Number Sense

Content Area: **Mathematics**
Course(s): **Math 1**
Time Period: **September**
Length: **10 Days**
Status: **Published**

Unit Summary

In this unit students will learn to read, write and quantify numbers as well as explore and discover patterns and relationships in place value and comparisons of values. They will work through the process of how to compare two or more values. Academic vocabulary within this unit includes the following terms: number words, count by ones, numerals, zero, one, two, three, four, five, six, seven, eight, nine, ten, Make a Ten, compose, decompose, dominoes, unifix cubes, ten frames.

Standards

	Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
	Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.
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.
CCSS.Math.Content.1.NBT.B.2	Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
CCSS.Math.Content.1.NBT.B.2.a	10 can be thought of as a bundle of ten ones — called a "ten."
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when

it is appropriate to apply the use of an academic skill in a workplace situation.

TECH.8.1.2.A.CS1	Understand and use technology systems.
TECH.8.1.2.A.CS2	Select and use applications effectively and productively.

Student Learning Objectives

Students will learn to...

- Recognize and write numbers 0-9
- Identify which number is more or less
- Review concepts of more, less, and zero and making numbers

Essential Questions

- How can we understand, write and represent numbers 0 through 10?

Enduring Understandings

Students will understand that...

- You use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set, counting out a given number of objects, and modeling joining and separating situations with sets of objects.
- We can use a variety of models, including discrete objects and length-based models (e.g., cubes connected to form lengths), to modeladd-to, take-from, put-together, and take-apart
- You can use various counting strategies and tools to count objects.

Application

Students will be able to independently use their learning to...

- build their understanding of number sense in order to be able to apply this knowledge to add and subtract.

Skills

Students will be skilled at...

- Count by ones to 10
- Demonstrate the relationship between numbers and quantities using models
- Use models and write to represent numerals 0-10
- Use objects, pictures, and numbers to represent numerals 0-10

- Solve problems using the strategy "make a model"
- Read and write numerals to represent a number of 0-10 objects
- Identify if a number is more or less than another number within 10
- Recognize that a quantity can be rearranged without changing its amount
- Recognize that a quantity can be decomposed in different ways and that the quantity remains the same