

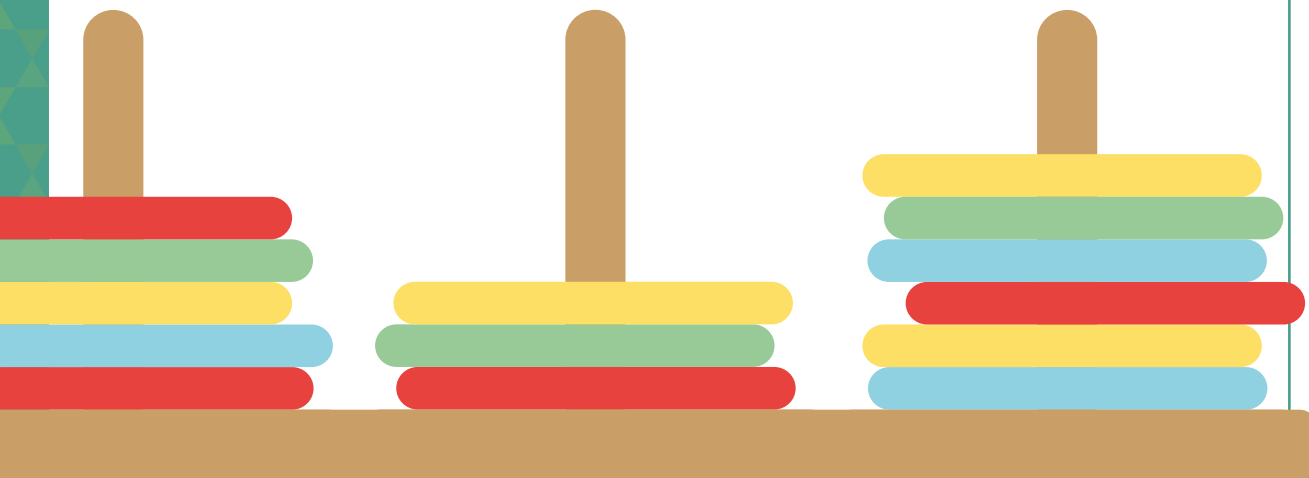
THE TOWERS OF HANOI

The Towers of Hanoi is a famous mathematical puzzle. It was invented by the French mathematician Édouard Lucas in 1883. In this activity we're challenging you to use your design and construction skills to make the puzzle - and then to solve it.

WATCH THE VIDEO

 tinyurl.com/HOC107

Please note: These videos were created to assist home learning during lockdown. They are still great to use in the classroom though.



Set-up: 20 minutes **Takes:** 15 - 20 minutes

Where? Indoors/outdoors

Who? Individual, pairs or small groups work great for this

You will need:

Card from a packing box or empty cereal box



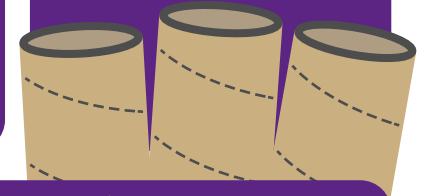
Pencil or pen



Scissors



3 x cardboard inner of toilet roll or kitchen roll



Glue or Sellotape



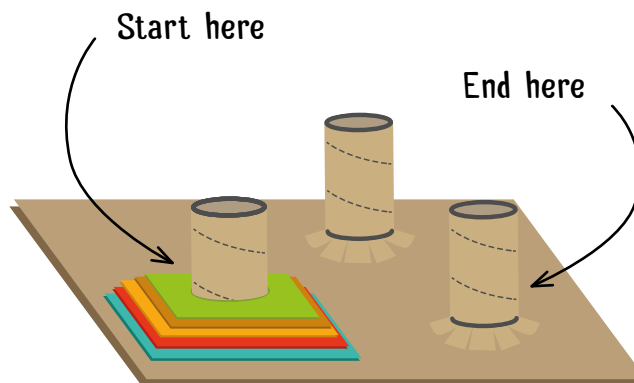
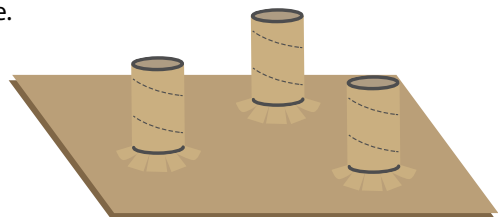
Safety

Take care when using scissors: children should remain supervised.

How to build your tower

- 1 **Cut 1 cm slits all around one end of the cardboard inner of an empty toilet roll or kitchen roll.**

Open out the flaps you've created to stick the roll upright onto a card base. Repeat with the remaining two rolls so that you have three towers in a row with a gap between each one.



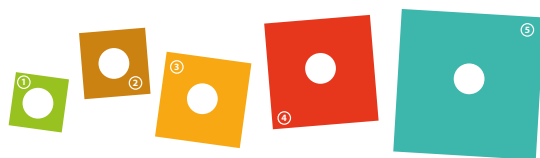
How to play

Following these rules, move the shapes around to remake the stack on a different tower.

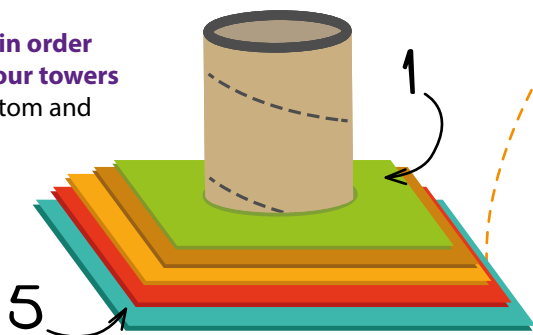
- You can only move one shape at a time
- Shapes must always be placed on a tower (apart from while you're moving it)
- Bigger shapes can't go on top of smaller ones

The game is completed when all 5 shapes have been successfully stacked on a new tower in order with number 5 at the bottom and number 1 on the top.

- 2 **Cut out five random shapes, bigger than the diameter of the cardboard rolls, making sure they vary in size.** Label them 1 to 5, the smallest should be numbered 1 and the largest 5. Cut a hole in the centre of each shape so they slot over the tower



- 3 **Place all the shapes, in order of size onto one of your towers** – number 5 at the bottom and number 1 at the top.



Variations

- If you're playing this with someone else you can blindfold one person. The blindfolded person is the only one allowed to touch the shapes, while the other guides them.
- Create a time restriction you must complete it in.
- Create more shapes for a larger stack.

Review and reflection

Here are some questions to help you reflect on this activity. We use this kind of reflective exercise to get the most out of the activities at our centres.

How well did you do in this game?

If you play it again how do you think you could do it quicker?

Was there any part of this game that you found hard?