

TANGRAMS ACTIVITY

MATHEMATICS: Geometry
SOCIAL STUDIES: World cultures
ART: Two-dimensional constructions

AIM: Students analyze shapes in order to complete geometric puzzles.

BACKGROUND: The tangram is an ancient Chinese puzzle made from a large square cut into seven pieces. The seven pieces, or shapes, include a small square, two small congruent triangles, two large congruent triangles, a medium-size triangle, and a parallelogram. Each individual piece is called a tan. The tans can be arranged to make pictures.

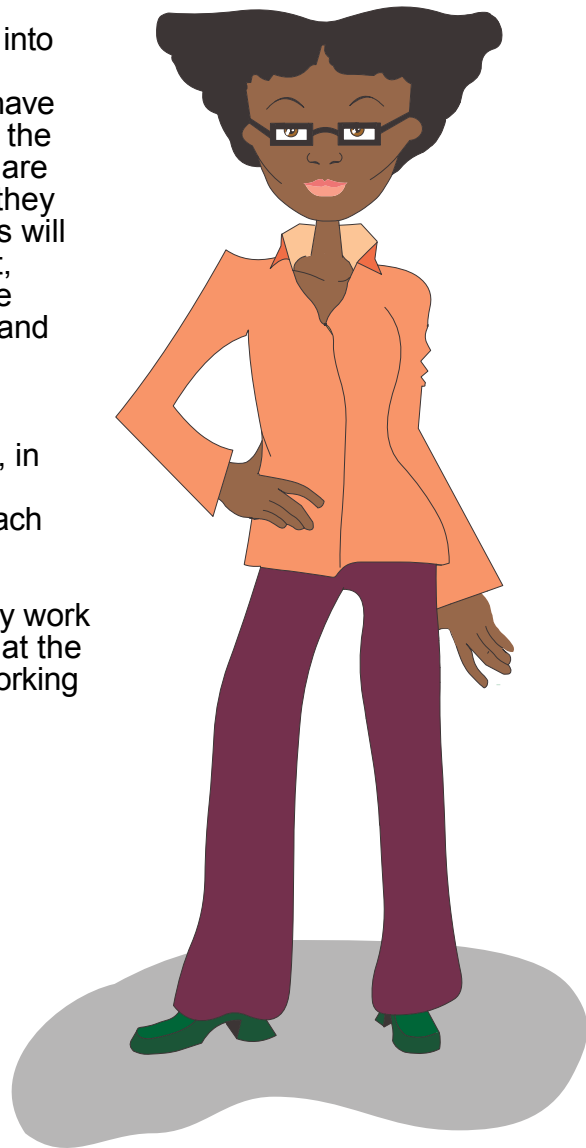
BEFORE PLAYING

Activity and Discussion: Break students into groups of four. Give each group a simple interlocking puzzle and tell them that they have three minutes to put together as much of the puzzle as they can. When three minutes are up, ask each group to explain any tricks they used to put the puzzle together. (Answers will vary. Examples: find the four corners first, separate the edge pieces from the middle pieces, separate puzzle pieces by colors, and so on.)

AFTER PLAYING

Writing Prompt: Ask students to explain, in writing, how they went about solving the tangrams. Did the same tactics work for each puzzle? Explain.

ASSESSMENT: Observe students as they work on the tangrams. Ask them to explain what the goal of each puzzle is and how they are working to reach that goal.



TANGRAMS ACTIVITY

RESOURCES

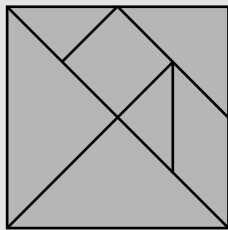
The Warlord's Puzzle, by Virginia Walton Pilegard (Pelican Publishing, 2000, \$14.95, ISBN 1-56554-495-1). This beautifully illustrated book tells a dramatic tale of an artist that gives an ancient warlord an exquisite square tile. The warlord loves the tile, but the artist accidentally breaks it into seven pieces. The warlord warns of punishment for the artist if the tile can not be fixed, and he offers a reward to the first person that can put the tile back together. To order, call 1-800-843-1724.

