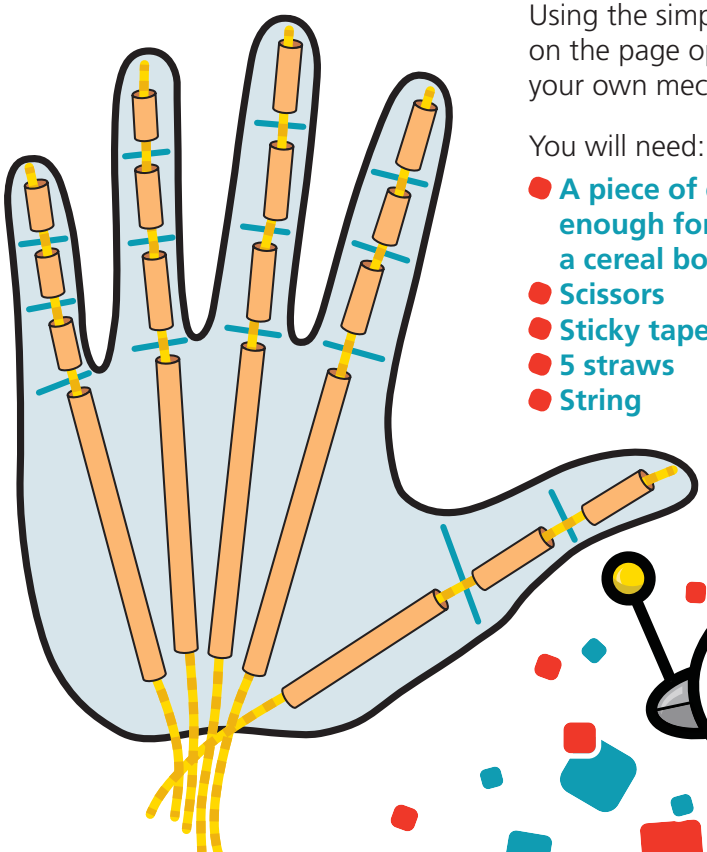
Hands on Engineering

Dr Matthew Dickinson is a Senior Lecturer in Computer Aided Engineering. His research looks at how robots and machines can mimic living things and the natural world. This is known as bio mimicry. Using these techniques, engineers hope to solve challenges facing humans like trying to make better artificial limbs.



Using the simple instructions on the page opposite make your own mechanical hand.

You will need:

- **A piece of cardboard large enough for your hand – a cereal box is ideal**
- **Scissors**
- **Sticky tape**
- **5 straws**
- **String**

- Draw round a hand on the piece of cardboard and cut it out.
  Tip: You may wish to draw round an adult's hand as it is less fiddly to make with a larger hand.
- Looking at your own hand decide where the finger should bend and draw lines where the bends will be.
- Fold the hand along all of these lines to make it easier for your hand to move later.
- Cut sections of the straws to fit between each line as in the picture above.
- Stick each section of straw using sticky tape.
- Cut five pieces of string about twice as long as the hand.
- Use one piece of string per finger and thread the string through the sections of straw. Tape the piece of the string at the top of the finger to stop it pulling through.
- Once all the pieces of sting are all through you can tie them all together near the wrist.
- Try pulling on the string to make the fingers bend and your mechanical hand is now complete!

Did you know?

The Velcro found in so many useful places such as coats and shoes was inspired by nature.

In 1948, A Swiss engineer George de Mestral invented Velcro after he noticed the tiny hooks on the prickly burdock seed burrs that clung to his dog's fur.

Can you think of an invention that could help people inspired by an animal or plant?