Activity 17

Getting in Shape Again

Objective

Students improve shape recognition by using simple directions to build pattern block rockets.

Standards

Mathematics, Language Arts

Materials

- Tubs of pattern blocks
- Assorted math manipulatives
- Chart paper
- Markers
- Journals or a piece of paper, 1 per student
- Pictures of rockets
- Drawing of Proton (Figure 4, page 76) and Soyuz (Figure 5, page 77), colored
- Drawing of space shuttle (Figure 3, page 75), colored

Educator Information

- Assemble a variety of math manipulatives, including pattern blocks, for students to use to create rockets.
- Use chart paper and markers to create a list of directions to build a rocket out of pattern blocks. For example: *Use four green triangles; use one red trapezoid.* Depending on the ability level of students, directions could use pictures and numerals such as 4 Δ or 2 □ instead of words.
- Develop a list of oral directions for the students.
- Copy and color drawings of rockets. Laminate for future use.
- This activity may work better in a small group environment.

Procedure

1. Show students the drawings and pictures of rockets. Have them compare and contrast the way the rockets look.
2. Ask students to practice building rockets with pattern blocks. Allow students to have free exploration time with pattern blocks.
3. Explain to students that they will build a pattern block rocket using simple directions.
4. Show students the chart with the directions. Read the directions together.

5. Let students independently build rockets using the directions. Their rockets, like real rockets, look different.
6. When their rocket is complete, make sure students review the directions to check their work.
7. Ask students if all the rockets look alike. Discuss similarities and differences in the rockets. The rockets may look different, but all should have the same shapes and the same number of each shape. Have students count the number of each shape.
8. Have students draw a picture of their rocket in a journal or on a sheet of paper. If appropriate, have students list the directions.
9. Have the students repeat the activity following oral rather than written directions.
10. Students can use a variety of math manipulatives to build rockets and practice shape recognition. Have students develop new directions to build the rockets.

Assessment

- Observe students as they follow both oral and written directions to build rockets.
- Ask individual students to describe the rocket they built. Evaluate identification of pattern block shapes.

Enrichment

- Encourage students to build a rocket using a specified number of pattern blocks. For example, use 20 pattern blocks to build a rocket. After the rocket is complete, have students count the pattern blocks used in the rocket. Ask students if they used the correct number of pattern blocks. Count the number of each shape. Draw the rocket.
- Using pattern blocks, let students build a rocket independently without specific directions. When the rocket is complete, tell students to sort the shapes to determine how many of each shape was used. Have students count the number of each shape utilized. Use simple graphs to count and compare the number of each shape. Have students develop their own graphs. For example, students make a bar or horizontal graph using ice cube trays. Place shapes in ice cube trays and count the number of shapes used.
- Review opposite words, *short* and *tall*, and *big* and *little*. The students build two rockets that fit those criteria.
- Let students explore trading shapes in their pattern block rocket. For example, have students consider how many green triangles would replace one red trapezoid.
- Encourage students to create 3-D rockets using pattern blocks.
- Compare pattern block shapes to Tangram shapes. Find similarities and differences.
- Have students use position words, such as *over, under*, or *between* to describe the position of shapes in their rockets.
- Select books from the *Suggested Reading* list or other sources that depict the building of rockets. Examples include *Rocket* by Mike Inkpen, *Ritchie's Rocket* by Joan Anderson, and *Mooncake* by Frank Asch. Ask students to identify the shapes used to build the rockets in the books. Compare these shapes to pattern block shapes.

