



SUPER POWER: Fingerprints!

FINGERPRINT SCOPE

LAB NOTES...

BUILD TIME
15
MINS

YOU WILL NEED

- Fine powder
- (talcum powder/hot chocolate powder/flour)
- Tape.....
- Cardboard tube.....
- Thin and thick card.....
- Blue tack
- Scissors
- Paper clips
- Elastic band.....
- Pencil
- Wooden skewer or stick.....

TO MAKE YOUR FINGERPRINT SCOPE...

1. Watch Nanogirl making her fingerprint scope.
2. Place the end of your cardboard tube on your thin card and draw around it. Add a slightly larger and slightly smaller circle around and in this circle.
3. Cut along your inner and outer lines to make a ring.
4. Draw around and cut out this ring shape on card so you have two identical rings.
5. Stick tape across the middle of both rings and store sticky-side up.
6. Dip your finger into your fine powder, tap off any excess then press your finger firmly onto the sticky side of the tape on one ring.
7. Remove your finger and seal your fingerprint mark by placing the other ring sticky-side down over it. This is your fingerprint slide - write your name and which finger it came from on it.
8. To create a fingerprint library, repeat the ring making and fingerprint taking for other people you know.
9. Take your cardboard tube and tape a skewer along one side with the pointy end sticking out by a few centimeters past the edge. You can trim the other end if you need to.
10. Take your thicker card and poke the skewer through. Draw around the shape of the tube (you might need to hang the card off the edge of a table for this).
11. Rotate the tube around to the opposite side of the skewer and draw around it again.
12. Remove the skewer to reveal your two drawn circles - now draw a large circle around these keeping the skewer hole in the centre.
13. Cut out your large circle and the two small circles to make a round disk with two holes in it.
14. Draw around this shape on thick card and cut it out to give you another identical shape.
15. Lay the two circles on top of each other, line up the holes then tape across one edge to make a hinge so you can open and close the two pieces of card like a book.
16. Take a paperclip and bend the outside up and back to create a little hook.
17. Tape to the opposite side to the tape hinge on your card with the hook facing inwards towards the centre of the wheel.
18. Hook the elastic band over the paperclip and stick to the underside of the disk. You may need to shorten the elastic band by tying a knot if it's too long.
19. The stretched elastic band can be used as a latch to keep the slide viewer closed.
20. Open up the slide viewer, choose two fingerprints from your library, and place one over each viewing window. You might need a small piece of blue tack to keep them in place. Close the lid of the viewer and secure with the elastic band over the hook.
21. Slide the tube viewer onto the disk with the skewer, hold up to the light and look at each fingerprint through the tube.

Try taking fingerprint samples from all the fingers on one hand. Are your fingerprints the same on every fingertip?

Is there somewhere in your house where you could see fingerprints left behind, for example on a glass window? Can you find these fingerprints using your powder?

Dogs don't have fingerprints but some other animals do, do you know which ones?

Fingerprints can be loops, arches or whorls, see if you can tell what shape yours are.

Why do we look at fingerprints?

Fingerprints are the swirly patterns you can see if you look closely at the end of your fingers. Human fingerprints are unique to each person, even identical twins don't have identical fingerprints! They are one of the best ways we have of identifying someone and forensic scientist use them to help solve crimes. We can easily leave our fingerprint pattern on a hard surface when we touch them and forensic scientists use a very fine powder and tape to lift them. These fingerprints can then be compared to a library of fingerprints, to help investigators solve crimes.