

## Pattern Fish

### Purpose

Students will solve problems, choosing strategies and tools, explaining their reasoning, making calculations, and checking results.

### Materials

*For the teacher:* overhead projector, overhead pattern blocks

*For the students:* pattern blocks (e.g., squares, circles, triangles), crayons, pencils, drawing paper, glue

### Activity

#### A. Introducing the Problem

1. Tell the class that it is going to make fish for a class fish tank using different shapes.
2. Using the overhead pattern blocks, show students how they can make fish.
3. Tell students that they can use only two shapes to make each fish.
4. Show the students how to trace the shapes on a piece of paper, cut out the shapes, glue them together, and decorate.
5. Have each student make one or two different fish to put in the fish tank.

#### B. Solving the Original Problem

1. Have the students tape their fish to the board.
2. Tell students that they need to determine how many fish of each shape there are in the tank (e.g., square fish, round fish, triangular fish).
3. Ask the class for ideas about how to determine how many of each type of fish there are (lead the class toward the idea of making a graph).
4. Discuss with the class the different categories there are for classifying the fish (color, shape, etc.).
5. Break the class into groups of three or four students.
6. Have each group make a graph showing how many of each type of fish there are in the tank.

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connecting  
across the  
curriculum

#### English/ Language Arts

Read the class a book involving fish to introduce the activity. Possible titles include books from the *Rainbow Fish* series by Marcus Pfister, *Swimmy* by Leo Lionni, or *The Fish Who Could Wish* by John Bush.



INCORPORATING  
TECHNOLOGY

Have students create a pictograph using clip art. Have them choose one picture for each category and repeat the picture the appropriate number of times.

Standards Links  
1.1.1, 1.1.10, 1.4.1

## Activity (continued)

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### C. Solving Related Problems

1. Have students determine the total number of fish on the board.
2. Provide students with objects to assist in their calculations if needed.

### D. Discussion

1. Have each group explain its graph to the rest of the class.
2. Ask each group how many fish in each category they found and how many fish are in the tank altogether.
3. Discuss the different methods used to make the graphs.

## Questions for Review

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### Basic Concepts and Processes

During the activity, discuss the following questions with your students to gauge their understanding of the Standard Indicators:



What shape is this fish?



How do you make a graph?



How did you decide how to make your graph?



How did you figure out the total number of fish in the tank?

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