



Paper Cup Racers

Stem Activities



Ages: 3-5



Greater than 30 minutes



Grownup needed



Make paper cups race using everyday items like rubber bands! You can even host your own paper cup sprint competition at home. This simple and fun experiment helps children understand scientific concepts like energy transformation.

Materials Needed

Two paper cups
Markers
Tape
Battery
Rubber band
Pencil
Scissors
Ruler



Step-by-step tutorial

Step 1

Take two paper cups and place them upside down, then draw your favourite animals on them using markers.



Step 2

Place your finger on top of the cup's rim to divide it into two equal parts. Using the pencil, make four marks on the rim at the ends of your finger, ensuring the marks are parallel to your drawn animals.



Step 3

Using scissors, cut 0.5cm slits from each of the four marked points down the cup.



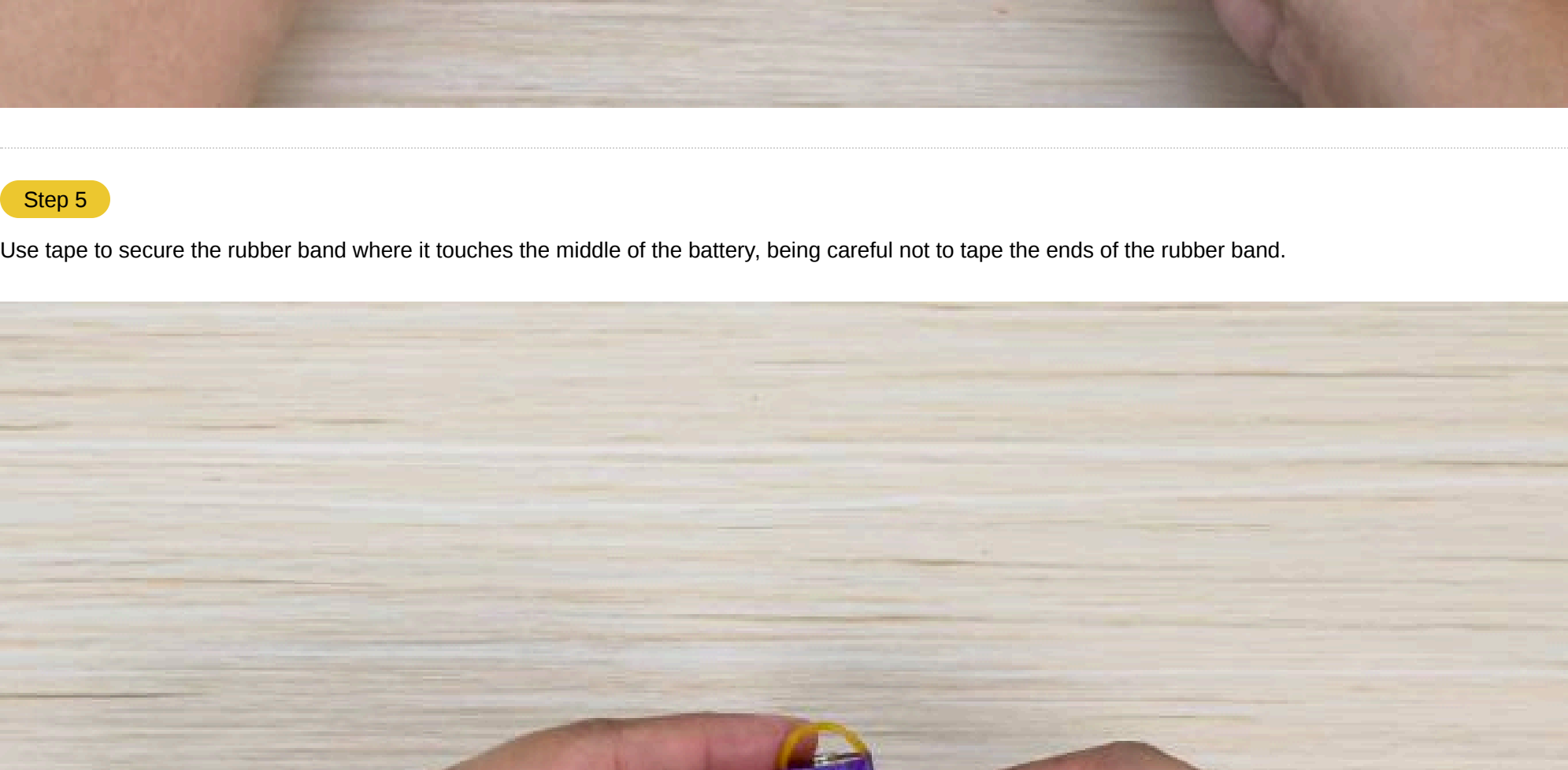
Step 4

Take the battery and rubber band, and wrap the rubber band around the battery as shown. Adjust it so the rubber band sits in the middle of the battery.



