

ACTIVITY 16

GETTING IN SHAPE

Objective

Students create rockets out of shapes and practice shape recognition.

Standards

Mathematics

Materials

- Tangram rocket (Figure 17, page 86), 1 per student
- Tangram pieces (Figure 18, page 86), 1 set per student
- Markers or crayons
- Scissors
- Glue or glue sticks
- Pictures of rockets

Educator Information

- Make copies for each student of the Tangram rocket and the Tangram shapes.
- Be prepared to demonstrate to students how to build a rocket out of Tangram shapes. Have an example ready to share with students.

Procedure

1. Show students rocket pictures. Look at the different shapes that comprise the rockets.
2. Show students the Tangram rocket.
Demonstrate how to build a rocket out of the Tangram pieces.
3. Distribute the rocket and shapes to students.
4. As a class, count the number of squares, the number of triangles, and the number of rectangles.
5. Ask students what shapes are not included. There are no circles, diamonds, trapezoids, hexagons or ellipses.
6. Direct students to color each shape a different color. For example, *all squares are red; all rectangles are blue; all triangles are green.* Directions could be oral or written on a chalkboard. Use pictures rather than words for non-readers.
7. Students cut out the shapes.
8. Using ordinal numbers, have students glue the Tangram pieces on in a certain order. For example: *Glue triangles first; second glue rectangles, and third glue squares.* Have students glue the shapes in the correct position on the pattern.



Assessment

- Observe students as they color shapes and glue them on the paper.
- Ask students to point to specified shapes on the rocket. Evaluate.

Enrichment

- Introduce or review the concept of *symmetry*. Ask students to determine if the Tangram rockets have symmetry. Look at individual shapes on the rocket. Decide if they are symmetrical. Look closely at the triangles. Only one is symmetrical. In looking for symmetry in squares and rectangles, encourage students to think of different ways to divide these shapes in half. Find objects in the room that are symmetrical.
- Use the Tangram pieces as a template. Cut the shapes out of cardboard or imitation leather material found at fabric stores. Have students use the shapes to build a rocket on a table. Carefully place a piece of paper over the shapes. Students make a rubbing. Use the long side of an unwrapped crayon to gently rub across the paper. Be careful not to disturb the placement of the shapes. Pick up the paper to view the rubbing.
- Cut large Tangram shapes out of construction paper. Cut the same number and type of shapes as found on the Tangram rocket. Laminate for future use. Make a die with the Tangram shapes on it. Provide students with a copy of the Tangram rocket to use as a guide. Students roll the die and choose a shape. Using the die to direct construction, they build a large Tangram rocket on the floor. If students roll a shape that is not available, simply roll again. Keep rolling the die until all shapes are used and the rocket is complete. Compare the rocket on the floor to the rocket on the page. Ask students if the rockets look the same. Students may use tally marks to track the number of rolls it takes to complete the rocket. Count tally marks by 5's or 10's. Build the rocket several times and compare the number of rolls. Students can also track the number of times they rolled triangles, squares, or rectangles.
- From the *Suggested Reading* list or other sources, select books 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 Tangram shapes.



