

Activity sheets

Set 4

Towers of Hanoi

Give pupils the challenge:

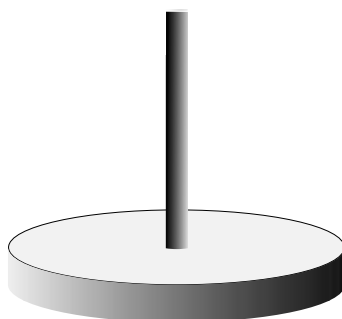
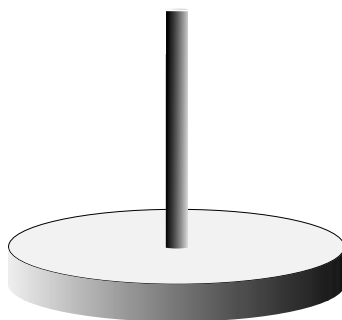
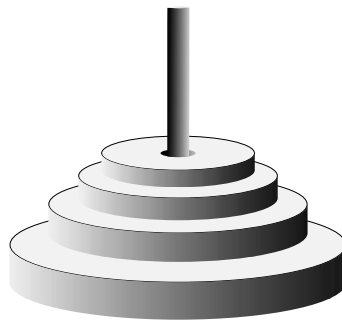
Move the tower to the third stick in the smallest possible number of moves.

Start with either three discs (seven moves) or four discs (15 moves).

Rules

You can only move one disc at a time.

Large discs cannot cover smaller discs.



Frogs

Lay out a series of hoops on the floor of the hall. These are the 'lily pads'.

Pupils stand on the lily pads. They are 'frogs'.

The aim is for all the frogs on a green lily pad to finish up on a blue lily pad, and vice versa.

Those starting on a green lily pad can only move to the right.

Those starting on a blue lily pad can only move to the left.

Frogs can slide to the next lily pad or jump over another frog to the next empty lily pad.

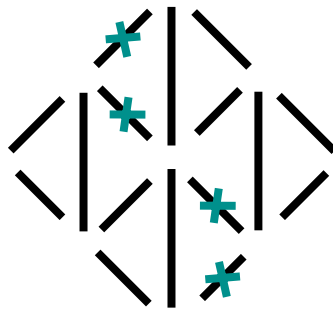
The frogs have to swap places in the least number of moves.



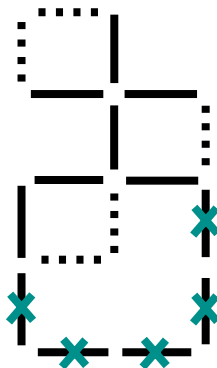
Matchstick puzzles

Lay out matchstick patterns as shown below, and give pupils the following challenges:

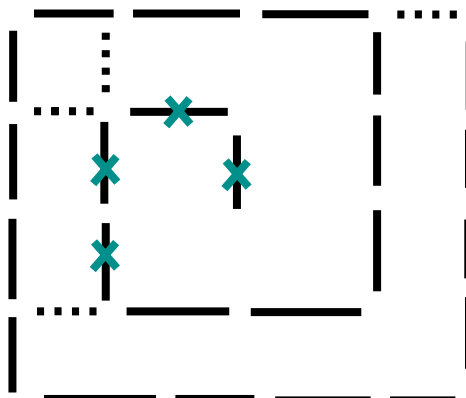
1. Take away four sticks to leave exactly four equilateral triangles, all the same size.