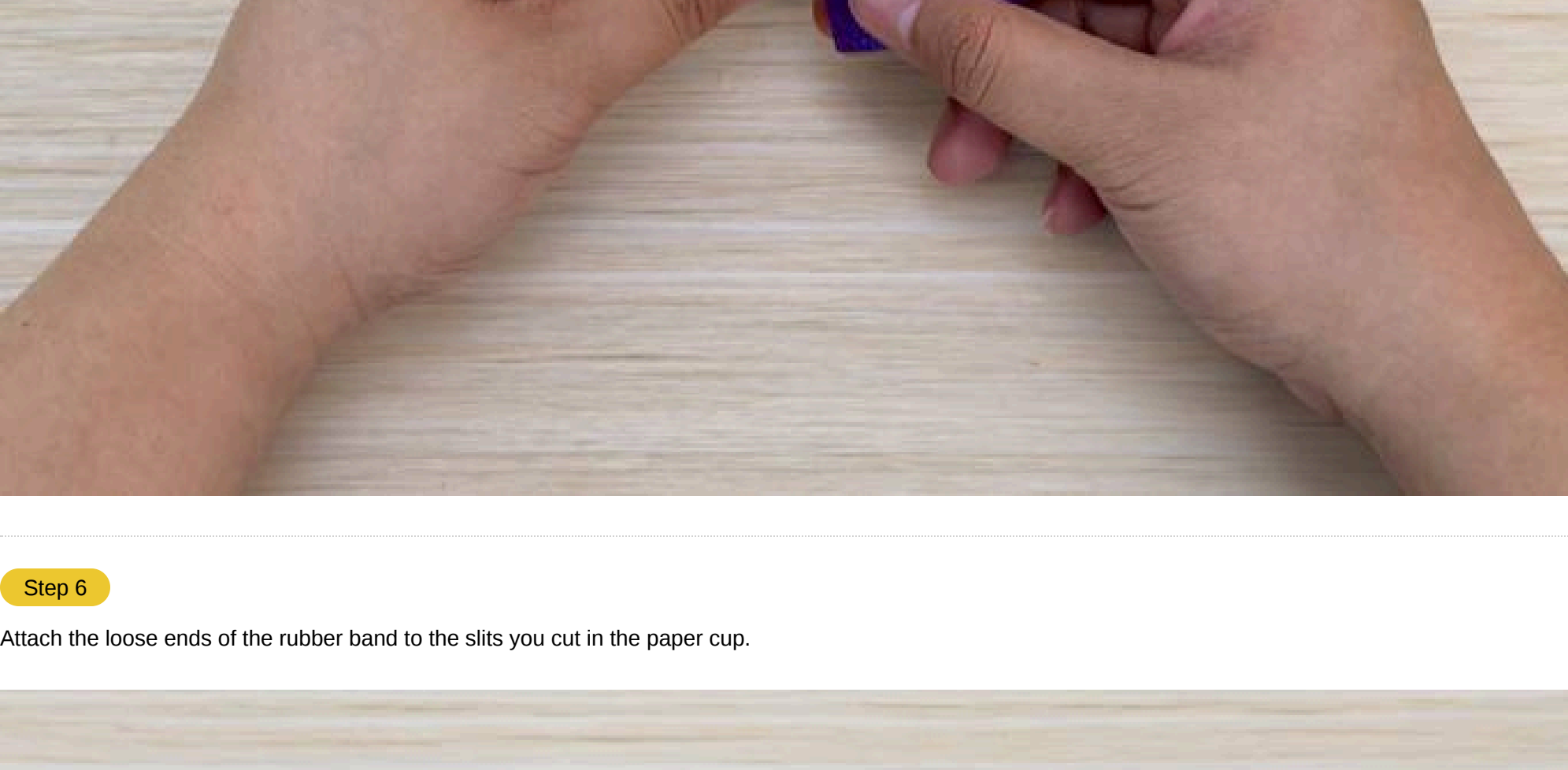
Step 5

Use tape to secure the rubber band where it touches the middle of the battery, being careful not to tape the ends of the rubber band.



