

Unit A - Numbers All Around Us

Overview

To begin the year, students will establish routines for the math workshop and Number Corner environment. Students use Work Places as regular opportunities to socially engage in mathematical learning while sharing strategies with fellow students. Small guided math groups are facilitated during this time to help students consolidate or extend their learning.

The first unit is designed to help students develop a sense of numbers and their relationships to one another through looking at several key counting and number concepts. The unit begins with organizing and counting objects moving to counting forward and backward and grouping and counting in 2s, 5s, and 10s. Subitizing, the ability to know a quantity without counting each individual part of a set, is developed through the use of several models such as number racks, ten frames, tally marks, graphs, and number lines. By understanding the structure of the models, students can begin to see numbers in parts and groups. Being able to subitize is a key step in developing strategies to add and subtract. In Kindergarten, students worked in depth on this skill so this unit will review and reinforce how to “see numbers”. As first graders, students will begin to develop flexibility with numbers in problem contexts involving combining and separating numbers. By the end of the unit, students understand how to use, visualize and create models such as number racks and ten frames to solve a problem that they have analyzed in order to find various solutions.

21st Century Capacities: Product Creation, Analyzing

Stage 1 - Desired Results

ESTABLISHED GOALS/ STANDARDS

MP 4 Model with Mathematics
MP7 Look for and Make Use of Structure

CCSS.MATH.CONTENT.1.OA.B.4 Understand subtraction as an unknown-addend problem.

CCSS.MATH.CONTENT.1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

CCSS.MATH.CONTENT.1.OA.C.6

Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 =$

Transfer:

Students will be able to independently use their learning in new situations to...

1. Build models in order to visualize numbers, relationships, and combinations (Product Creation)
2. Deconstruct a question or problem by identifying relevant data and appropriate strategies to identify relationships. (Analyzing)

Meaning:

UNDERSTANDINGS: *Students will understand that:*

1. Organizing items into groups can

ESSENTIAL QUESTIONS: *Students will explore & address these recurring questions:*

- A. What pattern(s) do I see in the

Grade 1 Math Curriculum

<p>14); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).</p> <p>CCSS.MATH.CONTENT.1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.</p> <p>CCSS.MATH.CONTENT.1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p> <p>CCSS.MATH.CONTENT.1.NBT.B.2.B The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.</p> <p>CCSS.MATH.CONTENT.1.MD.A.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. <i>Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.</i></p> <p>CCSS.MATH.CONTENT.1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p> <p>CCSS.MATH.CONTENT.1.G.A.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.¹</p>	<p>help with counting</p> <ol style="list-style-type: none"> There are flexible ways of representing and recognizing quantities A single quantity can be composed and decomposed Modeling mathematical situations enables us to create entry points to problem solving 	<p>numbers?</p> <ol style="list-style-type: none"> How can I model solving problems? How can this number be broken into smaller parts? How can these numbers be put together? How do I identify the appropriate information I need to solve this problem?
Acquisition:		
	<p><i>Students will know...</i></p> <ol style="list-style-type: none"> Strategies to solve combinations to 5 and 10 such as counting on, doubles and compensation; A variety of equations can be written to describe a number relationship; A fact family is a group of related equations; The part is distinct from the whole, and at the same time won't lose sight of the whole as it relates to its component parts. <u>Vocabulary</u>: less than, more than, tally, pattern, equation, equal, addition, subtraction, ten-frame, length, sum, total NC-week, year, estimate, fewer, greater, graph, nickel, penny, column, row, decade, digit, number line, before, after 	<p><i>Students will be skilled at...</i></p> <ol style="list-style-type: none"> Understanding expectations and norms about mathematical inquiry and discourse Seeing a combination of a number and writing it as an equation Using models such as the ten frame and number rack to help visualize numbers, relationships, and combinations Using part-part whole relations in problem contexts that involve combining or separating numbers Counting forward and backward by 1s, 2s, 5s, and 10s Recognizing and reproducing quantities without having to count individually Solving story problems