8k Light: Colour and Prisms

Year 7

Week commencing 14th May 2012

Garendon High School

Title: Why do we see colour?

Starter:

In pairs – No 1s explain reflection

No 2’s explain refraction

Title: Why do we see colour

- **<u>Objectives:</u> Describe the parts of white light and how prisms and filters work**

- I must be able to state the 7 colours of white light
- I should be able to explain how a prism shows us these
- I could explain how a light filter works

COLOUR

Light from the sun is called white light.

White light is made up of the seven colours of the rainbow.

Red, orange, yellow, green, blue, indigo, and violet.

How we see colour

We only see the colours that are reflected off an object. The other colour parts of light are absorbed.

Example:
A red object reflects red light into our eyes but all the other colours are absorbed by the object.

Why do you think many Mediterranean countries have white coloured houses?

Refraction of Light Through a Prism

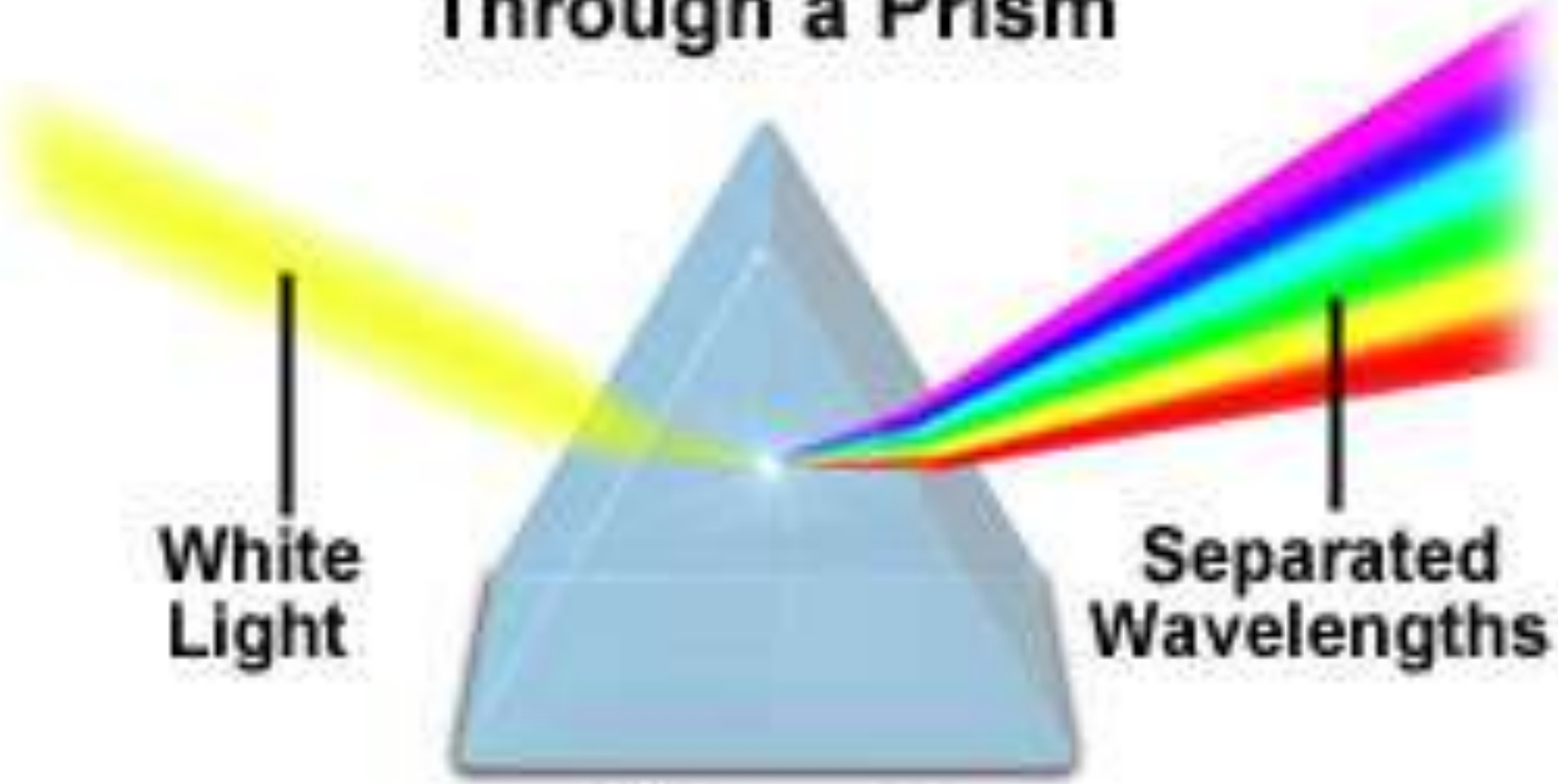