Step 6

Attach the loose ends of the rubber band to the slits you cut in the paper cup.



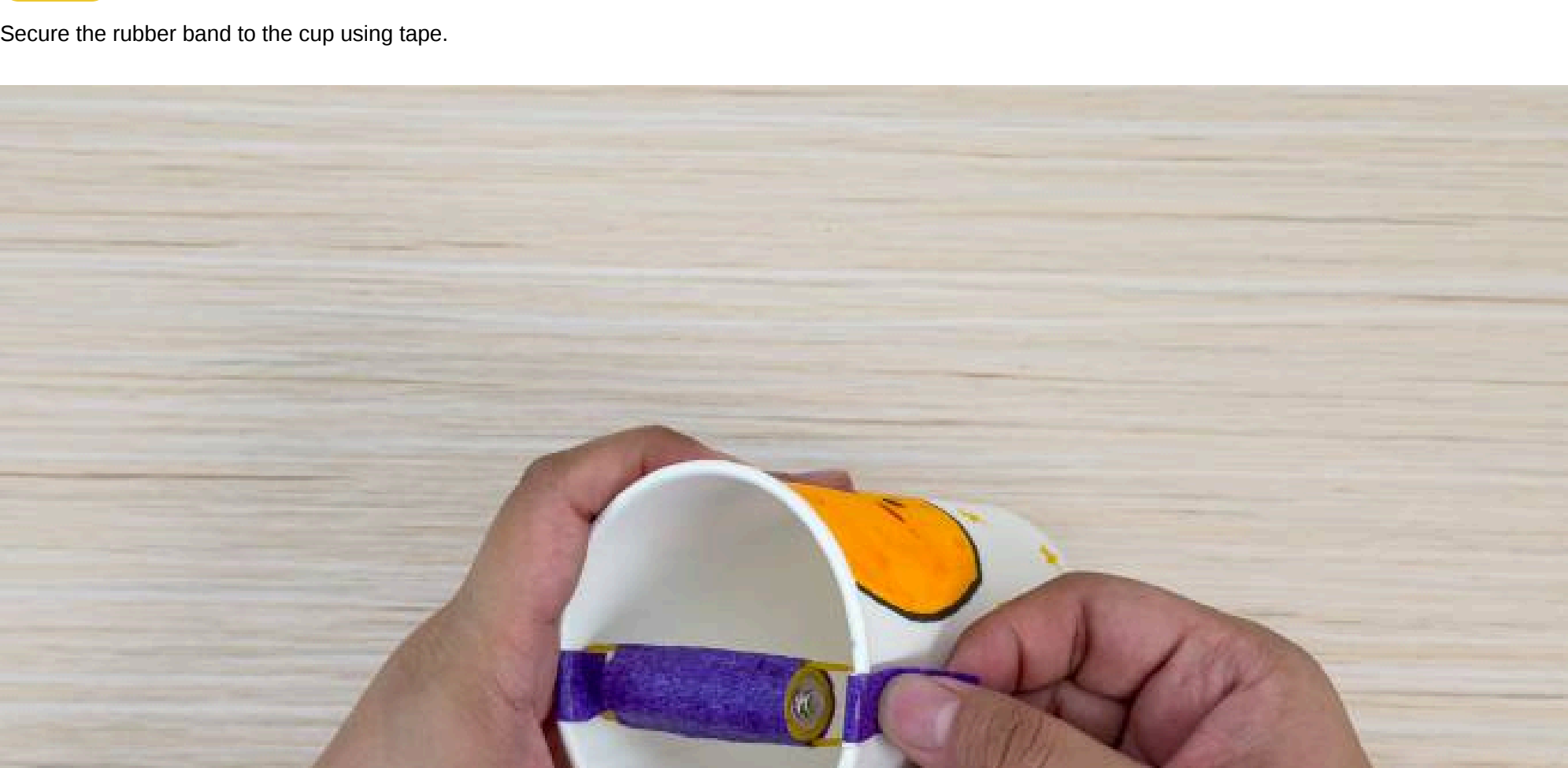
Step 7

Secure the rubber band to the cup using tape.



