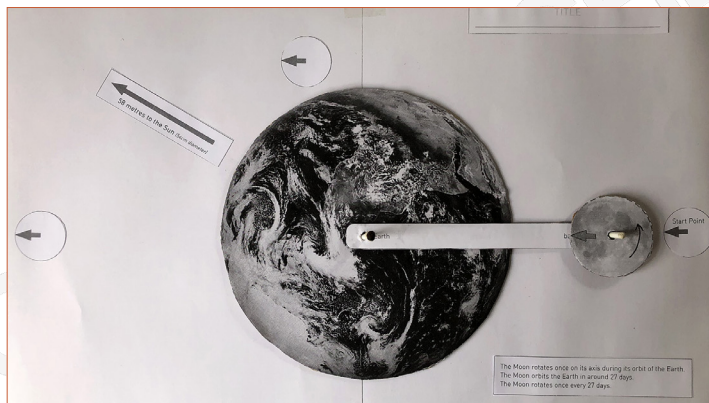


Instructions for making the Checkpoint Kids Moon and Earth Orrery

Watch this video clip of the orrery in action. This will open in a new window.



Materials

- large A3 sheet of paper or two sheets of A4 sellotaped together
- some A4 for printing - you can copy the templates straight onto cardboard if you have no printer
- some thick cardboard - 2-4mm works well
- some plastic tubing - the inside of a used ballpoint pen worked for us
- blu-tack
- gluestick or pva
- one peppercorn

Equipment

- marker pen
- something to make small holes in cardboard - a ballpoint pen worked for us
- scissors

Instructions

1. Using the template, cut out the Earth, Moon, base circle and the arm.
2. Glue them all onto cardboard and cut out.
3. Using a ballpoint pen, or similar, make holes in the centre of the Earth, Moon and base circle and at each end of the arm. The holes in the Earth, base circle and arm should be tight enough to grip the tubing. The hole in the Moon should allow it to rotate easily on the tube.
4. Cut two lengths of plastic tube.
5. Push the 2cm length of plastic tube through the hole in the base circle and one end of the arm as shown in Diagram B. Glue the tube, base circle and arm in place.
6. Push the 4cm length of plastic tubing through the hole in the Earth and glue in place.
7. Assemble the orrery by placing one end over the plastic tube on the Earth (the pivot hole may have to be made larger to allow it to rotate easily) and placing the Moon over the plastic pivot on other end of the arm.
8. Place the assembled parts onto a piece of A3 paper.
9. Print off the direction arrows, 'distance to the Sun' label, title and information box and glue to the A3 sheet as shown in Diagram A.
10. Use blu-tack to secure a peppercorn to the top of the plastic pivot on the Earth.
11. Use blu-tack to mould a Moon, $\frac{1}{4}$ the size of the peppercorn, and secure to the top of the plastic pivot on the Moon.

