Chapter 2: Subtraction Concepts

Content Area: **Mathematics**
Course(s):   **Math 1**
Time Period: **October**
Length: **8 Days**
Status: **Published**

Unit Summary

In unit 2, children continue to learn more about the subtraction situations: taking from, taking apart, and comparing using various models (1.OA.A.1). In this unit, the subtraction situations are represented with word problems using unknown numbers in various positions in the number sentence. Children can then identify what they know, what they need to find, and how to find it, and then represent each part of the word problem with a model or equation. Children are also introduced to comparison subtraction and learn about the concepts of more and fewer. Further in the unit, children develop fluency by solving for unknowns in subtraction sentences. Throughout this unit, sudents will master the following academic terms: compare, difference, fewer, minus, more, subtract, and subtraction sentence.

Standards

CCSS.Math.Content.1.OA.A.1	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
MA.K-12.2	Reason abstractly and quantitatively.
	Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
MA.K-12.5	Use appropriate tools strategically.
	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.
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., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); 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).
CCSS.Math.Content.1.OA.D.8	Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.
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...

- Use pictures and concrete objects and the strategy make a model to solve "taking from" and "taking apart" subtraction problems
- Compare pictorial groups to understand subtraction
- Identify how many are left when subtracting all or 0
- Model and compare groups to show the meaning of subtraction
- Model and record all of the ways to take apart numbers within 10
- Build fluency for subtraction within 10

Essential Questions

- How do we solve subtraction problems?
- How do we decide what operation to use when solving word problems?

Enduring Understandings

Students will understand that...

- in subtraction we take away quantities to find the difference.

Application

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

- solve taking away, taking from, and comparison subtraction word problems within 10 and develop fluency for solving subtraction problems within 10.

Skills

Students will be skilled at...

- Using pictures to show "taking from" and find differences
- Using concrete objects to solve "taking from" subtraction problems
- Using concrete objects to solve "taking apart" subtraction problems
- Solving taking from and taking apart problems using the strategy "make a model"
- Comparing pictorial groups to understand subtraction
- Modeling and comparing groups to show the meaning of subtraction
- Identifying how many are left when subtracting all or 0
- Modeling and recording all of the ways to take apart numbers within 10
- Building fluency for subtraction within 10