

Step Through A Card

Be careful with this one. Not because it's a dangerous experiment but because you could hurt the feelings of a friend or family member. Make sure you check first before you go stepping through a special card. You'll see what I mean!

What do I need:

- A Christmas or birthday card that it's ok to step through (ruin!)
- Scissors

How do I do it?

STEP 1 - Get an adult to help out with making 5 cuts equally spaced through the 'spine side' of the card through to about 2cm away from the opposite edge of the card.

STEP 2 - Your card will now be divided into 6 sections. Next, turn your card around.

WARNING: DON'T cut the outer 2 sections.

STEP 3 - Make 4 cuts on the inner 4 sections from the outside edge of the card to 2 cm away from the 'spine edge'.

STEP 4 - Keep the card in the same position and cut through the 'spine edge' on the 4 inner sections of your card.

STEP 5 - Now it's time to put this thing to the test. Open your card up and have a go at stepping through it!

What's going on?

Seemed like it was going to be impossible didn't it?

This experiment is all about Topology (the science of shapes). In order to be able to step through the card we need to create a space in the card that's bigger than us. Kind of seems impossible but as you've just seen we can actually make a shape much bigger than us out of a pretty small card. Baffling but incredible.

Take a deep breath. Breathe out. Obviously you just used your lungs but did you know that the surface area of your lungs is about the same as that of half a tennis court! This is just like the our Step Through Christmas Card where shapes can be much bigger than we might first think.

More Fun Please - Experiment like a real scientist!

- What's the smallest card that you're able to step through?
- Can you come up with a better design to make a bigger shape from a smaller card?

