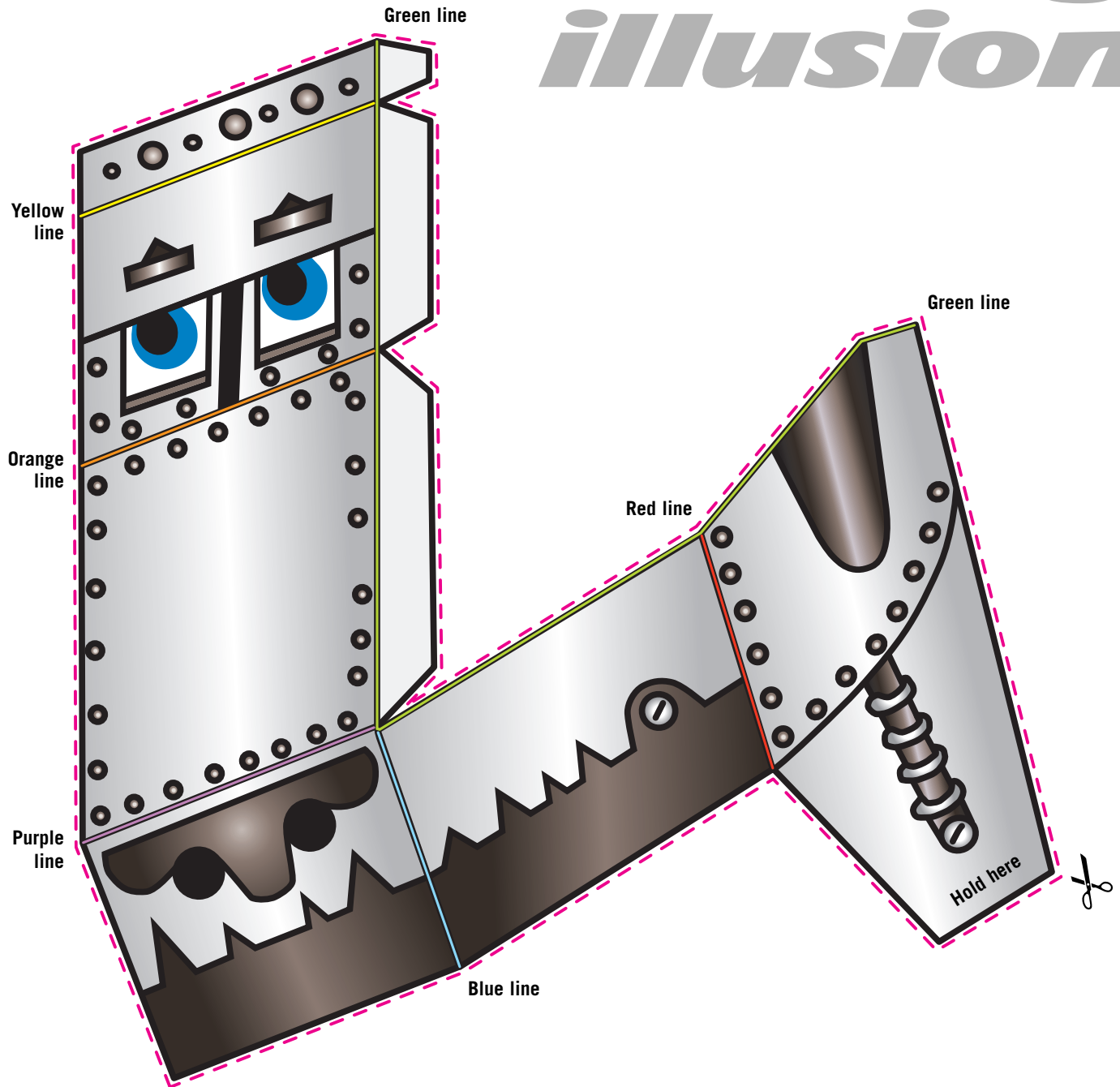# The robot dog illusion

Build this robot dog's head and watch it pop into 3D life! This activity is based on an optical illusion where the brain is fooled into thinking that a hollow face is actually popping out towards you. It's also inspired by the LIREC project (**www.lirec.eu**), which is trying to discover how to make robots as friendly as a real-life pooch.

Putting it together

1 Punch out the cartoon. By the end of these steps, you'll have made a face that bends inwards, rather than pointing out like a normal face. Even though the dog's face is hollow, you can make your brain see it coming out towards you!

2 Make a valley fold on the blue, purple and yellow lines, and a mountain fold on the orange and red lines.

A valley fold looks like this:

A mountain fold looks like this:

3 Do a valley fold on all the tabs.

4 Bring the green lines together so they meet. Tape or glue the tabs so they wrap round the back of the cartoon, joining the pieces together.

5 Grab the neck where it says 'hold here'. Hold the face upright in front of you, shut one eye, and slowly tilt the face from side to side. Eventually the dog's nose should pop out at you. It may take some time – try different angles or switching which eye you've closed.

How it works

This illusion works because we don't normally see faces that bend inwards. When our brains try to make sense of the information, we end up seeing a normal 3D face. In fact, our brains treat lots of concave objects the same way.

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