

## YEAR 6 SILVER FRIDAY ACTIVITY

All about...

# The Light Spectrum

The picture on the right shows a renowned album cover called *Dark Side of the Moon* by the band Pink Floyd. It was released in 1973 and although it contains many well-known songs today, it also shows this iconic image. The image shows what must be a glass prism with a light ray hitting it from the left. You can see inside the prism, the ray of light is spreading out until eventually, the colours within the 'white light' become separated into the spectrum we see on the right of the picture.



### What is White Light?

White light is the name given to a normal beam of light with no colour filters. A plain light coming from a torch or a lamp would be called white light. Also, light coming from the Sun would be called white light. However, just like when we mix lots of paint colours to make a very dark brown, the white light is made up of different coloured light. When the different coloured lights are mixed they make white, not the usual paint mixed colours we are used to.

### How Does White Light Separate?

So how is the spectrum made? And how can white light be separated so we can see these different colours? Well, it's all down to refraction. Refraction happens when something – like water or a glass prism – bends light. The thing about the different colours of light, is that they all bend a different amount. Red light bends the least, so is at the top of the spectrum we see in the picture above. Violet light bends the most, so is at the other end of the spectrum, with all the other colours in between.

### Why Does the Visible Spectrum look like a Rainbow?

...because a rainbow *is* a type of visible spectrum. Earlier we talked about light being refracted through a prism or water and that's exactly what happens to make a rainbow. Rainbows *only* happen when the Sun is providing some white light *and* it is raining. This means that there is light and water – perfect conditions for refraction to occur. The colours we know as the rainbow *are* the colours of the visible spectrum: red, orange, yellow, green, blue, indigo and violet.

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NOW ANSWER THE FOLLOWING QUESTIONS, REMEMBER TO THINK ABOUT YOUR STRATEGIES, HAVE YOU PICKED THE TEXT APART? DO YOU UNDERSTAND WHAT THE QUESTION IS ASKING YOU? HAVE YOU CIRCLED THE QUESTION WORD AND UNDERLINED THE KEY WORDS?

## Questions About The Light Spectrum

Answer the questions below in full sentences.

1. Who released the album 'Dark Side of The Moon'?

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2. How many colours are in the visible spectrum and in what order?

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3. What happens to white light to make it into a spectrum?

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4. Which colour bends the most when a spectrum is made?

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5. What two things need to be present to make a rainbow?

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6. Give an example of white light not mentioned in the text.

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7. Why has the author used the phrase 'what must be' in paragraph one?

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8. Why do you think the author has put the word *only* in italics in the final paragraph?

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9. What type of adjective is 'well-known' in paragraph one?

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10. Why has the author told us that mixing light colours is different to mixing paint colours? Why did they mention paint at all?

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