Build a pop-up Christmas card

Embrace your inner paper engineer and build a sensational seasonal pop-up card.

What you need
- White or red A4 card
- Scissors
- Ruler
- Pencil
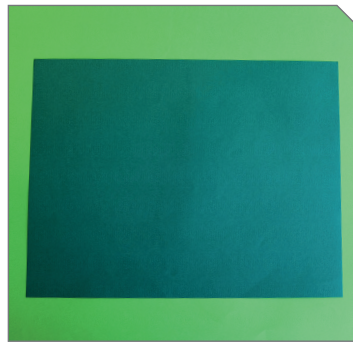- Green A4 paper
- Glue stick

VICTORIAN INVENTION
Sir Henry Cole and his artist friend John Callcott Horsley were thought to have invented the Christmas card in 1843. They sold around 1,000 that year.
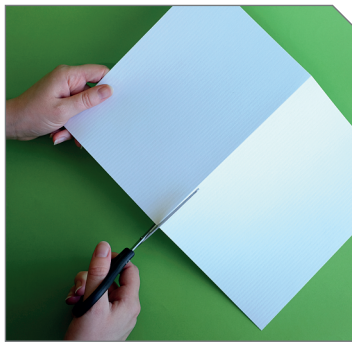
1 Fold the white A4 card in half and cut down the middle. Fold one of the smaller pieces in half and set aside.
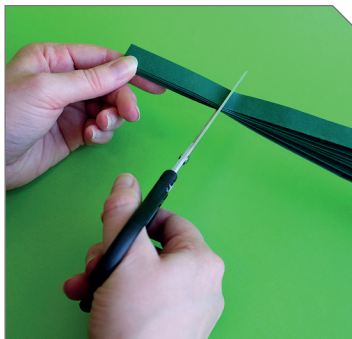

2 Place the green A4 paper in front of you with one of the longer sides nearest you (this is called landscape).

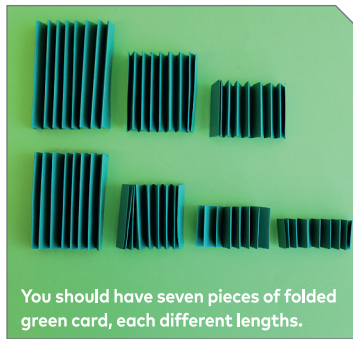This is called a concertina fold.

3 Starting at one of the longer sides, fold the green paper alternatively front and back in zigzag folds.

4 To see the easiest way of doing this, watch the video at tinyurl. com/SN-popcard

5 Once you have folded the green paper, use a ruler to mark seven centimetres up from one end and carefully cut it off.

You should have seven pieces of folded green card, each different lengths.

6 Now, measure six centimetres up from the bottom and cut; then do the same at five centimetres, then four, then 3.5, 2.5 and finally 1.5 centimetres.


7 Next, take the folded white piece of A5 card you set aside earlier and lay it out flat, with one of the longer sides facing towards you.


8 Starting about two centimetres up from the bottom of the white card, stick the longest piece of folded green card to the left of the fold.
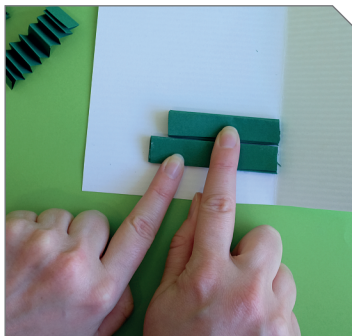
9 Then take the second longest piece of green card and stick it above the previous one. Repeat until the smallest piece of green card is at the top.
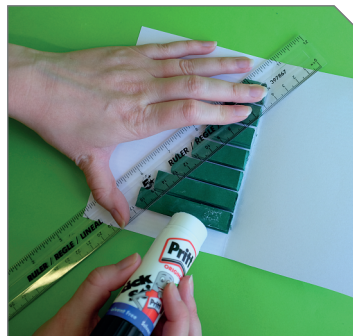
10 Now smear glue across the top of all of the folded green pieces. You may need a ruler to hold them down while you do this.
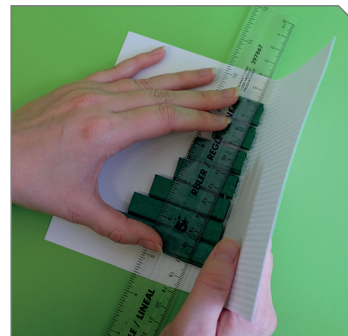
11 Carefully fold over the other side of the white card and press firmly so that the green folded pieces stick to the blank side. Leave to dry.

12 Gently open your card to reveal your pop-up Christmas tree. If the glue needs longer to dry, close it again and leave for about an hour.

Real-world science

Using clever folds, much like the one you used here, architects and engineers can pack huge things into small spaces. This earthquake-resistant pop-up house, created by Italian architect Renato Vidal, is folded for easy transportation. Once it arrives at the site, a team of three builders unfolds it and adds floors, interior walls and windows. With a bathroom and a kitchen already installed, the house goes up in less than six hours. Architects think that modular homes like this will become more and more popular as the world's population grows.

CHRISTMAS CHEER
In the UK, people send around 900 million Christmas cards every year. That's about 16 per person.

M.A.D.I. modular home.