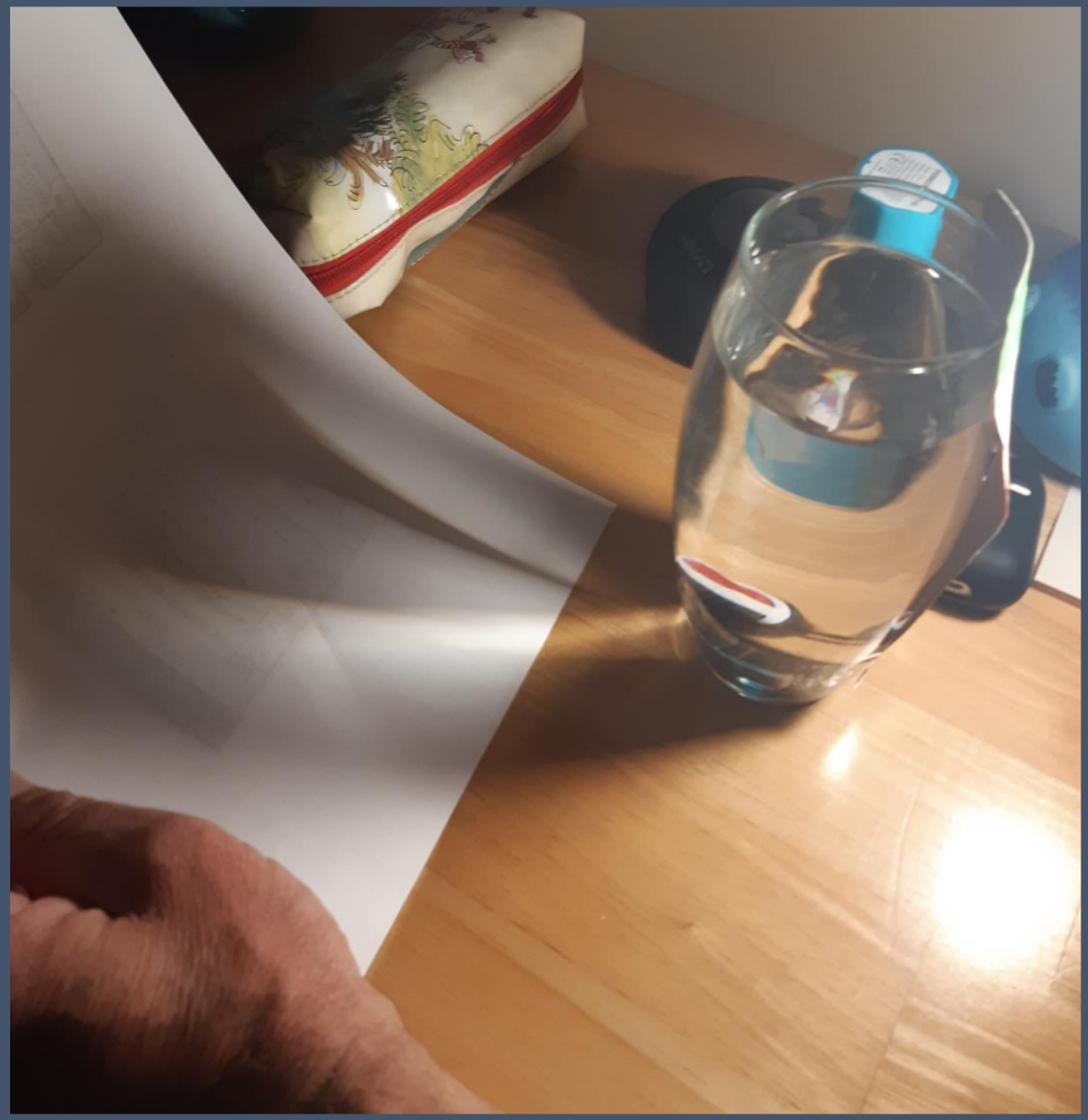

Rainbow
experiments

Glass, carboard, water and light experiment

When we tried this experiment, it didn't work at all because we did have some tall straight glasses but the have colourful stripes over them so it dint work. Because of this we got a different, curved glass and it didn't really work very well but there was a very small rainbow. However, it wasn't big enough to see the colours that were in it.



CD experiment

The CD experiment went very well, the paper didn't work so my dad thought that the wall might be better and there is a bigger space for the reflection to be large. When we tried it started off quite well, then we adjusted the positioning of the torch, CD and distance from the wall and after we did that a crown shaped rainbow was formed and it looked really good. My dad and I checked if the colours really were in the same order as a real rainbow and it was, the experiment was fun to do as well.