Figure 5

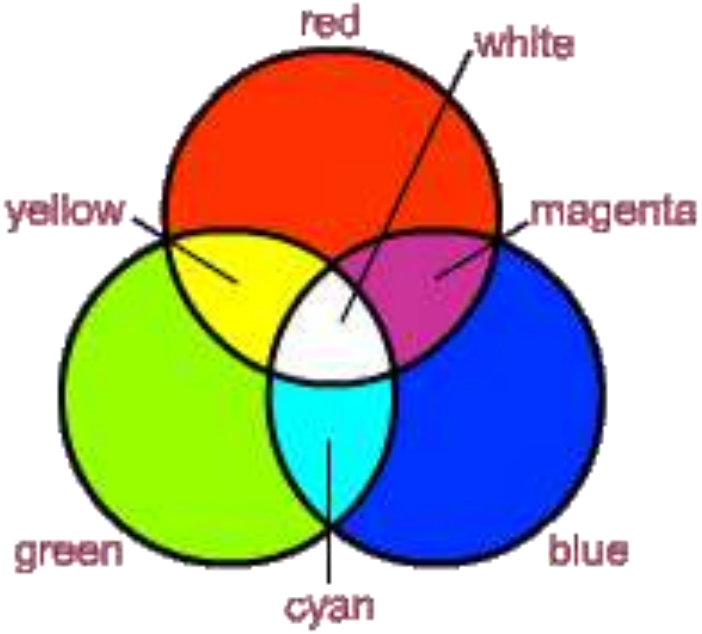
How a prism works

- White light enters the prism and is refracted
- The prism splits white light into its different colours which spread out because they are refracted

Primary and secondary Colours

There are three Primary Colours. These are **RED**, **BLUE**, **GREEN**. We can add these colour lights to produce the secondary colours. **ALL VISIBLE LIGHT IS ONLY MADE OF BLUE, GREEN AND RED.**

The secondary colours are **YELLOW**, **MAGENTA**, **CYAN**.

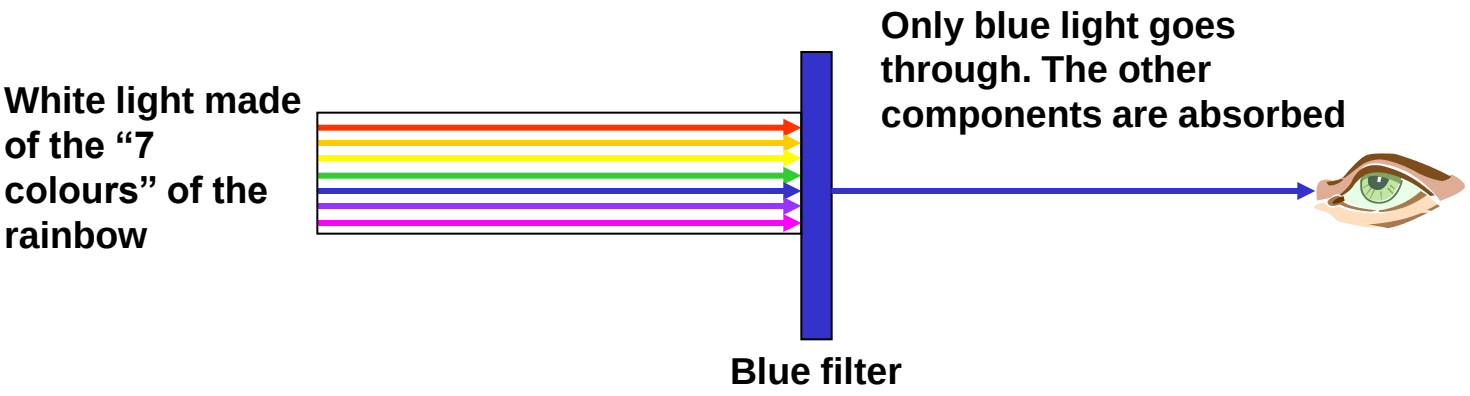


Filters

If we shine white light on a colour filter, the light coming out of the filter is the same colour as the filter.

Can you explain why?

The filter will absorb all colours of light apart from the colour of the filter. E.g. a blue filter will absorb all the components of white light and allow blue light to go through.



Light filters

- Filters can be used to reflect specific colours of white light, turning the light a different colour:

