reinforce the necessary numeracy skills in preparation for upcoming units that involving place value.

Other considerations: Reference the [Mathematics Grade 1 Instructional Considerations to Activate Purposeful Planning \(ICAPP\) Resource](#).

After this Unit

In Unit 02, students will have the opportunity to demonstrate operational understanding involving numbers within 10. In Unit 04, students will deepen their understandings of whole numbers up to 20 as they are formally introduced to the base-10 place value system. In Unit 05, they will extend their understandings of addition and subtraction to sums and minuends within 20. In Unit 10, students will revisit all operations using data representations by analyzing data in picture graphs and bar-type graphs to draw conclusions and answer questions. The Grade 1 data analysis expectations are a stepping stone to deeper understanding of data analysis and graphical representations that will be used in future grade levels and in real-world situations. In Grade 2, students will extend their understanding of data analysis from picture graphs to pictographs and bar-type graphs to bar graphs.

Unit Overviews K-2

Unit Overview

Instructional Focus Document Second Grade



Unit one – Foundations of Number (15 days)



Introduction

This unit bundles student expectations that address the understanding of whole numbers up to 1,200 and comparing and ordering of these numbers using number lines, including open number lines. According to the Texas Education Agency, mathematical process standards including application, a problem-solving model, tools and techniques, communication, representations, relationships, and justifications should be integrated (when applicable) with content knowledge and skills so that students are prepared to use mathematics in everyday life, society, and the workplace.

Prior to this Unit

In Grade 1, students used place value to compose, decompose, and represent whole numbers up to 120. They also compared and ordered numbers using open number lines.

During this Unit

Students extend their understanding of the base-10 place value system to include the thousands period and numbers up to 1,200. Students compose and decompose numbers through 1,200 in more than one way as a sum of so many one thousands, so many hundreds, so many tens, and so many ones using concrete objects (e.g., proportional objects such as base-10 blocks, non-proportional objects such as place value disks, etc.), pictorial models (e.g., base-10 representations with place value charts, place value disk representations with place value charts, open number lines, etc.), and numerical representations (e.g., expanded form, word form, standard form, etc.). Students use place value relationships in order to generate numbers that are more or less than a given number using tools such as a hundreds chart or base-10 blocks. Students compare whole numbers up to 1,200 and represent the comparison using comparative language and symbols. Students use number lines, including open number lines, to locate, name, and represent the order of these numbers.

Other considerations: Reference the [Mathematics Grade 2 Instructional Considerations to Activate Purposeful Planning \(ICAPP\) Resource](#).

After this Unit

In Grade 3, students will extend their understanding of place value and the thousands period to include the ten thousand and hundred thousand places. Students will compose, decompose, represent, compare, and order whole numbers through 100,000. In addition to ordering numbers, students will use the number line, including the open number line, as a tool for rounding numbers and representing fractions.

Additional Notes

In Grade 2, composing, decomposing, and representing numbers, and comparing and ordering numbers using number lines and open number lines are foundational building blocks to the conceptual understanding of the Grade 2 *Texas Response to Curriculum Focal Points (TxRCFP)*: Developing proficiency in the use of place value within the base-10 numeration system. This unit is supporting the development of the *Texas College and Career Readiness Standards (TxCCRS)*: I. Numeric Reasoning A1, A2, B1, B2; II. Algebraic Reasoning D1, D2; V. Statistical Reasoning A1, C2; VII. Problem Solving and Reasoning A1, A2, A3, A4, A5, B1, C1, D1, D2; VIII. Communication and Representation A1, A2, A3, B1, B2, C1, C2, C3; IX. Connections A1, A2, B1, B2, B3.