

Add It Up

Summary

This activity is designed to teach students to use manipulatives to solve addition problems while recognizing the symbols of addition and equal value (i.e., add, "and," plus, +, sum, equals, =, same as).

Main Core Tie

Mathematics Grade 1

[Strand: OPERATIONS AND ALGEBRAIC THINKING \(1.OA\) Standard 1.OA.5](#)

Additional Core Ties

Mathematics Grade 1

[Strand: OPERATIONS AND ALGEBRAIC THINKING \(1.OA\) Standard 1.OA.1](#)

Materials

For the class:

- *Mission Addition*
Overhead projector and overhead markers
Overhead manipulatives-- counting beans or clear overhead manipulatives
A bag of small dried beans

For each student:

- [Add It Up worksheet](#)
- [Bean Addition worksheet](#)
2-color bean counters
Pencils
White school glue
Small cup filled with 44 beans
- [Numeral Cards](#)

Additional Resources

Books

- *Mission Addition*
, by Loreen Leedy; ISBN 0823414124
- *Quack and Count*
, by Keith Baker; ISBN 0152050256
- *M&M's Counting Book*
, by Barbara Barbieri McGrath; ISBN 0-88106-853-5
- *Hershey's Kisses Addition Book*
, by Jerry Pallotta; ISBN 0-439-24179-1
- *Spunky Monkey on Parade*
, by Stuart J. Murphy; ISBN 0064467279

Background for Teachers

This activity is designed to teach students to use manipulatives to solve addition problems while recognizing the symbols of addition and equal value (i.e., add, "and," plus, +, sum, equals, =, same as). Students will be able to recognize that the equal sign indicates a relationship in which the quantities on each side of an equation are equal. They will also be able to change the order of

addends and still come up with the same sum. Identify students who need accommodations and extensions before beginning this lesson. This activity should be taught after many hands-on activities, but before you introduce the concept with paper and pencil.

Intended Learning Outcomes

5. Understand and use basic concepts and skills.
6. Communicate clearly in oral, artistic, written, and nonverbal form.

Instructional Procedures

Invitation to Learn

Draw an equal sign and an addition sign on the board and ask students to identify what each symbol represents and what they mean. Read *Mission Addition* to the class. As the book is read, discuss the math symbols (+ and =). While reading pages 6 and 7, discuss how the animals used objects placed above the numerals to add. Continue reading the book.

Instructional Procedures

Refer back to pages 6 and 7 of *Mission Addition*. Remind the children of how the animals used actual objects to solve the addition problems. Write an addition problem on the overhead. Use overhead manipulatives to solve the problem and write the answer. Write a different addition problem on the overhead and ask for a volunteer to demonstrate how to solve the problem with manipulatives. Explain that on each side of the equal sign there is the exact same amount of manipulatives. Make sure the students are aware that the equal sign means we have the same amount of objects on each side.

Tell students that they will solve addition problems using 2-colored counting beans.

Give each student a cup with a specific number of 2-colored counting beans inside, for example, 4, 5, or 6. The number of beans in the cup depends on the desired sum. Have students shake their cup, covering it with their hand, and empty the counting beans onto their desks. Have students reveal how many "red" and "white" beans they have. Do a "museum" walk around the classroom to see all of the different combinations of that sum on each person's desk. (A "museum" walk is where every student walks around the classroom to see what their peers have done with the items on their desks.)

The next day, pass out [Numeral Cards](#) for students to use in creating the number sentences that were made using the 2-color bean counters.

Demonstrate writing a number sentence with a student's sample on the [Add It Up worksheet](#).

You may want to make an overhead copy of the worksheet to complete with the students. This activity demonstrates that changing the order of addends does not change the sum.

Give each student the [Bean Addition worksheet](#) and a small cup containing 44 beans. Instruct students to glue the correct amount of beans above each numeral and write the answer after the equal symbol.

After the students have completed their sheets, have volunteers go up to the board and demonstrate how they solved one of the problems. Students write the addition problem and draw the amount of beans that they have represented on their paper. Then explain how they arrived at their answer and record the sum after the equation. After beans dry, allow several students to share. End the lesson by collecting the papers and using them as a means of informal assessment.

Extensions

This lesson may be integrated with any of the seed lessons from the 2003 Elementary CORE Academy, which includes Standard I (11-15 and 11-2: Seed Exploration tubs) and Standard III (13-1, 13-3, and 13-15).

Students who are struggling with this lesson may need additional practice with matching number to set. If necessary, allow these students to write the numbers one through ten on a sheet of paper and glue that amount of beans on their sheets in order to link the actual amounts with the numerals.

The activity with the 2-colored counting beans may be put into a math center. Students pick the number of beans they want to use for their sum and then come up with all of the different combinations of math facts for that sum.

Place a deck of cards in a center for students to choose one card and make all the combinations of that number.

Read the book *Quack and Count* and make a "Ways to make Number Facts" book.

Using dominoes, students record facts showing that the order of addends does not change the sum in a math journal. Copy the domino and then turn it around to copy the related fact.

Family Connections

Have students find objects such as noodles, cereal, or other objects around the house and teach family members the addend rule. Have each student share an example using objects from home with the class the next day.

Assessment Plan

Have each student demonstrate one addition problem using manipulatives and explain what the "=" sign and "+" sign mean.

Use the [Bean Addition worksheet](#) as an informal assessment.

Let students use the 2-color bean counters, cubes, or other manipulatives to demonstrate an addition sentence.

Bibliography

Research Basis

National Research Council Mathematics Learning Study Committee. (2001). *Adding It Up: Helping Children Learn Mathematics*. Chapter 9, Teaching for Mathematical Proficiency, Instruction as Interaction. ISBN 0309069955

This text focuses not just on what teachers do, but also on the interactions among teachers and students around content. They view the teaching and learning of mathematics as the product of interactions among the teacher, the students, and the mathematics.

Authors

[Utah LessonPlans](#)