<http://www.strongmuseum.org/kids/tangram.html>

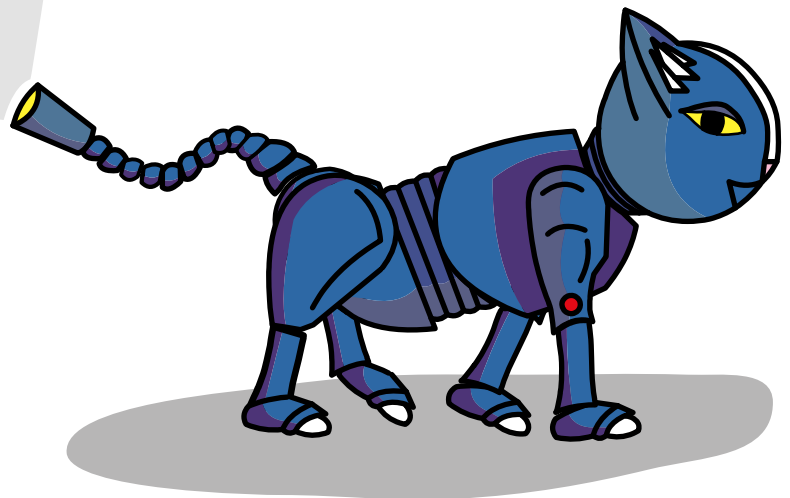
This site—designed for kids—will give your students a brief history of tangrams and provides several challenging puzzles.

ANSWERS

Before Playing, Worksheet:



After Playing, Worksheet:
(Tangrams will vary.)



TA-9.2

TANGRAMS ACTIVITY

CONNECT TO YOUR CURRICULUM

This activity can help you meet these National Standards:

Mathematics:

- Describe, extend, and make generalizations about geometric and numeric patterns
- Represent and analyze patterns and functions, using words, tables, and graphs
- Investigate how a change in one variable relates to a change in a second variable
- Build and draw geometric objects
- Create and describe mental images of objects, patterns, and paths
- Identify and draw a two-dimensional representation of a three-dimensional object
- Recognize geometric ideas and relationships and apply them to other disciplines and to problems that arise in the classroom or in everyday life

Science:

- Systems, order, and organization
- Evidence, models, and explanation
- Change, constancy, and measurement
- Abilities necessary to do scientific inquiry

CURRICULUM AREAS

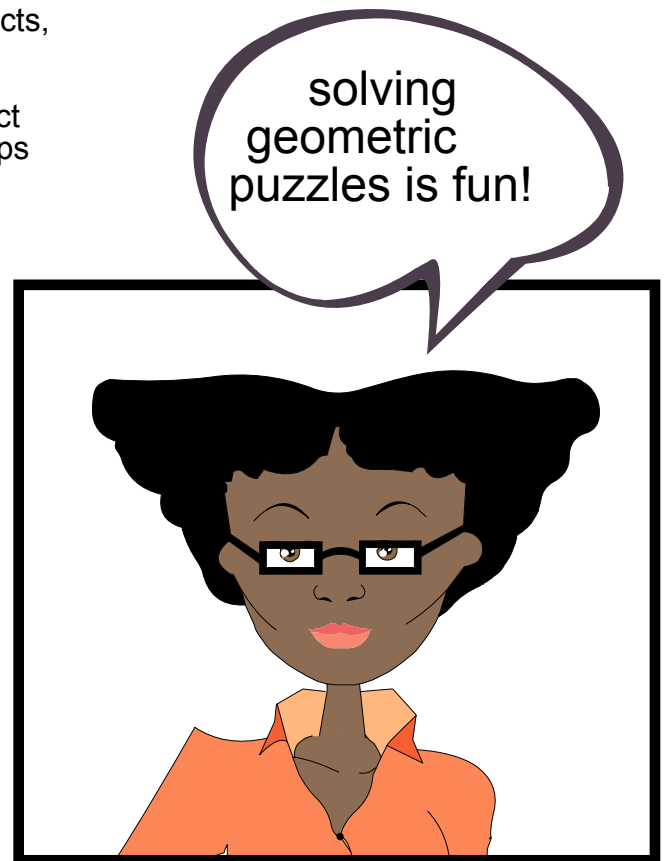
Math: geometry: logic.

Language Arts: descriptive writing.

Art: building geometric objects.

Technology: computer science.

Science: scientific inquiry.



