

The Tangram Parrot

In this lesson, students use different combinations of pieces from two sets of Tangrams to cover the outline of a parrot. They record the pieces they used and look for different solutions. Use this lesson to build spatial thinking, geometric concepts, and problem-solving.

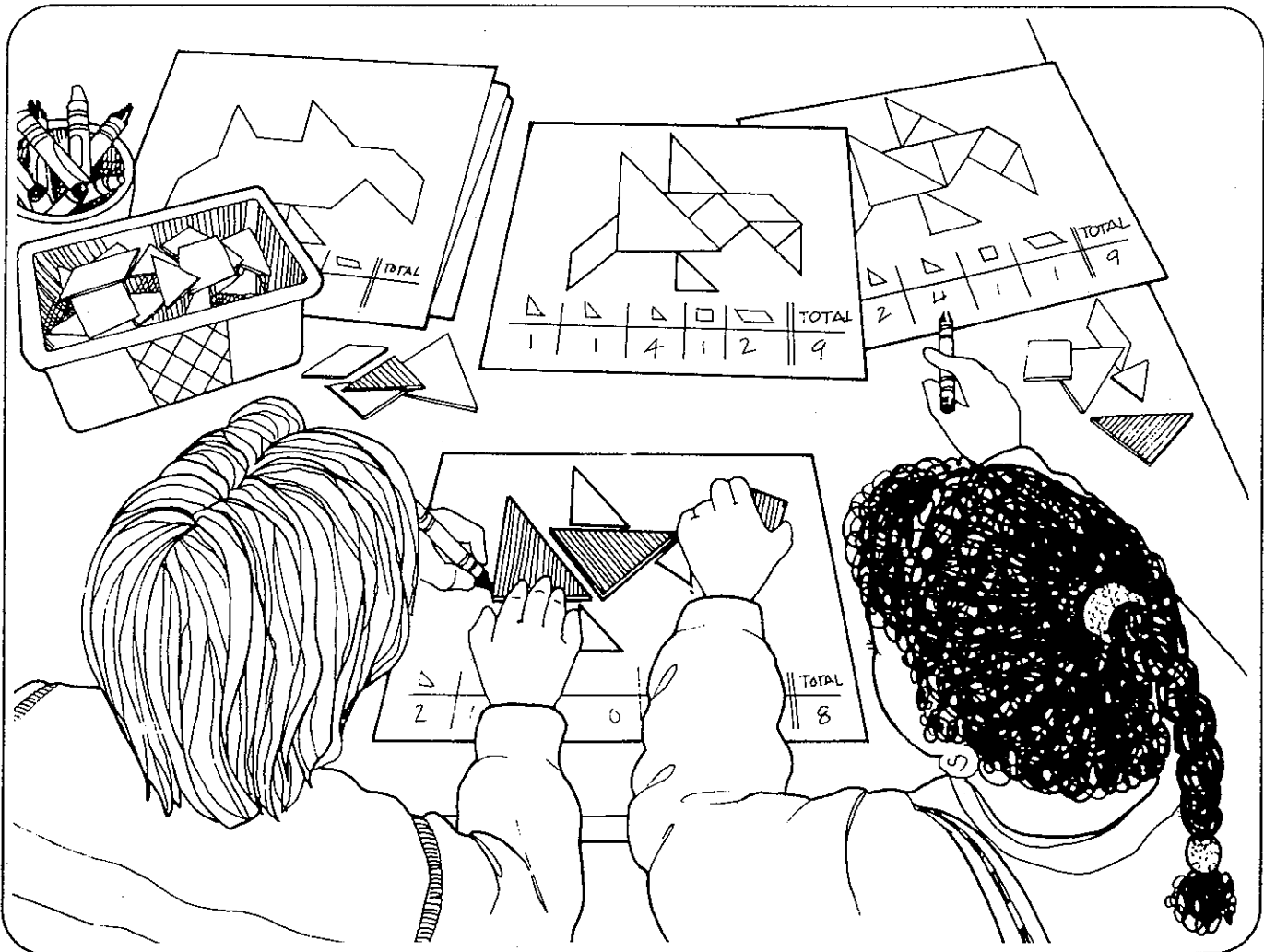
Classroom Organization

Eight groups of four sharing materials
Working in pairs

Materials

Each pair of students will need these materials:

- 2 sets of Tangrams
- 4 copies of The Tangram Parrot Recording Sheet, page 67





Introducing the Problem

When you cover the Tangram parrot with one set of Tangrams, you can arrange the pieces different ways, but you will always need all seven pieces. With two sets of Tangrams, there are many different groups of pieces that will cover the parrot.

Can you and your partner use two sets of Tangrams and find four different groups of pieces that will cover the Tangram parrot?