2. Convert this 'church with a tower' symbol into three identical squares, by moving five sticks.

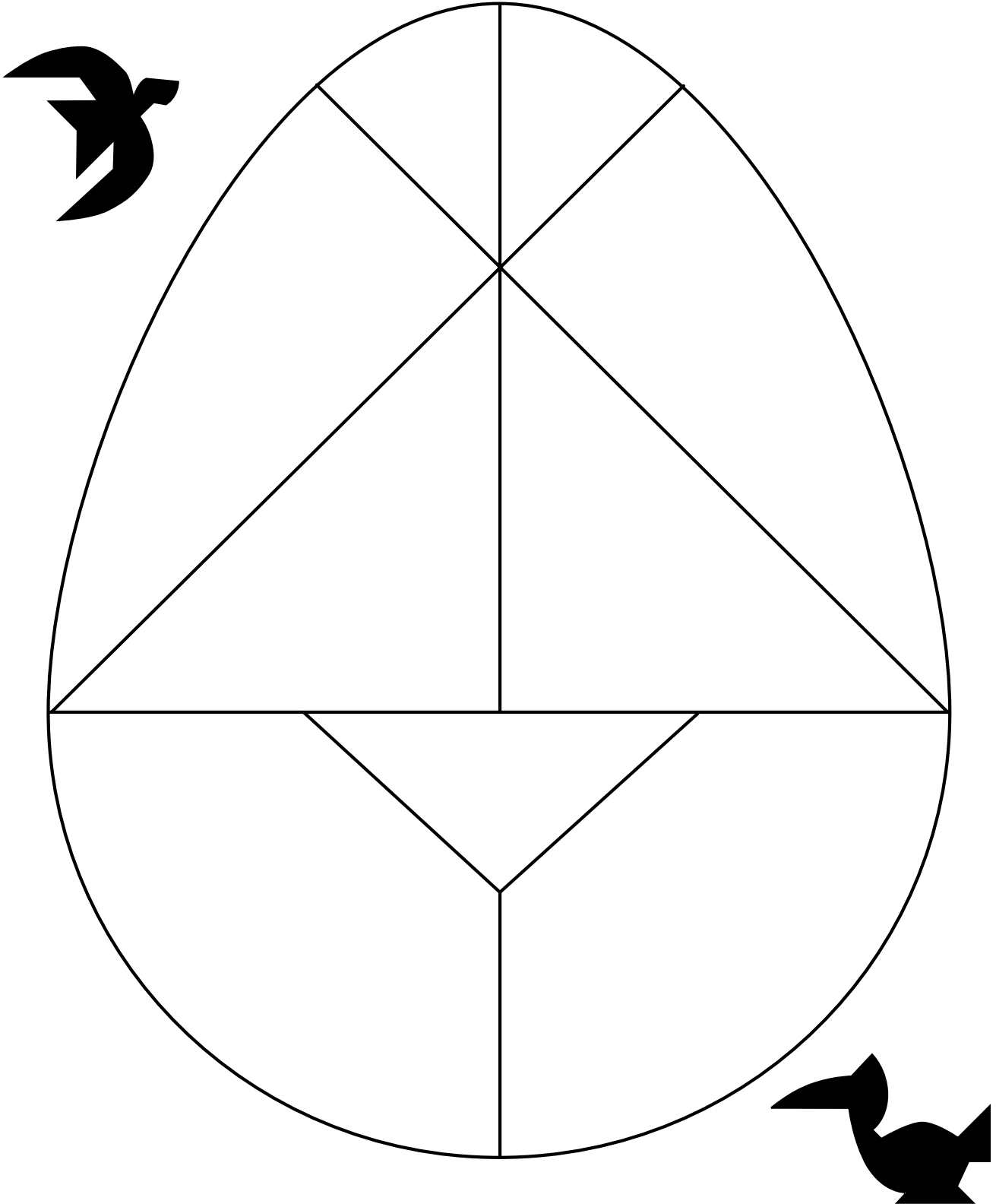


3. Turn the spiral into three squares by moving four sticks.



Tangram egg

Photocopy and enlarge this page, cut out the tangram egg and mount it on card. Challenge pupils to create different shapes and images from the tangram.



Chinese number jigsaw

一	二	三	四	五
六	七	八	九	十
十一	十二	十三	十四	十五
十六	十七	十八	十九	二十
二十一	二十二	二十三	二十四	二十五
二十六	二十七	二十八	二十九	三十
三十一	三十二	三十三	三十四	三十五

Enlarge this grid of Chinese numbers and mount it onto card. Cut the grid into irregularly-shaped pieces along the bold lines.

Ask pupils to try to figure out the number system and put the jigsaw back together again.

River crossing puzzles

Give pupils the following challenge:

A group of children and adults have to cross a river.