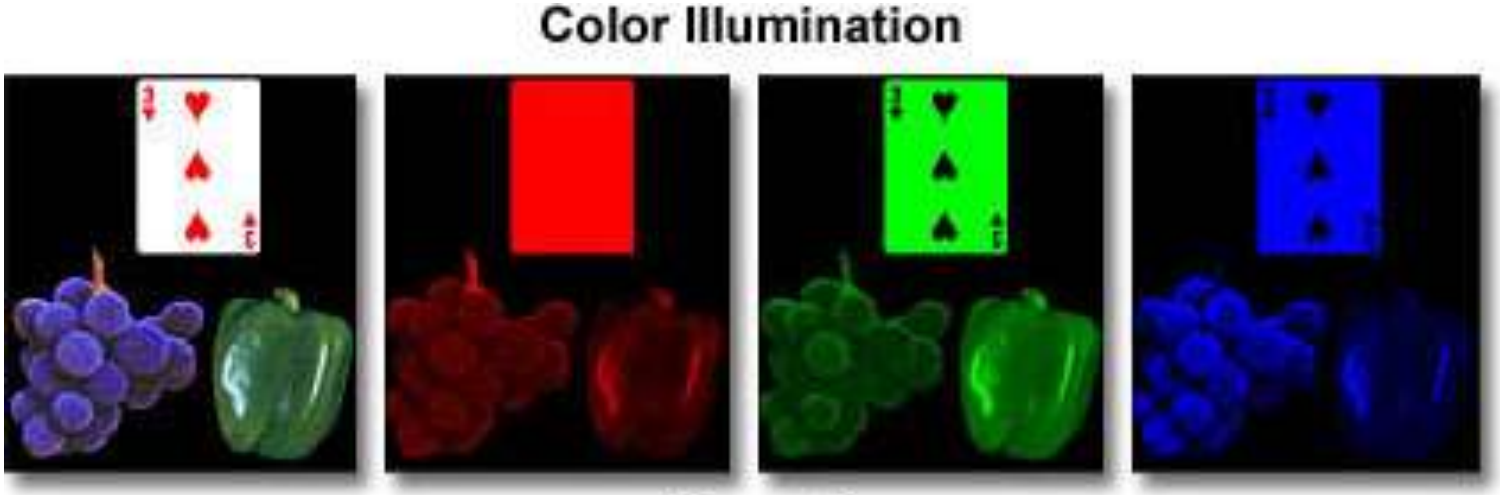


Figure 2

In white light in red light in green light in blue light
This is what the grapes and card will look like

For example

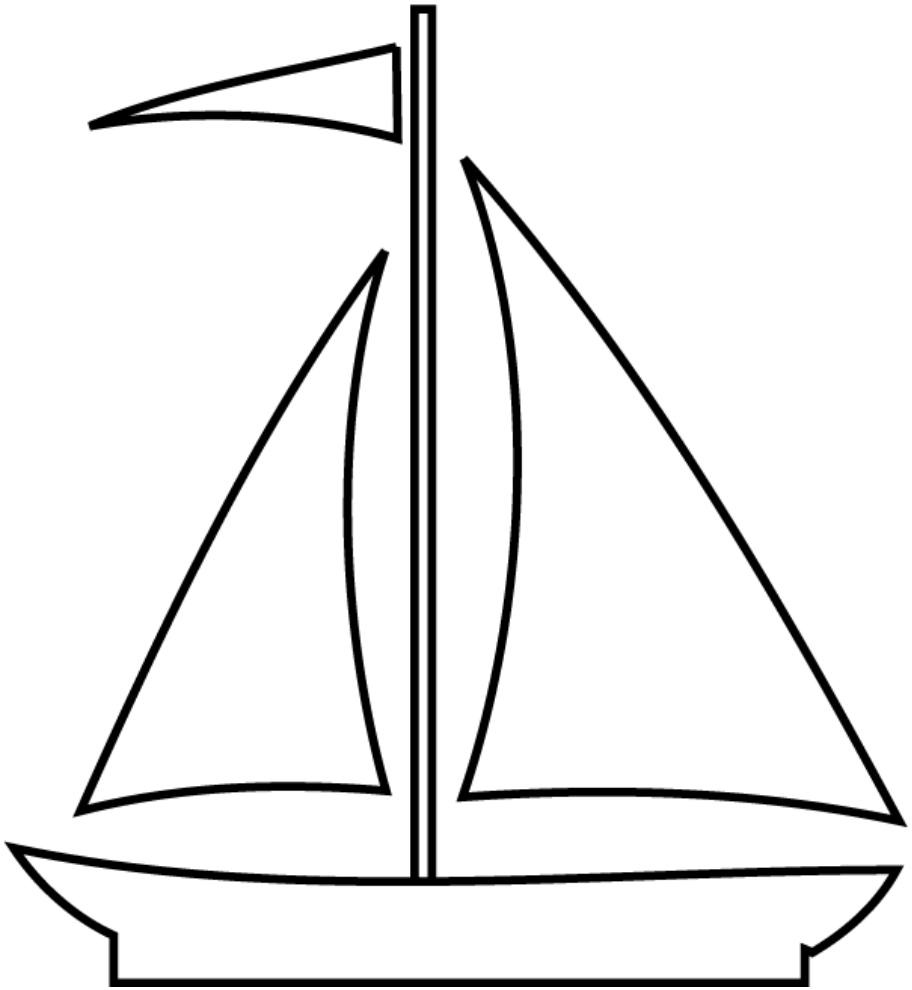
- A red filter will only let red light pass through
- A blue filter will only let blue light pass through
- A green filter will only let green light pass through

Practical

- We will look through the light filters and observe the colour that the lego blocks appear.

- Fill in the sheet with what you find and stick in.
- **<u>Write a method and conclusion in your books.</u>**

You could also copy and colour in this boat in different colours (e.g. Red, blue, yellow, green) and see how the colours change through different filters.



Plenary

- Think, pair and share

- 5 things you have learnt in this lesson

- Since all the visible light we see is just a combination of red, green, and blue light, it can change depending on what you are looking at through the filter.

  If you have something that looks white and a filter that blocks green light, when you look through the filter it may appear as purplish, a mixture of red and blue. But, if you look at something green, you may get a grayish color, since it is blocking most of the light coming from it.