



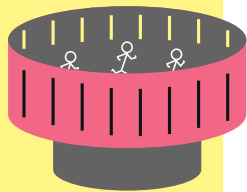
SUPER POWER: Animation!

ZOETROPE

LAB NOTES...

a ZOETROPE is a type of CARTOON!

Zoetropes were invented over 150 years ago and were one of the earliest moving pictures. They work by tricking your brain into seeing one moving picture instead of lots of fast-moving still 'frames', a bit like the thaumatrope we made while investigating the superpower of Super Sight!



Spinning the zoetrope at different speeds will change how fast the animation goes, so you can slow down, speed up and even rewind time by spinning the zoetrope at different speeds and directions!

TO MAKE YOUR ZOETROPE...

1. Watch Nanogirl making her zoetrope.
2. Decide what pictures you are going to draw on your animation strip. Choose something with a simple movement, like a person jumping up and down, or running on the spot.
3. Start by making the animation strip. Turn a piece of paper sideways so that the long edges are at the top and bottom. Fold it in half from left to right three times, and when you open it out, you'll have eight long sections divided by creases.
4. Fold it in half once the other way, and cut along that fold. You'll only need one half of the paper.
5. Keeping your creases vertical, measure 3cm down and draw a line horizontally.
6. In each section that's below your 3cm line, draw your animation. For it to look like it's moving, keep the drawing simple and use a marker pen so it's clear. Make the first and last image the same then draw in slightly different motion for each frame.
7. Cut the card to be the same size as the paper.
8. Tape or glue your animation strip onto the card.
9. Mark 3mm either side of your paper crease above your 3cm horizontal line.
10. Cut down these lines to the 3mm mark then snip them out horizontally to give you evenly spaced 6mm rectangular holes.
11. Tape the ends together to form a circle with the pictures on the inside.
12. Draw around the base of the circle on the card, and cut it out.
13. Find the middle of the circle, and poke the pencil half way through.
14. Tape the card onto the base of the animation wheel.
15. If you need to secure the pencil in place with tape.
16. Hold the wheel upright close to your face, spin the pencil and look through the slits at the pictures on the opposite side.

BUILD TIME
30
MINS

YOU WILL NEED

- Stiff card
- A4 paper.....
- Pencil
- Marker Pen.....
- Ruler.....
- Scissors
- Tape.....
- (Optional) Glue

How slowly do you have to spin the zoetrope before you can see individual frames again?

What other animation strips can you make? Can you make your own superhero cartoon?

Once you have the hang of drawing with a marker pen - add some colour and detail to your images.

Try moving your zoetrope closer and farther away from your face. At what distance does it become hard to see the animation?

Now you know how to make this one, why not try to make a bigger zoetrope with twice as many frames for a longer animation sequence.