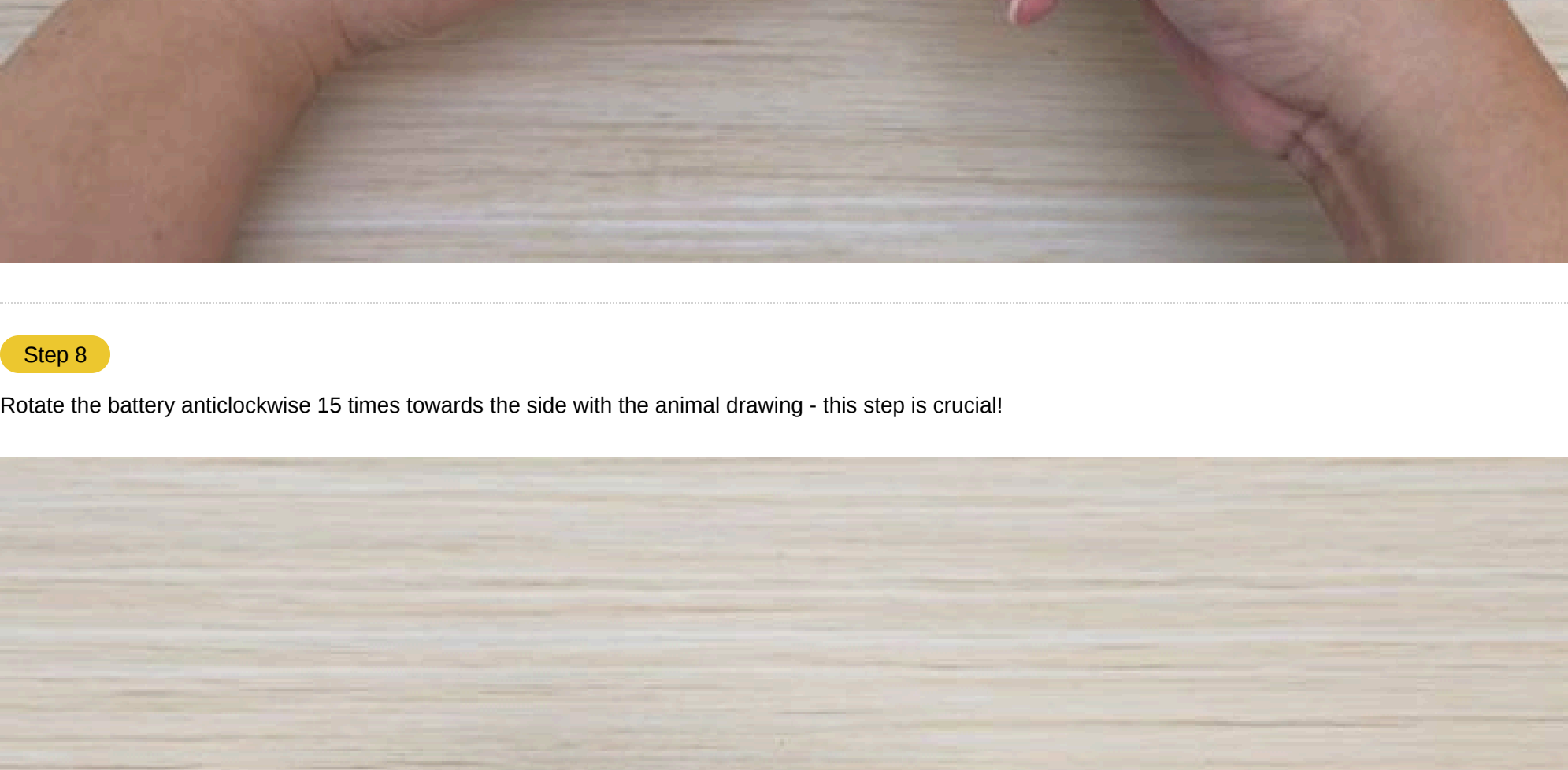
Step 8

Rotate the battery anticlockwise 15 times towards the side with the animal drawing - this step is crucial!



Step 9

Quickly place the wound-up cup on the table and watch it race! Challenge family members or friends to see whose cup runs faster!



The Science Behind It:

When you wind up the rubber band, it stretches and stores energy in the form of elastic potential energy. When released, the rubber band returns to its original state, converting the stored energy into kinetic energy that propels the cup forward, creating the running motion you see.