They have a boat, but the boat can only carry one adult or up to two children at a time.

How can everyone cross the river if the group consists of:

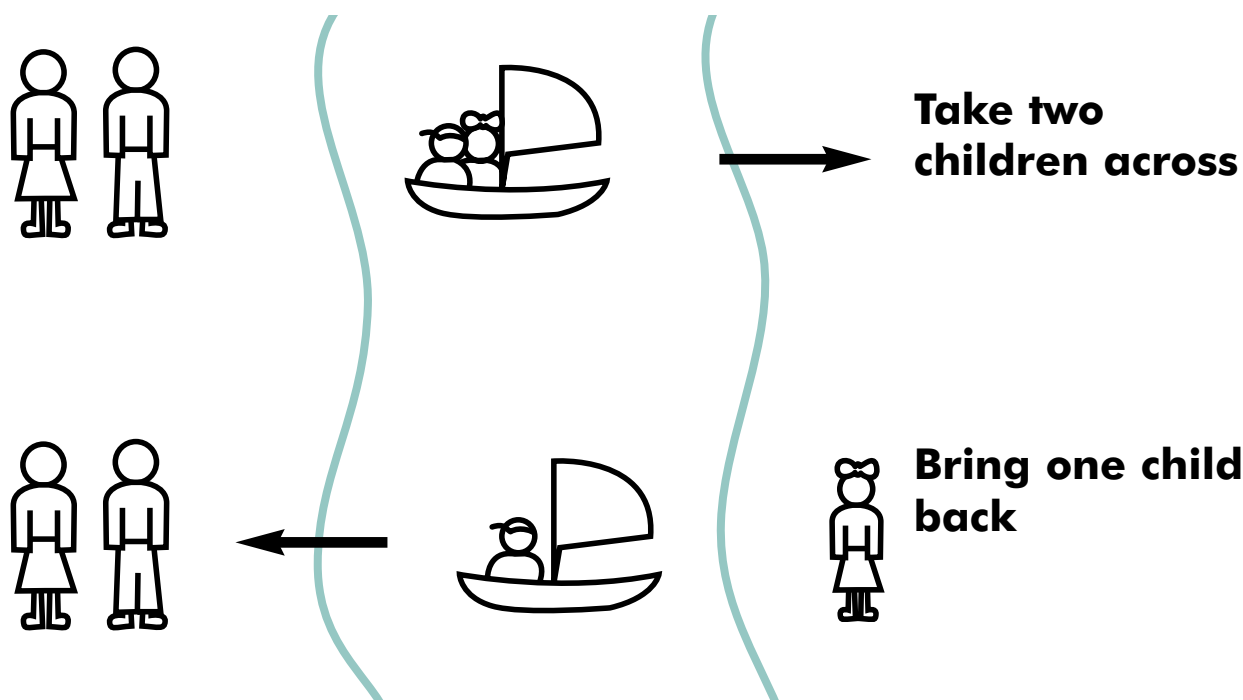
1. one adult and two children
2. two adults and two children
3. one adult and three children?

Investigate larger groups.

You can act out the river crossings in the playground.

Eg

First two moves for two adults and two children:



Recipes

Peppermint creams

makes 25 sweets

- 225 g (8 oz) icing sugar
- 1 egg white
- few drops of peppermint essence

Beat the egg whites until they form peaks.

Add the icing sugar until a stiff paste is formed, then add a few drops of peppermint essence.

Knead the paste lightly and roll it out to about half a centimetre thick.

Stamp out 1 inch (or 2.5 cm) rounds using a plain cutter.

Leave the mints to dry for about 24 hours.

Biscuits

makes 16 biscuits

- 110 g (4 oz) butter
- 50 g (2 oz) caster sugar
- 175 g (6 oz) plain flour
- caster sugar for dredging

Cream the butter, add the sugar and beat until light and fluffy.

Mix in the flour and knead to form a ball.

Roll out on a lightly floured board until about half a centimetre thick.

Cut out with a 2 inch or 5 cm cutter and place on a greased baking tray.

Prick each biscuit twice with a fork and bake for 25 minutes at 300°C (Gas Mark 2).