Teaching Problem 1 Class Pets

Materials

Counters,
7 per child, pair,
or group

Teaching Goal

As children participate in each lesson in this section, they work together to determine how a given number of items can be sorted, or otherwise arranged, according to a given situation. In this first lesson, children decide on ways in wnich 7 goldfish can be put into 3 bowls.

Teaching Plan

1. Present the problem to the class.
2. Read the problem aloud as children follow along.
3. Have children work collaboratively in pairs or in small groups to solve the problem. Point out that there are different ways to go about solving a problem, such as modeling it with manipulatives, acting it out, retelling it (in the child's own words), and by drawing a picture.
4. Lead a whole-group discussion of the problem.

Reading the Problem Aloud

Tell children that they are going to read a number story about a boy named Pedro who has 7 goldfish in his classroom.

► Read the title of the problem aloud and tell children to point to each picture of a goldfish as you read the following aloud.

> Pedro's class has 7 goldfish.
> Help Pedro put them into 3 bowls.
> Each bowl must have at least 1 goldfish.
> No bowl may have more than 3 goldfish.
> How many fish would you put into each bowl?

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Problem 1 **Class Pets**

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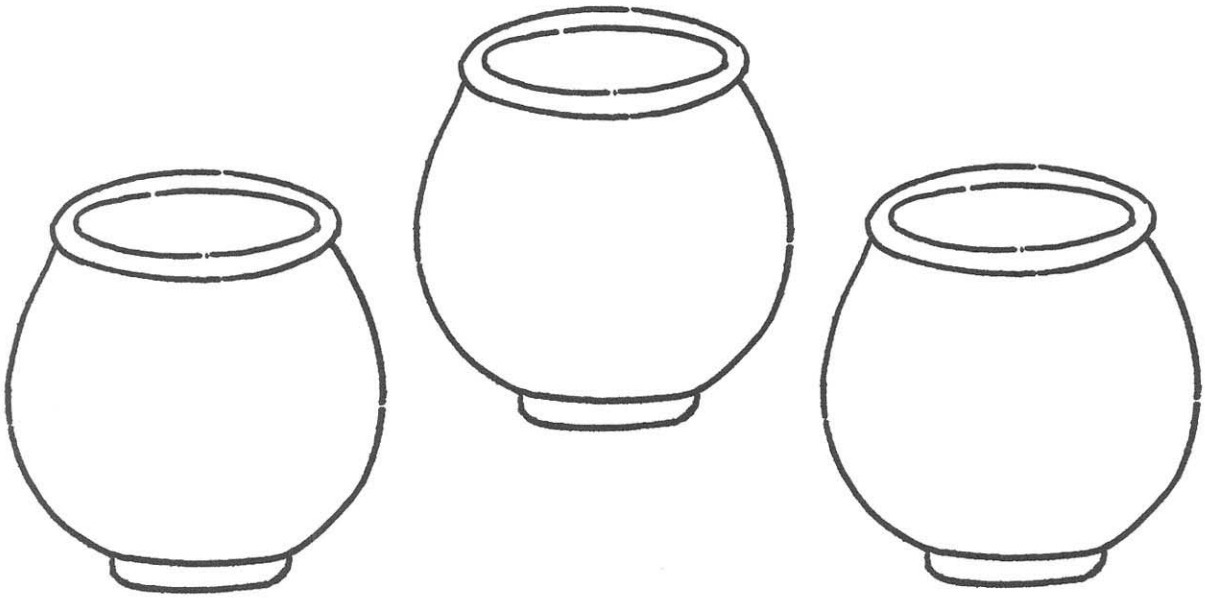
Each bowl must have at least 1  .

No bowl may have more than 3  .

How many fish would you put into each bowl?



