

Colour

In the 1670s, Newton discovered colour. Not that everything was black and white before then! It was just that no-one had worked out why different things are different colours.

Newton shone light on a prism - a triangle block of glass - and found that the light separated into different colours. He discovered that white light is actually made of all the colours of the rainbow mixed together. Things look green or red or blue when white light shines on them because they reflect the green, red or blue part of the white light.



While Newton was investigating coloured light, many painters were investigating the chemistry of colour. Artists made their paints from natural pigments, which give the paint colour, found in earth and plants. These paints were often difficult to work with. Blues often faded, or were very expensive, like the paint called ultramarine which was made with a ground up semi-precious stone. Sometimes you may see old paintings of baby Jesus or Mary wearing blue robes. Because blue was a very expensive colour to use, it showed that the artist thought these to be very important people.

At the start of the 18th century, about the time that Newton published his book on light, a new kind of blue, known as Prussian Blue was discovered. This was the beginning of many new man-made pigments which meant paints became cheaper and easier to use.

Scientists and art historians test for Prussian Blue paint. If they find it on a painting that was supposed to have been painted before the 1800s they know it is either a forgery, or someone has painted over it at a later date.

Make a rainbow

You will need...

A glass of water
A mirror that will fit in the glass
Some sunlight

What to do...

Fill the glass with water and put the mirror in it so it lies on its edge.

Let sunlight fall on the mirror and watch as it forms a rainbow outside the glass. Sometimes the rainbow will fall on the table, or on a wall or ceiling, so have a good look for it.

Be careful! Do NOT look directly at the sun or at the reflected sunlight from your mirror. It can permanently damage your eyes.



What is happening?

The light from the sun bends as it enters the water, just like it bent when it entered Newton's glass prism. White light is made up of all the colours of the rainbow. Blue light bends more than red light, so the colours are spread out.