Questions

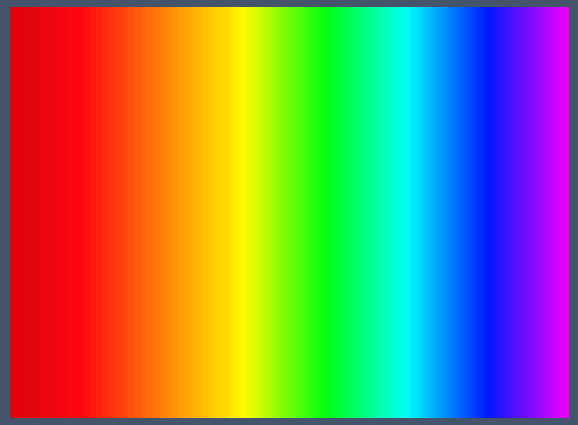
- 1) What order do the colours in the rainbow appear?
- A) The order in which the colours appear in the rainbow is red, orange, yellow, green, blue, indigo, violet.
- 2) Are the colours of the rainbow always in the same order?
- A) Light waves have a frequency and the frequency determines the colour of the lights. Each colour of light refracts slightly differently and this produces the spectrum if colours.
- 3) What does this tell you about the 'white light' the sun produces?
- A) Although the sun emits white light when it reaches our eyes, it contains all the different frequencies f light waves which make up all of the colours, creating a rainbow when it is refracted.

Activity 2, Colour And Light

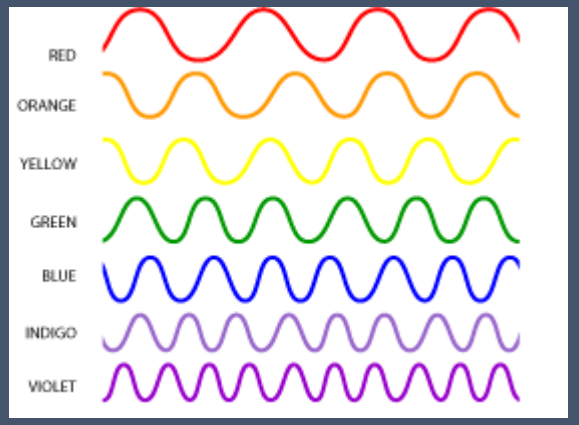
- Frequency - Frequency is how many light waves pass per second.
- Spectrum – Spectrum is the certain range of colours from red to violet that white light can be broken down into when it is refracted.
- Dispersion – Dispersion is splitting of white light into colours.
- White – White is light before it is refracted, as it reaches our eyes.
- Visible – Visible is when something is clear to the human eye and you can figure out what it is.
- Prism – A prism is a 3 dimensional object that has identical parallel faces.
- Primary – Primary colours are green, blue and red. We use these to mix together to create secondary colours.
- Absorb – Absorb is when the light is absorbed rather than reflected so it appears darker and duller than other colours in appearance.
- Reflect – If something reflects light than it comes out as a much brighter colour like white or green etc.
- Colour – Colour is when the suns white light is reflected, refracted, emitted or absorbed to create a darker or brighter shade of white in a different way to the human eye. Colours are formed from different frequency's of light waves.
- Light – Light is when the primary colours are mixed together to create different colours with different frequency's and light waves.

- What does ROYGBIV help you with? This helps me with remembering the order of the colours in the rainbow e.g: Richard Of York Gave Battle In Vein, (the colours in the order of the spectrum).
- Explain how rainbows are formed, using as many keywords as you can. Rainbows are formed by the suns white light being refracted by water droplets that are floating around in the earths atmosphere. When the light is refracted the each colour light waves changes their direction by a different amount so the light changes colour from the white to the spectrum of the rainbow (ROYGBIV).

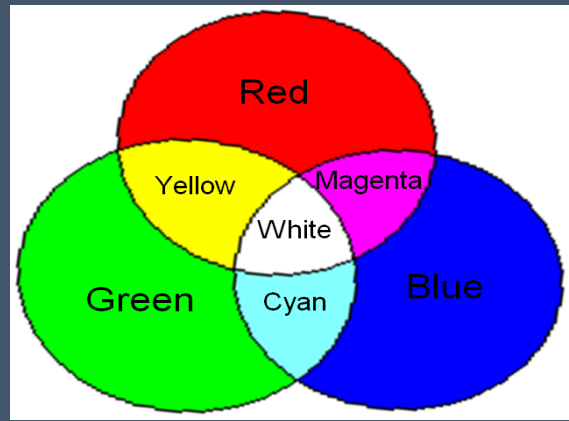
Dispersion is when the suns **white light** is reflected or **refracted** through a see-through object, coming out the other side as different colours.



A spectrum is when **white light** is refracted and the light turns into a new colour, forming a rainbow.



Frequency of light waves is the amount of waves over a certain amount of measured time and different frequency's create different colours.



Primary colours are red, green and blue. Secondary colours are the colours formed when these colours are mixed in different orders.

ROYGBIV are the frequency's of light that are visible to the human eye.

Absorb is when the suns white light is absorbed by an object so only some of it gets back out, forming a new colour from smaller light waves.

Reflection is when the suns white light is reflected off an object and creates smaller or larger light waves to form a colour.

Colour is when the suns white light is refracted or reflected to create a new colour with smaller or larger light waves.