

Topics: Patterns, Data Analysis, Geometric Shapes

Materials List

- ✓ Paper, cardstock, or cardboard.
- ✓ Tangram die cut (available at RAFT) or scissors
- ✓ Copies of the tangram puzzles (see page 2)
- ✓ Optional: Graph paper

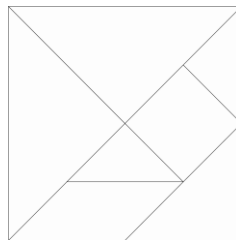
This activity can be used to teach:

Common Core Math Standards:

- Two Dimensional shapes (Grade 4, Geometry, 2, Grade 5, Geometry, 3-4)
- Problem Solving and Reasoning (Mathematical Practices Grades K-8)

Tangrams

Puzzle shapes you'll appreciate



This ancient Chinese puzzle offers creative ways for students to develop geometric and spatial skills.

Assembly

There are several ways to create a set of tangram pieces:

- Die cut a set of tangram pieces out of paper, cardstock, or cardboard (die cuts available at RAFT). Optional: laminate first for added durability.
- Draw, trace, or photocopy the pattern onto paper, cardstock, or cardboard. You might use graph paper to draw the pieces or download a template from the internet. Hand cut the pieces individually.

To Do and Notice

1. Copy the sheet on the next page and cut off or cover the lower half the page that contain the puzzle solutions.
2. Solve the puzzles on page two by arranging the seven pieces from one tangram set to create a shape that has the same shape in the puzzle. No piece may overlap and the solution must contain all seven pieces.

The Content Behind the Activity

Traditionally, tangrams were made from clay, bone, or stone. A tangram set consists of the following seven pieces: 2 large isosceles right triangles, 1 medium isosceles right triangle, 2 small isosceles right triangles, 1 square, and 1 parallelogram. The word Tangram when translated in Chinese literally means “the seven boards of cunning”. Each piece is called a “tan”. The earliest known Chinese book on Tangrams was written in 1813, although the puzzle was created long before that. There are several legends regarding the historical origins of the puzzle, none of which has been independently verified.

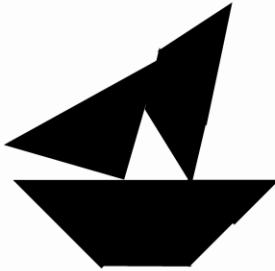
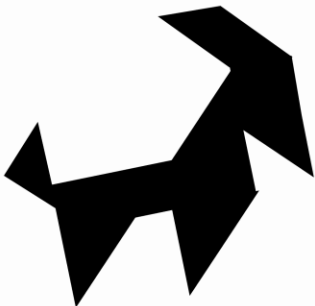
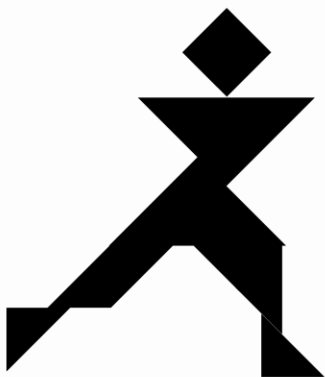
Taking it Further

- Have students create their own puzzles and have other students solve them.
- Cut large tangram pieces out of foam, attach handles to the backs of the pieces, and have groups of students create plays or dances by forming different tangram puzzle solution shapes.
- Use a straightedge, compass, and/or right triangle to draw the tangram pieces using geometric constructions.

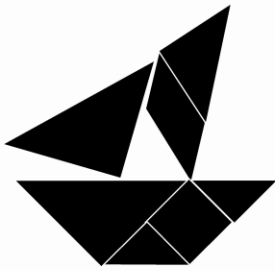
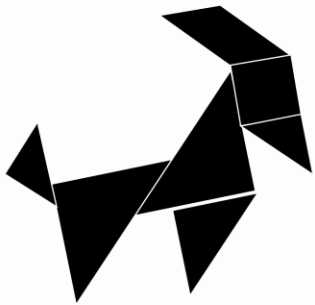
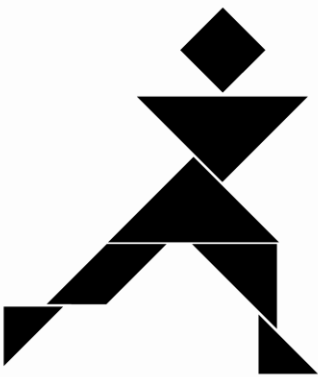
Web Resources (Visit www.raft.net/raft-idea?isid=476 for more resources!)

Additional tangram puzzles - <http://www.tangram-channel.com/tangram-puzzles/>

Tangram Puzzles



Tangram Puzzle Solutions



Tangram Puzzles from: <http://tangrams.ca/puzzles/fig-01.htm>