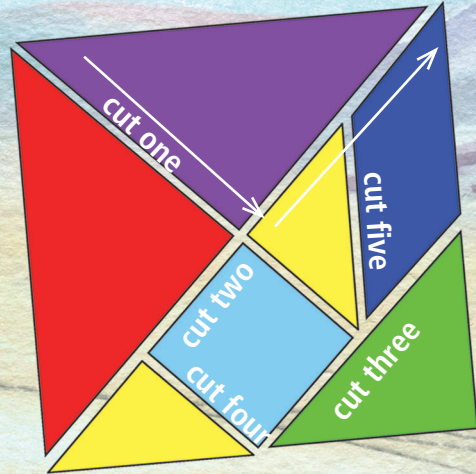
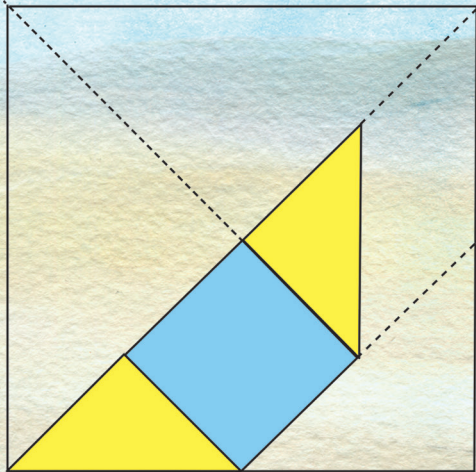


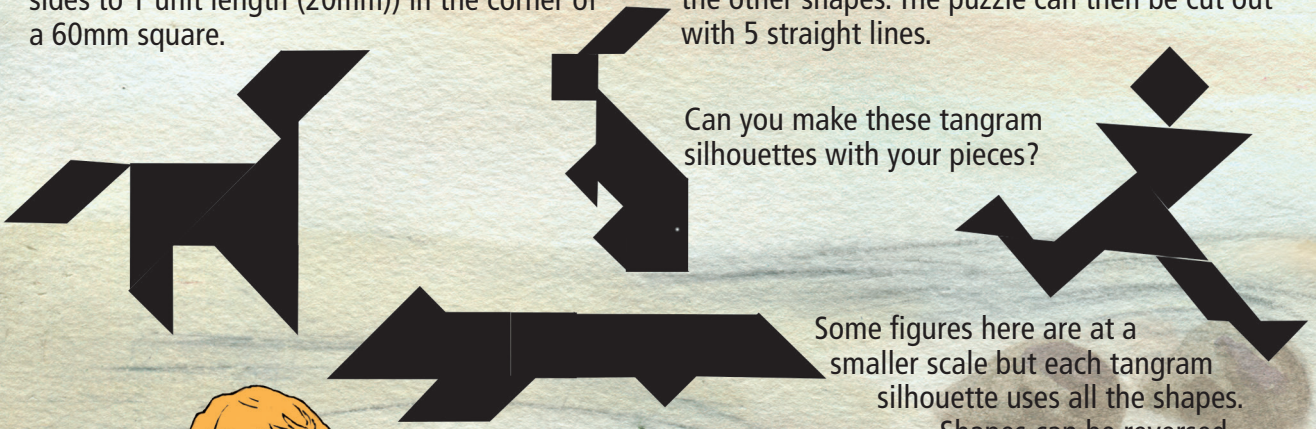
Use Mathomat to explore the ancient seven-piece Tangram puzzle.

Investigate Tangrams



Made up of only 5 triangles and 2 quadrilaterals, a tangram is easy to draw with Mathomat. Start by drawing an isosceles triangle (use the tangram tool, shape 1, short sides to 1 unit length (20mm)) in the corner of a 60mm square.

Place a square (shape 22 on V7) alongside the triangle and add another isosceles triangle as shown with the tangram tool. Extend the lines of the square, also using the tangram tool, to create the other shapes. The puzzle can then be cut out with 5 straight lines.



Can you make these tangram silhouettes with your pieces?

Some figures here are at a smaller scale but each tangram silhouette uses all the shapes. Shapes can be reversed.

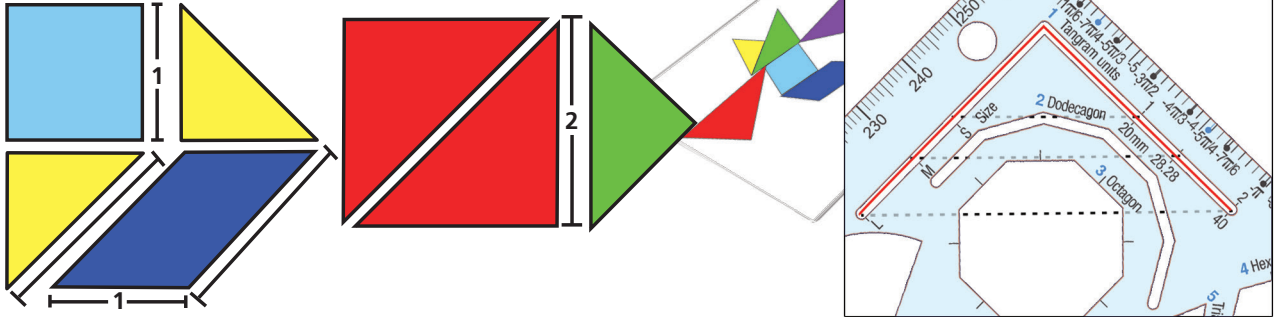
Keep the 7 pieces in the sleeve of your Mathomat pack.

Can you make tangram numbers? Here's a 'three'.

