

Instructional Focus Document

Kindergarten

Unit Three – Introducing & Developing Numbers 6-10 and reciting numbers to 60 (14 – Days)

Introduction

This unit bundles student expectations that address the foundational skills for developing an understanding of numbers 0 – 10, counting forward and backward 1 – 10, cardinality, subitizing, conservation of set, comparing numbers and sets of objects using comparative language, and generating numbers or sets of objects less than or greater than a given amount. This unit also includes the student expectation that addresses reciting numbers up to 60 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.

Prior to this Unit

In Unit 01, students began to investigate the foundational skills for understanding and using numbers from 0 to 5 and recited numbers up to 30 by ones beginning with any given number.

During this Unit

Students are introduced to the numbers 6 – 10. They use sets of objects up to 10 to further 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 continue to explore the true meaning of numbers. Students count forward and backward to 10 with and without objects, as well as read, write, and represent the numbers. Students also compose and decompose numbers up to 10 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 10 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 10, 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 60 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 06, students will continue to develop the foundations of number as they extend their number set to include 11 to 15 and extend reciting numbers up to 90 by tens beginning with 10 and by ones beginning with any number.

Additional Notes

In Kindergarten, reciting numbers up to 60, 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)*:

Instructional Focus Document

First Grade

Unit Four – Foundations of Numbers up to 20 – 10 Days

Introduction

This unit bundles student expectations that address the understanding of whole numbers up to 20, comparing numbers using place value, and ordering these numbers using an open number line. 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 read and represented whole numbers up to 20 using concrete models, pictorial models, and numerals. Students also compared sets of objects and numerals up to at least 20 using comparative language.

During this Unit

Students are formally introduced to the base-10 place value system by thinking in terms of “tens” and “ones” instead of one-to-one correspondence for the understanding of whole numbers up to 20. Students compose and decompose numbers through 20 as a sum of 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, etc.), and numerical representations (e.g., expanded form and standard form). Students use place value relationships to generate numbers that are more or less than a given number using tools (e.g., a hundreds chart, calendar, base-10 blocks, etc.). Students use place value to compare whole numbers up to 20 and represent the comparison using comparative language and, for the first time, comparison symbols. Students are also introduced to using place value and open number lines to order whole numbers.

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

After this Unit

In Unit 06, students will use this place value understanding as a foundation to build number concepts for whole numbers up to 99. Students will extend their knowledge of the base-10 number system by using objects and manipulatives to form multiple groups of tens and ones.

Additional Notes

In Grade 1, composing, decomposing, and representing numbers, and comparing and ordering numbers are foundational building blocks to the conceptual understanding of the Grade 1 *Texas Response to Curriculum Focal Points* (TxRCFP): Developing an understanding of place value. This unit is supporting the development of the *Texas College and Career Readiness Standards* (TxCCRS): I. Numeric Reasoning A1, B1, B2; II. Algebraic Reasoning D1, D2; V. Statistical Reasoning A1, C2; VII. Problem Solving and Reasoning A1, A2, A3, A4, A5, B1, B2, D1, D2; VIII. Communication and Representation A1, A2, A3, B1, B2, C1, C2, C3; IX. Connections A1, A2, B1, B2, B3.

Instructional Focus Document Second Grade



Unit Three – Addition & Subtraction without Algorithms (25 days)

Introduction

This unit bundles student expectations that address generating, representing and solving addition and subtraction problem situations without algorithms, recalling basic facts with automaticity, and determining the value of a collection of coins. 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 applied basic facts, strategies, and properties of operations to generate, represent, and solve addition and subtraction problems within 20. In Grade 2 Unit 02, students determined the value of a collection of coins and used the dollar symbol and decimal or the cent symbol to name the value of the coins.

During this Unit

Students apply strategies based on place value and properties of operations to add up to four two-digit numbers or subtract two-digit numbers. Students also explore flexible methods and models to solve and represent addition and subtraction situations within 1,000, which may include up to three-digit numbers. Strategies may include mental math, concrete models, pictorial representations, number sentences, and open number lines. Addition and subtraction situations, where the unknown may be any one of the terms in the problem, should include numbers that require regrouping to solve the problem. The relationship between place value and each flexible method and/or model should be emphasized in order to prepare students for the transition to algorithms in Unit 06. Within this unit, students also experience generating addition and subtraction situations when given a number sentence involving addition or subtraction of numbers within 1,000. Continued use of basic addition and subtraction fact strategies to solve problems leads to automatic recall and fact fluency. Students revisit determining the value of a collection of coins up to one dollar using formal money notation, including the dollar symbol and decimal or the cent symbol. Students also experience exchange of coins to create sets of equivalent value and to create minimal sets of coins for a given value.

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

After this Unit

In Unit 06, students will extend representing and solving addition and subtraction problems within 1,000 as they connect flexible methods to the standard algorithm.

Additional Notes

In Grade 2, generating, representing, and solving addition and subtraction situations, and recalling basic facts are subsumed within the Grade 2 *Texas Response to Curriculum Focal Points (TxRCFP)*: Using place value and properties of operations to solve problems involving addition and subtraction of whole numbers within 1,000. Determining and representing the value of a collection of coins are identified within 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 A2, B1; 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.