



Part-Part-Whole Relationships with Subtraction

By: Lori McDonald
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Math
Grades K-2



Introduction

Through several engaging activities, students will experiment with taking away a “part” from a “whole” group to help them understand the concept of part-part-whole in relation to subtraction. This lesson includes a whole-group activity and a partner activity, as well as independent work and evaluation.

Learning Objectives

[CCSS.MATH.CONTENT.1.OA.B.3](#); Apply properties of operations as strategies to add and subtract. Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)

Materials Needed

- Connecting cubes

Procedure

Warm up – Have students gather at the carpet or circle area. Call several students to the front of the class, including both boys and girls. Then, ask the students to count to see how many students there are at the front of the class; record that number. Then, ask all the boys (or girls) to sit down. Next, ask how many students are left. Explain to students that the previous activities with part-part-whole can be reversed to create subtraction problems.

1. Display a “train” of connecting cubes made up of two different colors. Guide the students in counting the whole number of cubes. Then, take away one color and see what is remaining. Discuss the part-part-whole relationship and how the two parts can be put together to make a whole and that one of the parts can be taken away and the other part is remaining.
2. Give each student their own “train” of connecting cubes, consisting of two different colors with different whole numbers or “part” combinations. Have each student share with the class what their addition problem would be for their connecting cube train. Then, guide the students through stating what one of their subtraction problems would be. As students take their turns, record their part-part-whole combinations on the board with one addition problem and one subtraction problem.

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- Students will then return to their seats to work with a partner. Each pair of students should be given some red/yellow counters and a dry erase board/marker. The students will take turns gently shaking the counters in their cupped hands and letting them fall to their desktop. The students will then count how many red/yellow, as well as the whole number and write the equation on their dry-erase board. The students will continue in this manner. As they work, walk around and take away some counters or give extras randomly so that the whole number is changing as they work. Provide guidance and support as needed.

Evaluation

As a formative assessment, have students complete the [exit ticket](#).