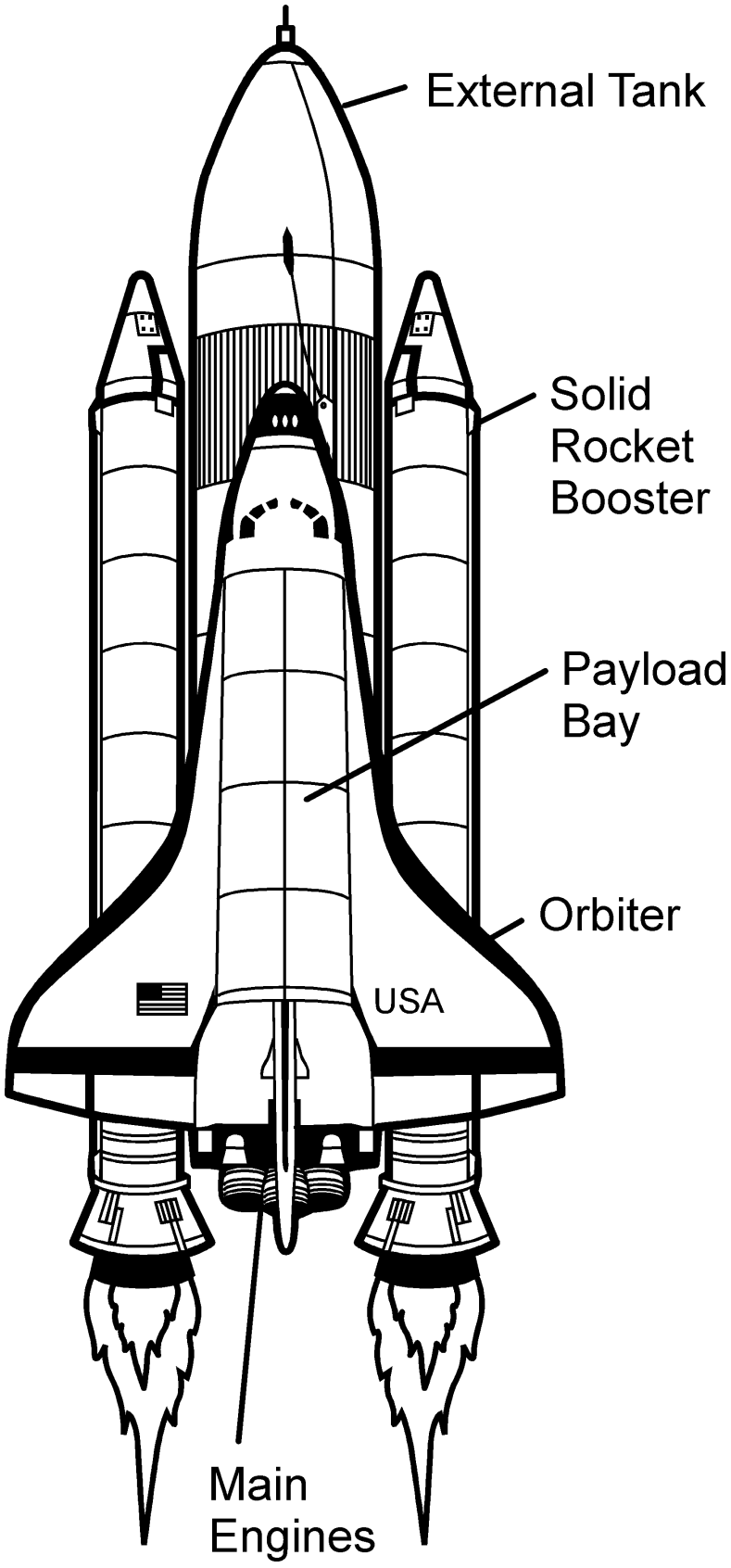

Figure 3. Parts of the Space Shuttle

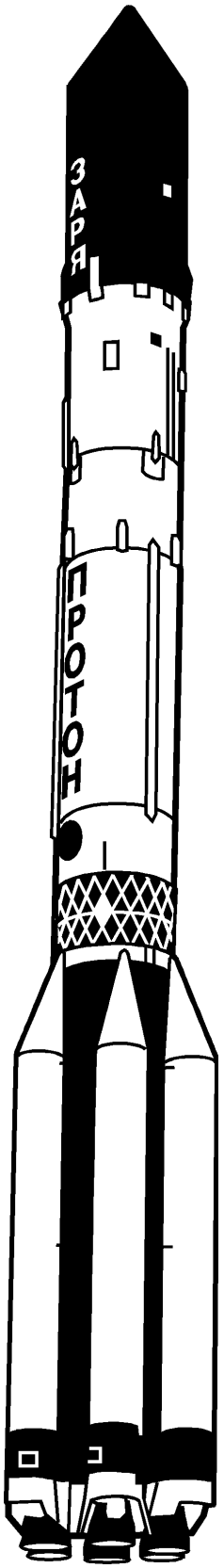

Figure 4. Proton Rocket

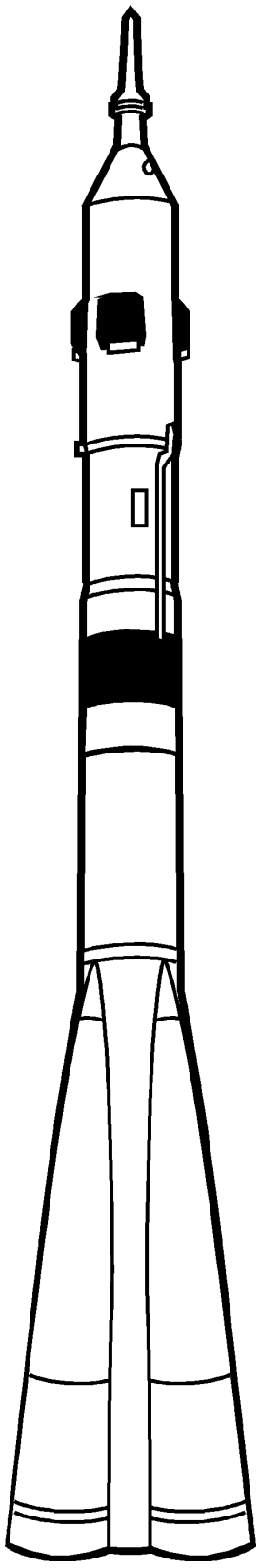

Figure 5. Soyuz Rocket