Reading the Problem Aloud *continued*

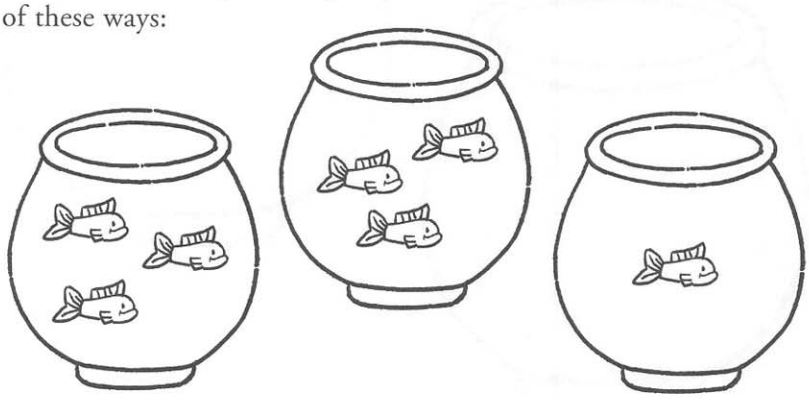
- Explain that children will use counters as goldfish and then show how many of these goldfish they can put into each fishbowl. (If some children are ready to offer answers without using counters at this point, allow them to draw goldfish in the bowls to show their answers.)

  Make counters available. Tell children to take the correct number of counters (7) to stand for the total number of goldfish in Pedro's classroom. Allow sufficient time for children to move the "goldfish" from one "bowl" to the next. When they are satisfied with the way the fish are arranged, have them draw the number of fish in each bowl.

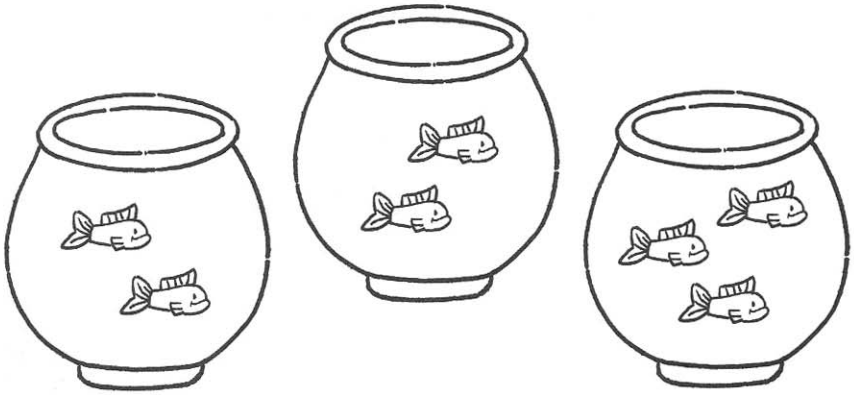
  Note that some children will need help in one-to-one matching; that is, in drawing one goldfish to represent one counter. Help them do this by telling them to take one counter out of a bowl with their non-drawing hand and to hold it while they draw a fish in its place in the bowl with their drawing hand. After the drawing is done, that counter should be put off to the side of the desk. The next counter should be taken out of the bowl and held in one hand while another goldfish is drawn in the bowl, and so on.

- When children have completed their work ask, **Have you put all 7 goldfish into bowls? Have you put at least 1 fish into all 3 bowls?**

  Children may assign the 7 goldfish to the 3 bowls in either of these ways:



2 bowls have 3 goldfish each, and 1 bowl has 1 goldfish.



2 bowls have 2 goldfish each, and 1 bowl has 3 goldfish.

► Finally ask, **How did you decide where to put each goldfish?** Accept any reasonable responses to this question. For example, even though all the actual goldfish may be presumed to be one color, children who are working with counters of more than one color may say that they decided to put their "fish" of one color into one bowl and their "fish" of other colors into the other bowls. Alternatively, children may say that they would put the smallest fish into the first bowl, the medium-size fish into the second bowl, and the biggest fish into the third bowl.

If an incorrect solution is suggested, such as "4 goldfish in one bowl" or "1 bowl with no goldfish," ask children how they can tell whether the solution is correct. To do so, reread the initial conditions of the problem and ask if each one has been met.

Since the problems in this section are somewhat open-ended, there may be a variety of strategies and solutions. It is important to encourage the children to choose a solution that they can defend.