



SUPER POWER: Light!

RAINBOW GLASSES

LAB NOTES...

TO MAKE YOUR RAINBOW GLASSES...

BUILD TIME
20
MINS

WHAT IS A RAINBOW?

You may have noticed a rainbow in the sky on a day when it's raining with a bit of sunshine. Sunlight is actually made up of light with different colours blended together, and each of these colours has a different wavelength.

When sunlight moves from the sun to our eyes it does with a particular wave (that's like a wiggle!). However if the light passes through a raindrop on it's way to our eyes, each of the different colours does a different wiggle inside the raindrop.



This causes them to split up so we can see all of the colours individually. So rain helps us to see all of the different colours that sunlight is made of. Our rainbow glasses help us to think about how different colours have different wavelengths and what the world would be like if we could see it in only one or a few colours.

1. Watch the video of Nanogirl making her rainbow glasses
2. Measure the width of your face across your forehead from the outside corner of one eyebrow to the outside corner of the other eyebrow. On your card, draw a line the same length as your measurement.
3. That line will become the top of your glasses. Find the centre of this line and make a small mark. That's the bridge of your glasses, where your nose will go.
4. Draw the shape of your favourite pair of glasses underneath. Make sure that there is space for your nose to go, in line with the centre mark that you made.
5. Don't forget to draw in eye-holes on your glasses!
6. Measure and draw a rectangle 2 cm wide and 5 cm long on either side of your glasses, there will be the tabs to connect the arms of your glasses to.
7. Cut out the shape. You might need an adult to help cut out the eye-holes.
8. Measure the distance on the side of your head from the back of your ear to the front of your face.
9. Fold your card in half. Measure and draw a line as long as the distance from your ear to your eyebrow.
10. At one end of the line, draw a curved hook which will go behind your ear. Give this shape a 2cm width so it can become the side arm of your glasses.
11. Cut this shape out through both pieces of card to give you two identical shapes. If this is a bit tricky, you could cut out one shape, then put it on another piece of card, trace around it and cut that one out separately.
12. Tape these ear-hooks onto the rectangle tabs you made on the front of your glasses.
13. Measure and cut two squares of clear plastic to fit over the eye holes of your glasses.
14. Colour the plastic using your favourite rainbow coloured markers.
15. Tape the plastic squares on the inside of the eye-holes in your glasses. You might need to trim them to the right size.
16. Wear your fabulous new glasses and see different colours wherever you go!

YOU WILL NEED

- Thin card e.g. cereal box card
- Coloured markers.....
- Tape.....
- Pencil.....
- Ruler.....
- Scissors.....
- Clear plastic sheet.....
e.g. sandwich bag, plastic packaging
- Colouring supplies.....

What colours can you see if you make a rainbow by making soap bubbles?

Rainbows that you see in the sky are usually half a circle, whereas rainbows in a bubble can be a full circle - why do you think that is?

Is there anything around you which looks like it's a different colour through your glasses?

Try looking at different-coloured objects. If you have red glasses, try looking at something green. Does it still look green? If you have blue glasses, try looking at something red. Does it still look red?

What happens when you look at something the same colour as your glasses - does that colour change or stay the same?

What does this tell you about how we can create new colours by mixing other colours together?