Exploring with Tangrams

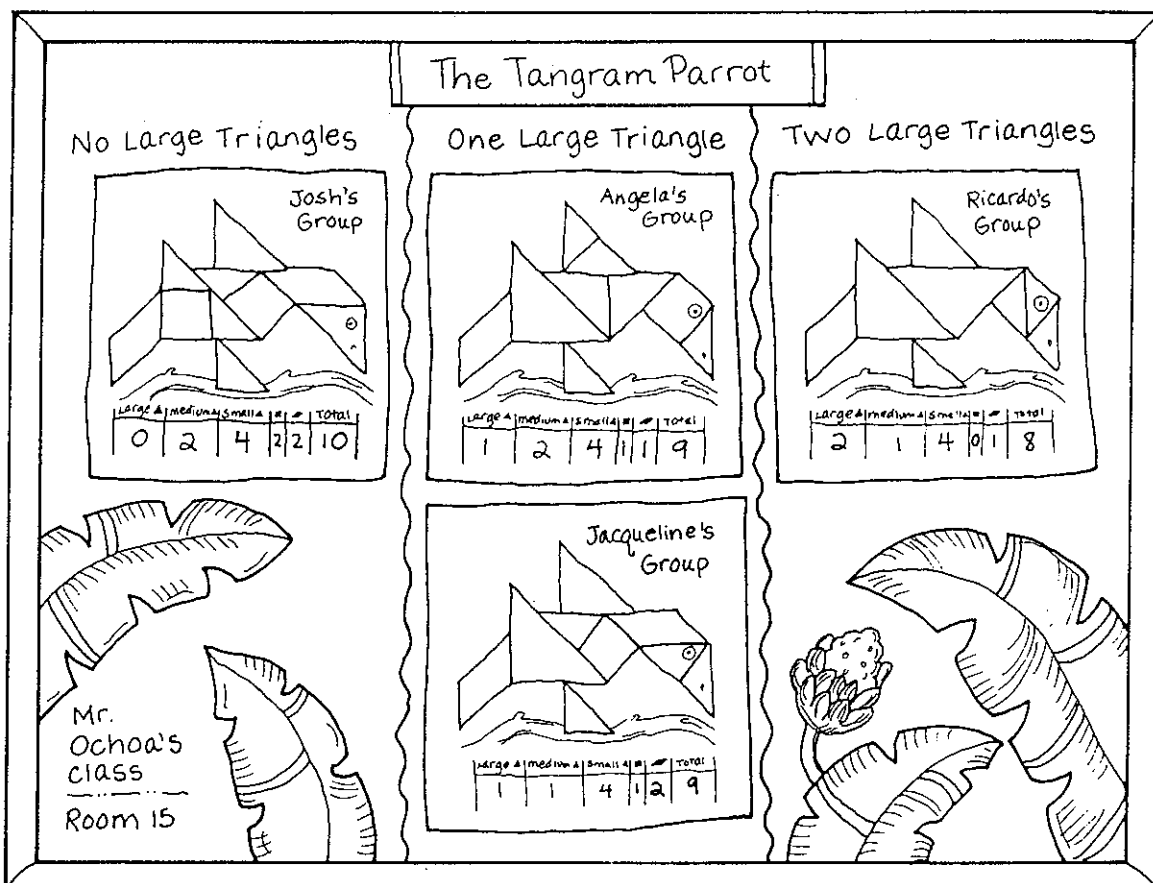
1. Tell each student to take a recording sheet and one set of Tangrams. Tell the students to find a way to cover the parrot with those seven pieces. When everyone in the group has found a way, compare the arrangements.
2. Next, tell the students to work with a partner, using two sets of pieces to cover one parrot. (They will not use all of the pieces.)

Recording the Connection

1. When the partners have found a way to cover the parrot, they should record it by tracing around the pieces. They should complete the chart on the recording sheet, telling which pieces they used.
2. Challenge each pair of students to try to find four different ways to cover the parrot, using pieces from two sets of Tangrams. (Two ways are different if different groups of pieces are used. A different arrangement of the same pieces doesn't count.)

Reporting and Displaying

When each pair of students has completed four Tangram parrots, tell the class that you want to display the solutions on the wall. Ask them to think of a way to arrange them, putting together the solutions that are alike in some way. Use one of the ways the students suggest.



Solutions and Suggestions

There are many ways to sort and organize the solutions. Students may suggest putting together solutions having some pieces alike (those which have one square, those which have two squares, etc). They may suggest organizing them by total number of pieces used.

Encourage students to look for solutions with combinations of pieces that no one has used. (Can you find a way with no large triangles?) This activity is rich with classification possibilities and also encourages the important *How many ways?* thinking used in problem solving.

For more activity ideas, see *Tangram Patterns*, Creative Publications, Catalog Number 10121; and *Hands On Tangrams*, Creative Publications, Catalog Number, 34499.