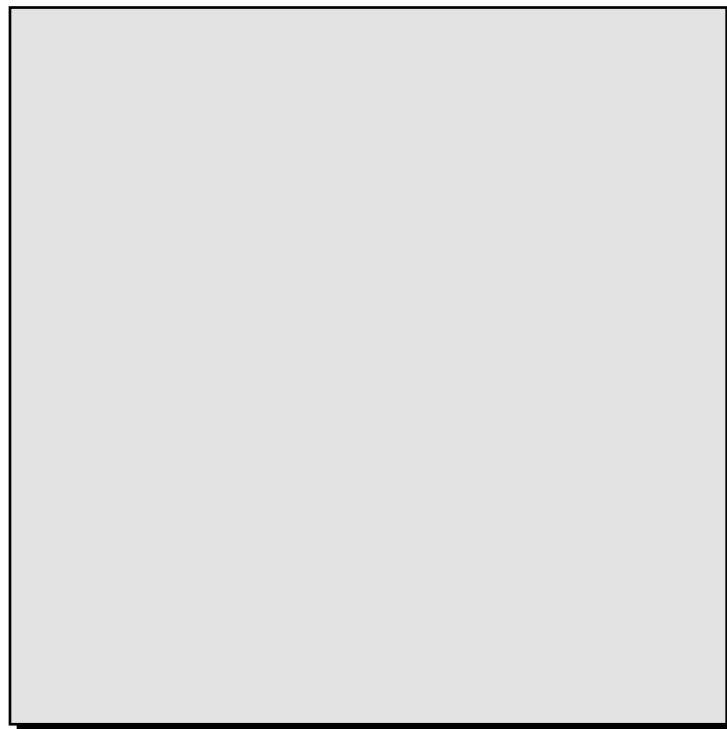
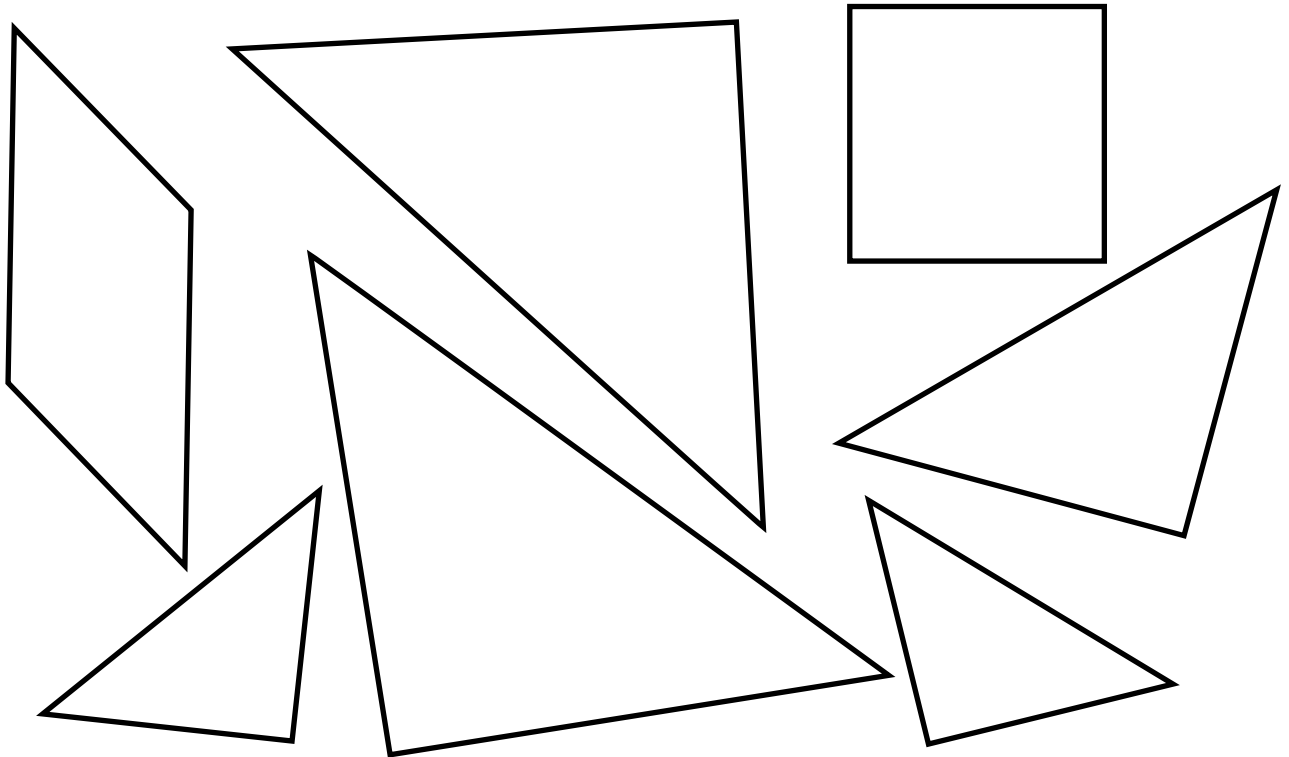
TANGRAMS ACTIVITY

(Before Playing Worksheet)

Name: _____

Date: _____

Cut out the seven shapes below and arrange them (so they don't overlap!) to fit in the shaded square.



SA-9.1

TANGRAMS ACTIVITY

(After Playing Worksheet)

Name: _____

Date: _____

In the box below, create your own tangram design. Use the tangram pieces that you cut out of your Before Playing worksheet.

Then, trace the outline of your design, give your tangram a title, and trade your worksheet for another student's. Can you complete each other's tangrams?

(Title of your tangram)

