

Teacher Notes

Overview

Tangram is a historic activity that develops geometrical reasoning skills. Tangram involves making various shapes by fitting together pieces. Tangram originated in Imperial China during the Tang Dynasty (c.600 – 900AD) and is thought to have arrived in Europe in the 19th Century.

With these resources students can fold their own Tangram pieces using another oriental practice, Origami. Alternatively, the pieces can be cut out. Students can then investigate the properties of the shapes of the pieces, before solving some Tangram puzzles with them.

Additional equipment:

- 4 pieces per Tangram set of Origami paper (or squares of normal paper)
- Scissors (if cutting pieces out instead of making them)
- Colouring pencils (for Tangram Properties Activity)

Downloadable Worksheets

- Origami Tangram Instructions
- Origami Tangram Instruction video
- Origami Tangram Cutouts (various sizes)
- Tangram Properties Activity
- Tangram Puzzles
- Tangram Solutions

Curriculum Topics

- Properties of polygons
- Geometrical reasoning

Making Origami Tangram pieces

- Give the students Origami Tangram Instructions and the Origami paper or squares of paper. It might make sense for students to work in pairs to halve the number of pieces they make each.
- Playing students the Origami Tangram Instructions video piece by piece may help!
- The instructions are based on those by Francis Ow Mun Yin, from bit.ly/owrigami

Quick Tangram Cutouts

- You could choose to print out one of the Origami Tangram Cutouts sheets for the students to cut the pieces out instead of making them.
- Equally, these are useful if some students do not manage to make all the pieces with Origami paper: when printed on A5 the pieces are the same size as the Origami pieces (print the cutouts that correspond with your Origami paper size).

Tangram Properties Activity

- The students will need their Tangram pieces (either the ones they have made or cut out), the Tangram Properties Activity sheet and some colouring pencils.
- Knowledge about the angles and lengths of sides in the pieces helps when trying to do Tangram puzzles. This worksheet is designed as a preparation activity for the Tangram puzzles. It encourages the students to think explicitly about the geometrical properties of the shapes.
- You may wish to check the students colouring of the table before allowing them to colour their Tangram pieces.

Tangram Puzzles

- Our Tangram Puzzles are mostly puzzles that make geometrical shapes or numbers, with a few fun ones at the end (can your students make the submarine?).
- An extension is to see if they can make any polygons not featured in the sheet.
- Please be aware that the puzzle pieces do not need to be face up, or in any particular orientation. The students may need to rotate them or turn them over.