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Resource ID#: 29860

Primary Type: Lesson Plan

Cookie Subtraction

In this lesson, the teacher shares the book, "Mmm... Cookie Simple Subtraction". The students follow along by representing the problems in the book with cookie manipulatives and recording the equations for each problem. The lesson incorporates a variety of subtraction problem types.

General Information

Subject(s): Mathematics

Grade Level(s): 1

Intended Audience: [Educators](#)

Instructional Time: 1 Hour(s)

Resource supports reading in content area: Yes

Freely Available: Yes

Keywords: subtraction, take apart, numbers, difference, cookies, weiss, nicki

Instructional Component Type(s): [Lesson Plan](#), [Worksheet](#)

Resource Collection: CPALMS Lesson Plan Development Initiative

Attachment

[cookiesubtraction.pdf](#)

Lesson Content

Lesson Plan Template: General Lesson Plan

Learning Objectives: What should students know and be able to do as a result of this lesson?

The students will enrich their understanding of subtraction by analyzing different types of word problems. They will show this understanding by manipulating cookies to write equations and solve different types of word problems using subtraction.

Prior Knowledge: What prior knowledge should students have for this lesson?

The student should have an understanding of numbers 1-10.

The student should be familiar with subtraction and the symbol for subtraction.

The student should understand that the equal sign means you have the same quantity on both sides.

Guiding Questions: What are the guiding questions for this lesson?

How many cookies are on your cookie sheet?

What is the whole amount of cookies?

Is this a part of the cookies or the whole? How do you know?

How can you find the whole when you only know the parts?

Is there only one pile of cookies or are there two stacks of cookies?

How can you compare this stack of cookies with this stack?

What operation did we use to show how many cookies are left?

What operation did we use to compare the amounts of cookies?

What symbol will we use to represent the difference in the amount of cookies?

How is this the same as we did earlier? How is it different?

What types of action happen in subtraction? (take away, look for a difference or compare)

Teaching Phase: How will the teacher present the concept or skill to students?

Distribute the subtraction recording sheet, cookie manipulatives and a copy of the cookie baking sheet, to each student, from the [cookie_subtraction_sheet](#). You may choose to cut the cookies out in advance, or have students cut them out. Have students place the 9 cookies on the cookie baking sheet.

The teacher will read the story Mmmm... Cookies! Simple Subtraction by Nicki Weiss to the students. As the story is being read, the students will remove a cookie from their cookie sheet when each character takes a cookie. Ask some of the Guiding Questions during this such as:

- Is the nine our whole amount of cookies or part of the cookies? How do you know?
- What action are you doing to show what happens to the cookies after a character comes? Why?

Ask the students to record an equation on a recording sheet showing the number of cookies left. Use the following questions to guide discussion.

- What math sentence will represent what just happened? Why?
- What does this number represent in our story?
- Can you close your eyes and visualize what is happening?

Guided Practice: What activities or exercises will the students complete with teacher guidance?

The teacher will distribute 10 edible items (e.g., cookies, cheerios, grapes, or M&M's). The teacher will dictate a word problem and have the students demonstrate it with their edible items.

For example:

Jake had ten cookies. He ate four cookies. How many cookies are left?

This type of problem is called Taken From/Result Unknown. Please refer to the [Common-Addition-and-Subtraction-Situation](#) document to familiarize yourself with the different types of subtraction problems. It is important that students are exposed to each of these types, although they do not need to know what each type is called.

Distribute the [Cookie_Subtraction_Guided_Practice](#) to each student. Together, complete the Cookie Subtraction Guided Practice Worksheet. **Use the Guiding Questions to help the students process the mathematical ideas involved in these different types of word problems.** Have students determine possible subtraction sentences for each situation, modeling the math sentence on the recording sheet. If you prefer multiple examples, you can have the students demonstrate several equations before eating their items.

