

LESSON 12

Objective

Identify a whole number as a combination of two parts.

Skills

- Counting
- Adding
- Using models

NCTM Expectations

Number and Operations

- Develop a sense of whole numbers and represent and use them in flexible ways, including relating, composing, and decomposing numbers.
- Understand the effects of adding and subtracting whole numbers.
- Develop and use strategies for whole-number computations, with a focus on addition and subtraction.
- Use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencil, and calculators.

Number and Operations

Part-Part-Whole

One highly effective model for introducing addition is the part-part-whole model. Classroom research has shown that when children are provided with experiences identifying and discussing parts and wholes of quantities, they make fewer errors in deciding when to add in problem situations.

Try It! Perform the Try It! activity on the next page.

Talk About It

Discuss the Try It! activity.

- **Ask:** How many Snap Cubes® are there all together in the train you made? How do you know?
- **Ask:** How many Cubes of each color are there? Repeat this question for different combinations of colors. Make sure that children understand that the different combinations all show the number 5.
- After children have mastered the concept of part-part-whole, encourage them to work with Cubes to discover other smaller parts that make up numbers 2 to 5.

Solve It

With children, reread the problem. Have each child build and draw one way that David and Lisa could put together their Cubes to make a train of five with two different colors. Ask volunteers to share their solutions with the class.

More Ideas

For other ways to teach about part-part-whole—

- Have children write a number from 1 to 5 on a sheet of paper. Ask them to use combinations of the same kind of Backyard Bugs™ in two different colors to show this number. For example, children could use two yellow spiders and two purple spiders to show the number 4. Then have children draw and color the combinations of Bugs that show each number.
- Display a chain of five blue Link 'N' Learn® Links and ask children how many there are. Replace one blue Link with a red Link. Ask children how the group has changed and if there are still five Links. Continue showing other combinations for 5, replacing one more Link each time. Repeat this activity with other combinations of Links to show numbers 1 through 10.

Standardized Practice

Have children try the following problem.

Draw a picture of 4 fish. Make some of the fish red and some of the fish blue.

Try It! 15 minutes | Pairs

Here is a problem involving the concept of part-part-whole.

David and Lisa want to make a train of five Snap Cubes® using two different colors. What is one way they can do this?

Introduce the problem. Then have children do the activity to solve the problem.

Distribute Cubes to children.

Materials

- Snap Cubes® (5 each of 2 different colors per pair)



1. Have children build a train of five Cubes. The Cubes should all be the same color. **Ask:** *How many Cubes are in your train?*



2. **Say:** *You have made a train of five Cubes that are all the same color. Now let's make a train of five Cubes using two different colors.* Instruct children to remove one Cube from the train they have made and replace it with a Cube of a different color.



3. Have children vary the makeup of their trains by using three of one color and two of the other. Help children understand that all these different combinations make up a total of five.

! Look Out!

Watch for children who don't recognize that the whole group can be made up of different parts. Have children do similar activities using different kinds of manipulatives, such as two colors of Three Bear Family® Counters or two kinds of Backyard Bugs™.