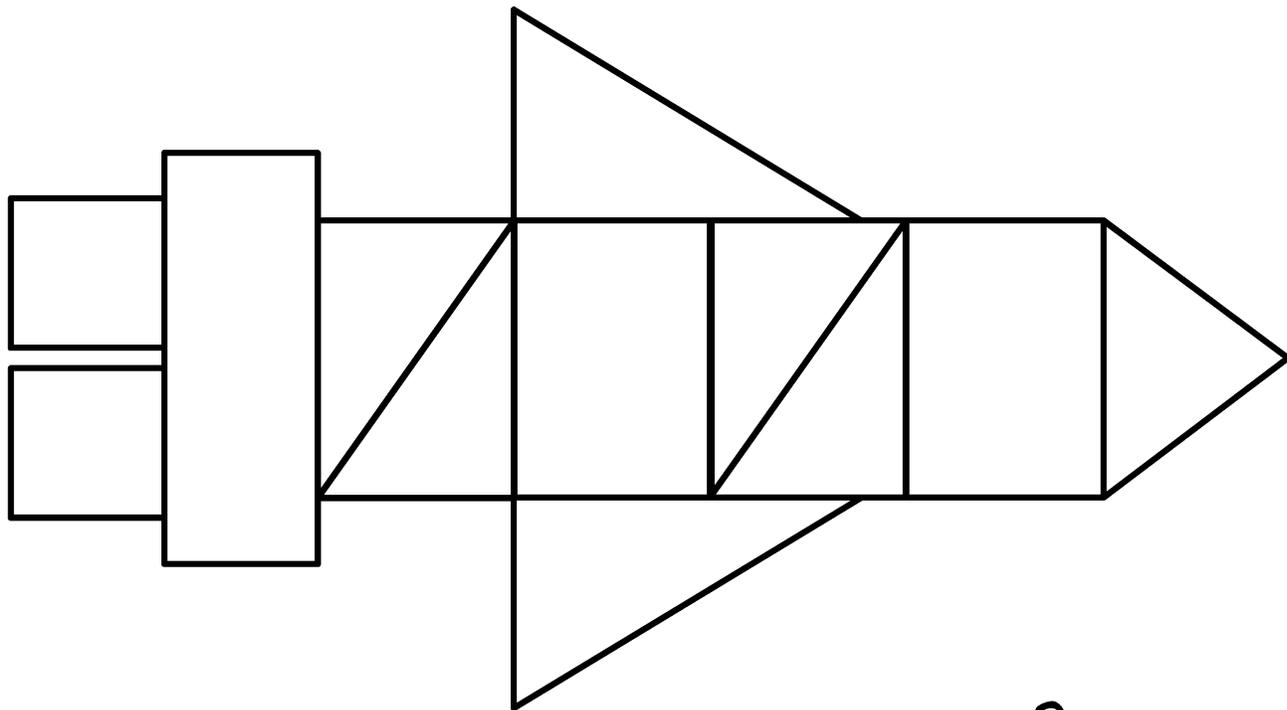


Figure 17. Tangram Rocket

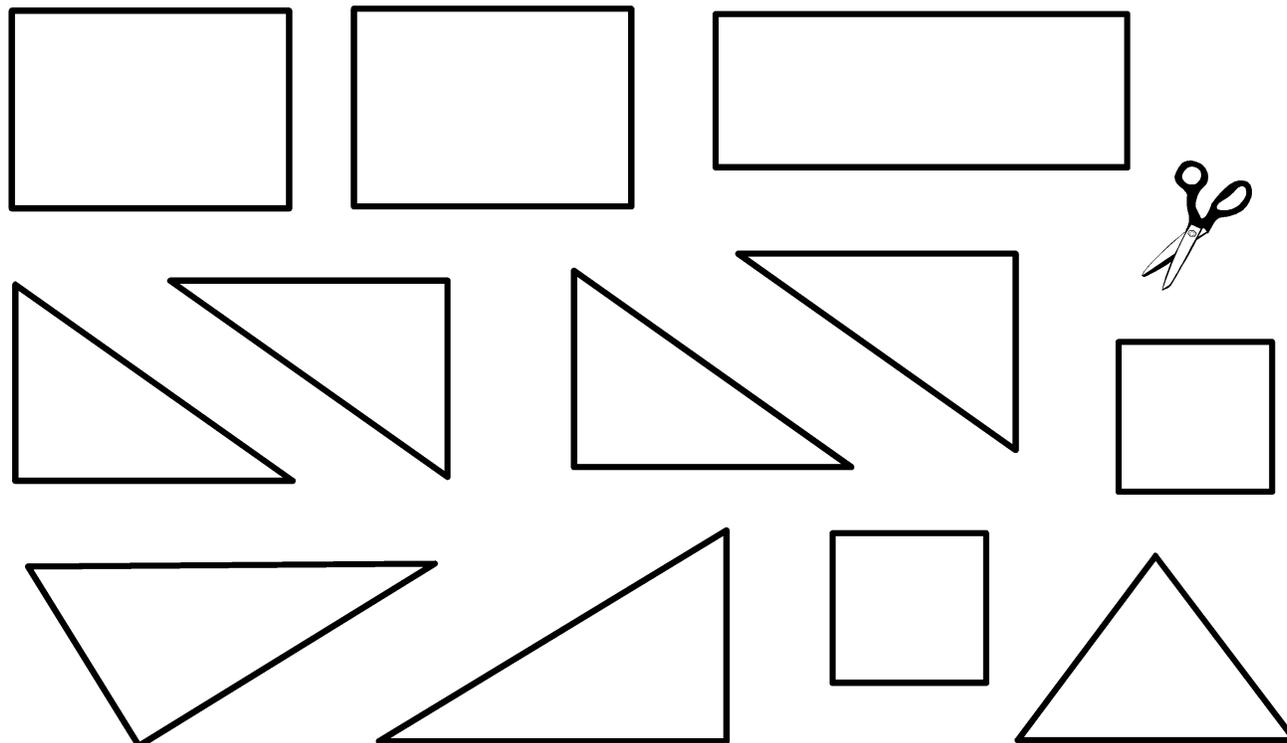


Figure 18. Tangram Pieces

