Chapter 6: Count and Model Numbers

Content Area: **Mathematics**
Course(s): **Math 1**
Time Period: **February**
Length: **13 Weeks**
Status: **Published**

Unit Summary

In unit 6, children extend their knowledge of the counting sequence to numbers up to 120. Children count forward from any given number within 120 by ones and tens using counting charts (1.NBT.A.1). Then children apply the counting pattern to understand place value of tens and ones for numbers 11 to 19 (1.NBT.B.2b). Children continue working with ones and grouping them into bundles of tens to represent numbers. They learn to model any 2-digit number with ten and ones then model different ways to decompose the number. Finally, children read, write, and represent numbers from 100 to 120. Throughout this unit, students will master the following academic terms: count by ones, numerals, zero, one, two, three, four, five, six, seven, eight, nine, ten, Make a Ten, compose, decompose, dominoes, unifix cubes, and ten frames.

Standards

MA.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.
MA.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:
MA.1.NBT.B.3	Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
MA.1.NBT.B.2c	The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.7	Look for and make use of structure.
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.
	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 × 5 + 7 × 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.
	Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a

ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

Student Learning Objectives

Students will learn to...

- Use models and write to represent equivalent forms of tens and ones through 120
- Use objects, pictures, and numbers to represent numbers (or quantities) to 100
- Solve problems using the strategy make a model
- Count, read and write numerals to represent a number of 100 to 120 objects

Essential Questions

- How can we understand, write and represent numbers 0 through 120?

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 model and-to, take-from, put-together, and take-apart
- You can use various counting strategies and tools to count objects.

Application

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

- write, count and model numbers to 120.

Skills

Students will be skilled at...

- Counting by ones to 120
- Demonstrating the relationship between numbers and quantities using models
- Using models and write to represent numerals 0-120
- Using objects, pictures, and numbers to represent numerals 0-120
- Solving problems using the strategy "make a model"
- Reading and write numerals to represent a number of 0-120 objects
- Identifying if a number is more or less than another number within 120
- Recognizing that a quantity can be rearranged without changing its amount
- Recognizing that a quantity can be decomposed in different ways and that the quantity remains the same