

Cosmic movement

Make a simple spinning wheel that appears to go backwards when you spin it forward.



OTAGO
museum

Material:

- heavy white cardboard (50cm x 50cm or larger)
- 1 long nail
- 3 small nails
- black felt pen
- piece of wooden board (30cm x 30cm, 1.25cm thick)
- scissors
- ruler
- protractor
- screw
- pencil
- tape
- string (45cm long)
- empty thread spool (5cm high)

Method

1. Cut the cardboard into a 12.5cm diameter circle. Mark the centre of the circle
2. By drawing straight lines through the centre of the circle, divide the circle into eight even wedges. Colour every second wedge black and add a black dot to one of the white wedges
3. Poke the long nail through the centre of the circle and sit the nail in the centre of the spool
4. To secure the circle in place, nail the circle to the spool using the three smaller nails. Turn the wheel over so that the long nail now falls out
5. Using the long nail, create a small hole about 1.25cm from the edge of the circle. Feed the string through this hole
6. On the spool side secure the string by tying it to a screw. On the other side tie a knot on the end of the string for added grip
7. Drive the long nail through the board so that the nail sticks up and set the spool on top of it
8. Hold the grip knot and gently turn the wheel around in circles. As you turn it faster and faster, notice what happens to the wedges on the wheel? Experiment with different speeds. At certain speeds the wheel should appear to be going backwards!

If you attach something small to one of the spokes on your bicycle you can see the same thing happening!

