Inspired Instruction

Operations and Algebraic Thinking
Lesson Plan
Meaning of the Equal Sign

Grade 1

Rationale

- Many students think that the equals sign means, "And the answer is…" This becomes clear when they are confused if the "answer" is on the left hand side of the equation. It is important that students understand the significance of the equal sign, as it is a crucial first step in figuring out equations. Students must understand the concept of a balanced equation in order to solve more complex problems. In this sorting activity, students will discover the equal sign's significance and recognize when it is used correctly.

Goal

- To understand the significance of the equal sign and recognize whether equations are true or false

Standards

- **1.OA.7** Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.

Objectives

- Students will determine whether equations are true or false through a sorting activity.

Materials

- Prepared activity sheet. (Directions: Copy onto card stock and cut along the lines, and place the pieces into a baggie. Prepare one set for each pair of students.)

Procedures

- Put students in pairs and distribute the pre-prepared activity sheet.
- Ask students to sort the cards. Do not tell the students how to sort the cards or what categories to use. Allow them to figure that out for themselves.
- While students are working, circulate and answer questions as they arise.
- Once students have finished sorting their cards, have a class discussion about their findings.
- Students likely did not use all of the same categories to sort the cards. Have students share their sorting methods and how they decided on a method for sorting the cards.
- Go through the cards one at a time and ask students to tell you whether the equation is true or false.
- **Closing:** Ask students to explain the significance of the equal sign.

Teacher Tips

- For students having trouble getting started, draw their attention to two of the cards (5 = 6 and 5 = 5). Ask students whether they think those two cards should be in the same category and why.
- Do not tell students how many categories to sort their cards into or which categories to use. Allow them to discover that on their own.
- Students can also work alone for this activity.
- Be aware of your use of language and terminology, as well as, that of the students when it comes to equations. Encourage students to say, "is the same as," or "is," instead of "makes." (i.e. 3 + 4 is 7, instead of 3 + 4 makes 7)

Extension Activities

- Have students create a number of equations similar to the ones on the cards. Ask them to create some that are wrong and switch with a classmate to solve.
- Give students unbalanced equations and ask students to correct them so they are correct.
- Demonstrate the significance of the equal sign through a kinesthetic activity. Designate an object as the equal sign (such as a chair or a bench outside). Divide the class into two teams and have the first team create one side of the equation. The other team will then arrange themselves to make the other side so that they have a true equation.
- A similar activity can be done with subtraction or with a combination of addition and subtraction equations.

$5 = 6$	$6 + 1 = 5 + 2$
$2 + 4 = 1 + 3$	$2 = 2$
$7 = 6$	$2 + 3 = 4 + 1$
$1 + 2 + 3 = 2 + 3 + 4$	$1 + 2 + 3 = 2 + 4$
$4 + 3 = 2 + 6$	$5 = 5$