Diagram A

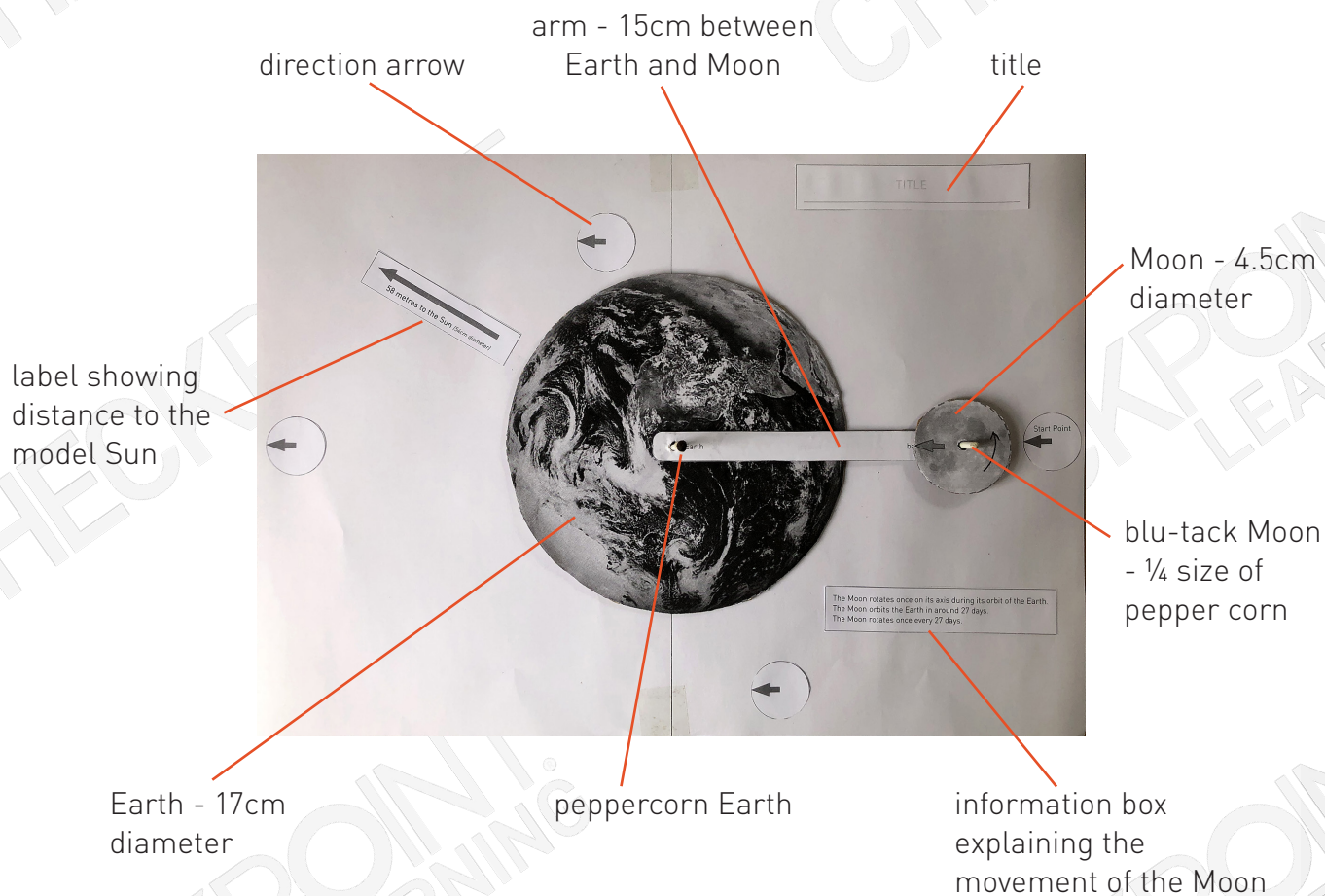
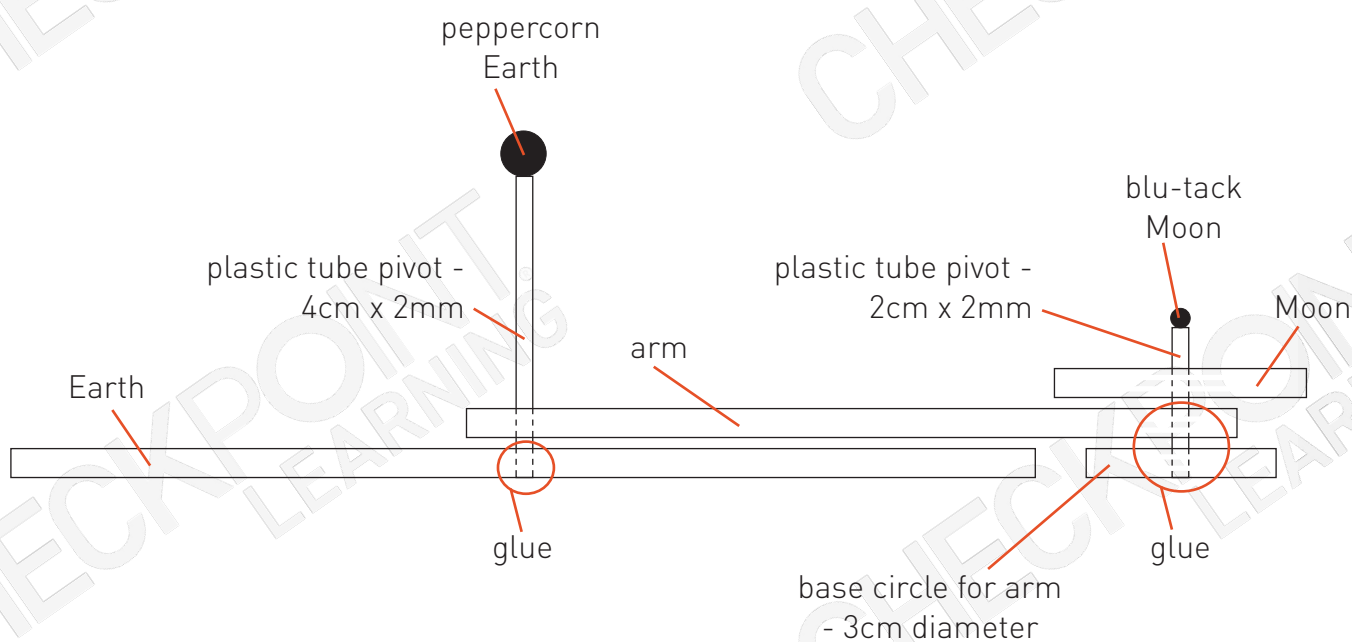
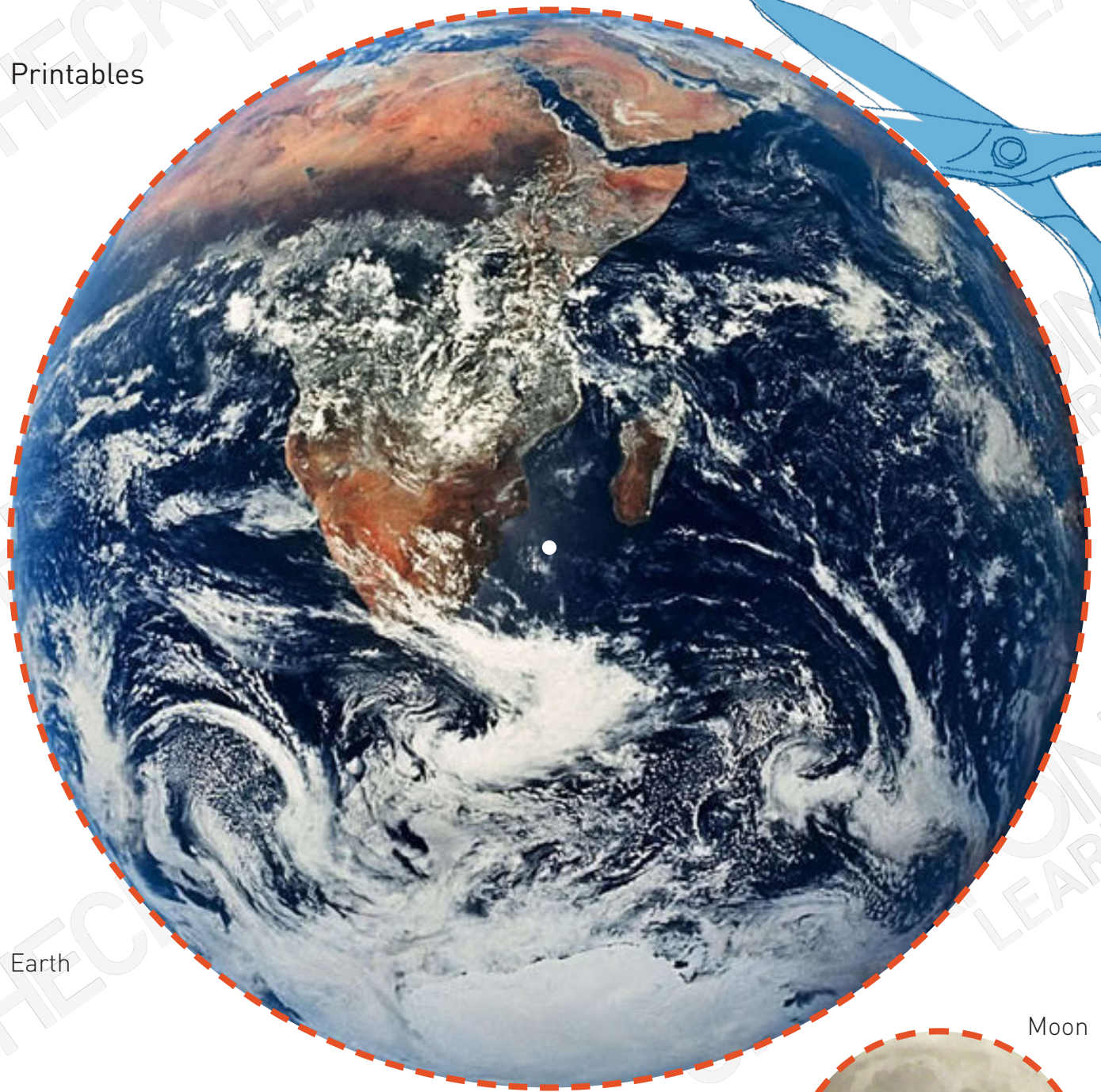


Diagram B



Printables



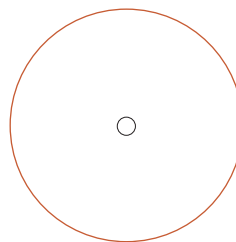
Earth

Moon



plastic pivots

base
circle



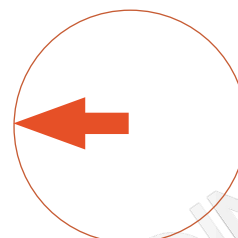
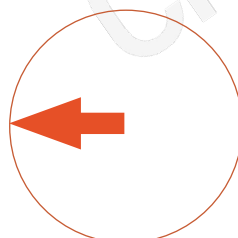
○ Earth

base circle



arm

Printables



TITLE

The Moon rotates once on its axis during its orbit of the Earth.
The Moon orbits the Earth in around 27 days.
The Moon rotates once every 27 days.

