Rainbow Facts



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What Is a Rainbow?

A rainbow is a meteorological phenomenon formed when light, generally from the Sun, passes through water droplets hanging in the atmosphere. The atmosphere is a layer of gas that surrounds the Earth which enables us to breathe and protects us from harmful radiation from the Sun.



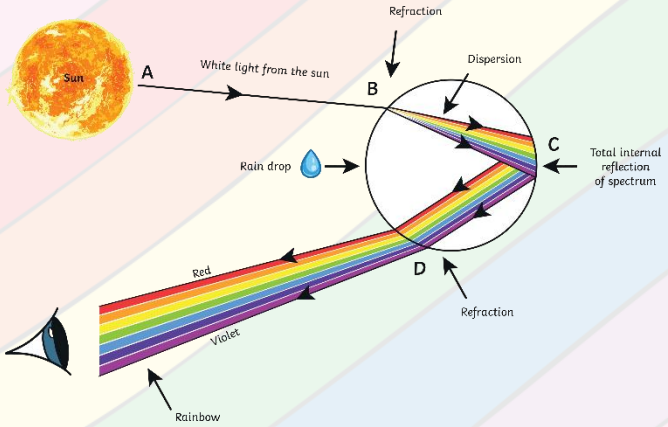
As the waves of light pass through the water droplets, they change direction, resulting in a multicoloured circular arc.

To be able to see a rainbow, you normally need to have your back to the Sun. Rainbows will usually appear in the section of sky directly opposite the Sun.

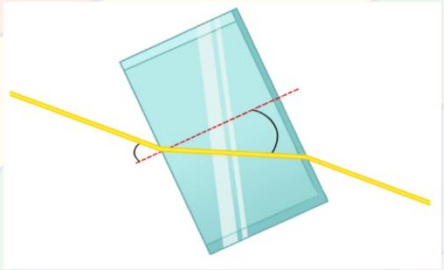
Did You Know...? Rainbows are actually full circles.

The Physics behind a Rainbow

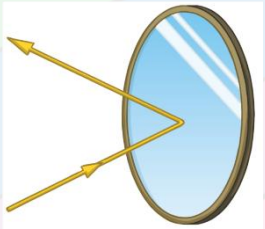
A rainbow is the result of three scientific phenomena: reflection, refraction and dispersion of light.



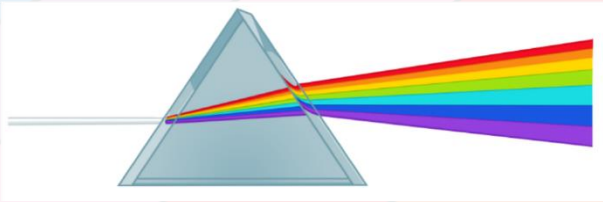
White light from the sun enters the droplet of water and is refracted. Refraction causes dispersion in the same way in which white light generates a spectrum of light when it traverses a prism. Inside, at the back of the droplet, this spectrum is reflected and refracted once again when leaving the droplet.



refraction



reflection



prism

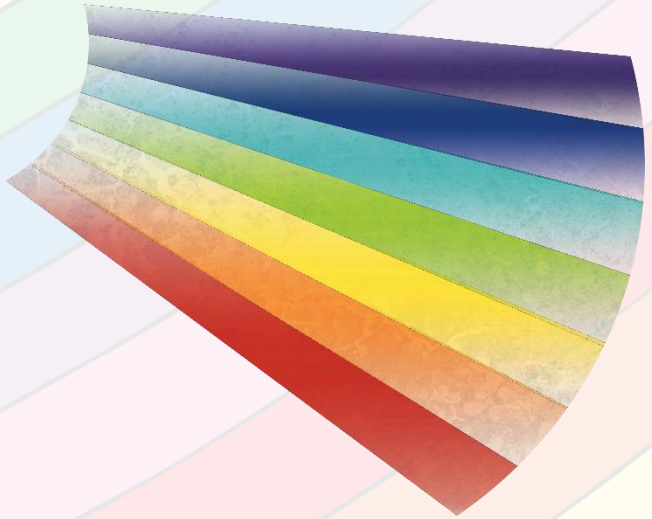
The Colours of the Rainbow

Do you know the colours of the rainbow?

If you don't, there is a rhyme that can help you remember them:

Richard Of York Gave Battle In Vain.

R for red,
O for orange,
Y for yellow,
G for green,
B for blue,
I for indigo and
V for violet!



Rainbows in Stories

One of the most famous songs about rainbows is in the story of 'The Wizard of Oz'. The song is called 'Somewhere over the Rainbow'.

Here you have some of its lyrics but there are words missing. Can you guess the missing words?



Somewhere over the rainbow
Way up _high_
There's a land that I've heard of
Once in a _lullaby_

Somewhere over the rainbow
Skies are _blue_
And the dreams that you dare to dream
Really do come _true_


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