Some students may point out that some problems could be solved with addition. This observation should be praised. Record the example on the board, comparing it with a possible subtraction example, for the same problem. Discuss the similarities and differences. Advise the students that today we will be recording the subtraction sentences on our recording sheet, but it is always wonderful to have more than one way to solve a problem, so we will record any addition sentences on the board.

Independent Practice: What activities or exercises will students complete to reinforce the concepts and skills developed in the lesson?

Students will take part in a subtraction activity. A small, sturdy bowl will be placed on the floor. A student will be given ten cookies (cookies could be weighted by attaching them to clothespins, or taping a weighted object to them, etc).

One at a time, students will be given some cookies and will be told to drop some cookies into the bowl. Make a subtraction sentence to demonstrate what happened. Students should be encouraged to drop or keep as many cookies as they'd like. You can add interest by not revealing how many cookies the student starts off with. For example: Student dropped 5, now has 2, how many did he/she start with? Students will record their equation on a recording sheet.

Again, use the Guiding Questions to process the math actions during this game and helping the students to be aware of them.

Closure: How will the teacher assist students in organizing the knowledge gained in the lesson?

Have students compare the number sentences from the independent and guided practice activities.

Are any the same? Are any related (containing the same three numbers)? Discuss.

Example: Is $5-3=2$ the same as $5-2=3$? (They contain the same numbers but in $5-3=2$ three were taken away, in $5-2=3$ two were taken away). These types of discussions will help students understand how to comprehend and create subtraction sentences.

Use the Guiding Questions to facilitate this discussion about the meanings of subtraction.

When you believe the students are ready, administer the Summative Assessment found in the Summative Assessment section.

Summative Assessment

The teacher may administer the attached [Summative_Assessment](#)

The teacher will measure the student's ability to subtract numbers in other math activities and centers (as the students work independently) to determine if these resources had an impact on the student's learning goal.

Formative Assessment

As the teacher circulates the room during the lesson, she/he will check students' strategies for solving problems and accurately communicate their thinking to problem solve. Teacher can guide students when errors are found.

Teacher should aim to determine the following:

Can the students use appropriate strategies for solving the problem?

Can the students communicate their mathematical thinking as they are solving the problem?

The teacher should use the Guiding Questions to clarify and probe student thinking.

Feedback to Students

The students will use the guided instruction to correctly take apart numbers to show their understanding of subtraction. The students will produce equations on recording sheets correctly, and the teacher will provide extra assistance when needed.

Accommodations & Recommendations

Accommodations:

Individual and small group guided assistance will be given to the students with special needs and those needing extra help. Using the manipulatives will help these students and you may want to give them a Part-Part-Whole board to help them stay organized. Peer tutors will also be used for students struggling with the concept.

Extensions:

Given a variety of subtraction sentences, with varying pieces of information missing, students will try to create a situation that represents each problem.

Example:

$$5-2=3$$

$$5-3=2$$

$$_ - 2 = 3$$

$$_ - 3 = 2$$

$$5 - _ = 3$$

$$5 - _ = 2$$

Special Materials Needed:

Mmmm... Cookies! Simple Subtraction by Nicki Weiss

Copies of Cookie manipulatives

Copies of Recording sheet

Copies of Guided Practice worksheet

Copies of the Summative assessment.

Edible food items (e.g., cookies, cheerios, M&M's, or grapes)

Bowl

Recording sheet for cookie subtraction game.

Additional Information/Instructions

By Author/Submitter

Students who participate in this lesson will engage in the Math Practice Standard, MAFS.K12.MP.2.1 Reason abstractly and quantitatively as they relate the equations to context.

Source and Access Information

Name of Author/Source: Anonymously Submitted

Is this Resource freely Available? Yes

Access Privileges: Public

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Aligned Standards

Name	Description
MAFS.1.OA.1.1:	Use addition and subtraction within 20 to solve word problems ¹ 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 (¹ Students are not required to independently read the word problems.)