Clever! If we don't have to use all seven pieces, I wonder how many mathematical shapes we can make...

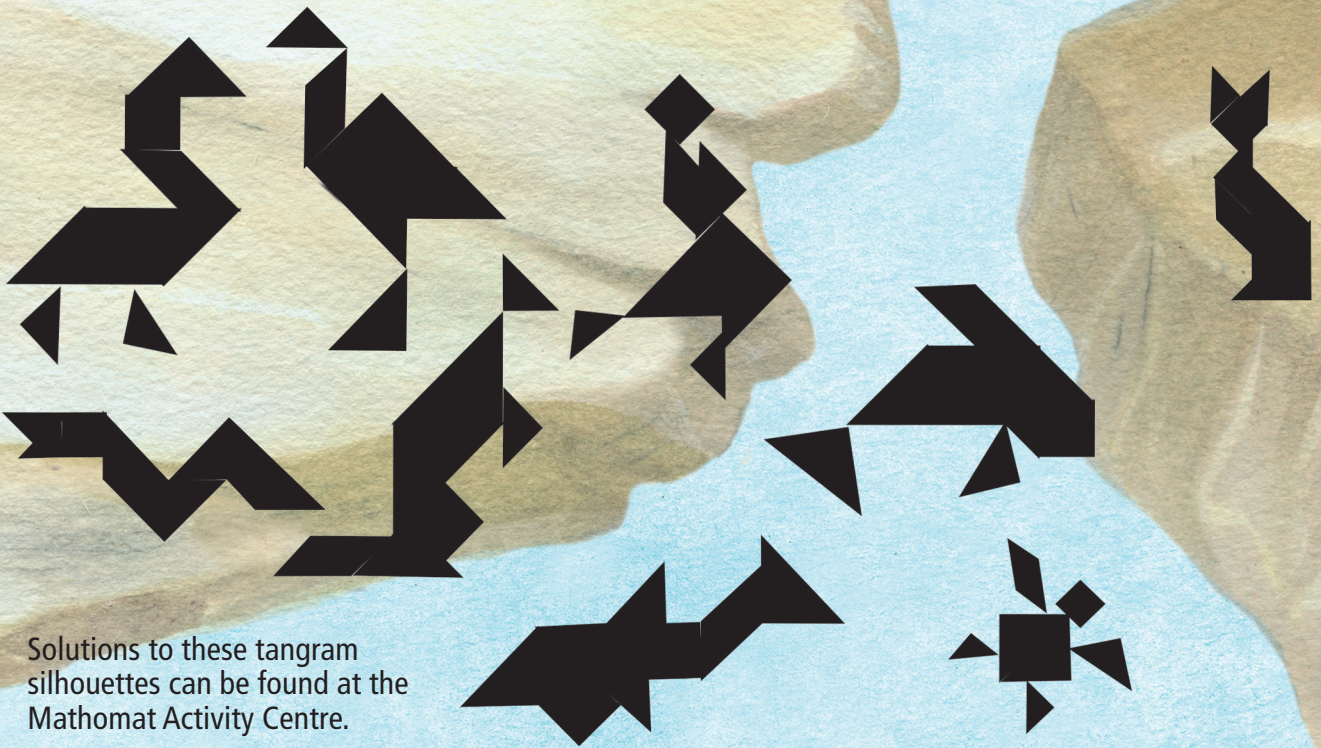


Tans and tangram units



The 7 shapes are called 'tans'. The side length of the square is 1 tangram unit. Most tans have sides of either 1 or 2 units in length as shown above. The parallelogram long side and the hypotenuse of the small triangle are congruent (28.28 mm).

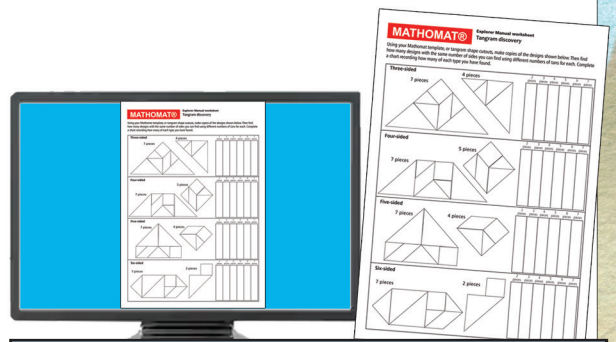
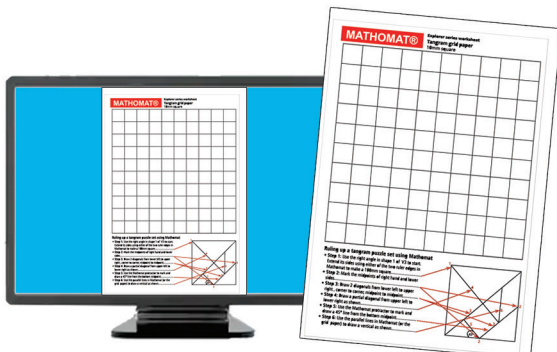
Use the Mathomat tangram triangle tool, shape 1, to make all three triangles and re-draw your tangram patterns. The 28.28 mm point is marked between the 1 and 2 units (20 and 40 mm).



Solutions to these tangram silhouettes can be found at the Mathomat Activity Centre.

You can use the ruler sides in Mathomat to make a larger tangram set from a 100mm square. Using grid paper helps as well. Print out a grid paper worksheet with instructions from MAC.

How many mathematical shapes can you make using some or all of the pieces in your tangram set? Print instructions from MAC.



Also discover the Magic Egg Tangram puzzle on pages 36 - 37 and to print out in MAC (activity 6.2).