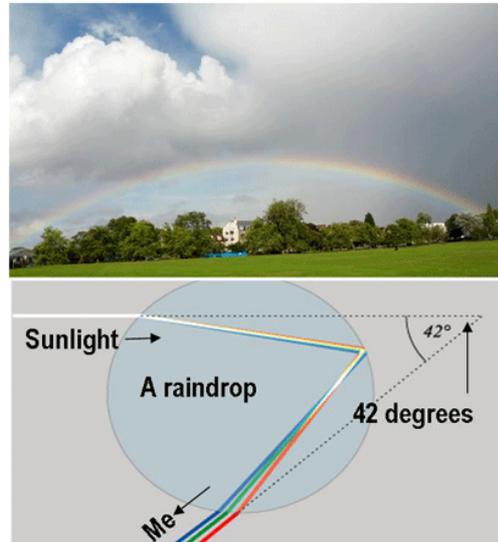


Rainbows

by Jane Lawson at DailyStep.com

Isn't it wonderful when a rainbow suddenly appears in front of you? There is something truly magical about it! The rainbow in this picture appeared while we were driving in the late afternoon. As soon as I saw this rainbow, I jumped out of the car and took this picture.

We all know that rainbows occur when it is raining and sunny at the same time. These weather conditions can cause white light to split into its full spectrum of coloured light. There are 7 colours in the spectrum: **red, orange, yellow, green, blue, indigo** and **violet**.



But how exactly does a rainbow form? Interestingly, the location of the rainbow totally depends on the position of the person who can see it, and on the position of the sun relative to that person. If the sun is shining towards your eyes, you will never see a rainbow. The sun needs to be behind you – so you will never be able to see a rainbow and the sun at the same time.

What happens is this: Light from the sun enters the raindrops, and because the **density** of the rain water is different from the density of the air, the sunlight refracts, that is, it bends slightly. When the light bends, it splits into a spectrum of coloured light because different colours of light refract at slightly different **angles**.

Some of this coloured light is **reflected** back off the internal surface of the raindrop, similar to a mirror. When we see this reflected light, the reason that we see each colour separately is that each colour of light bends back out of the raindrop at a slightly different angle, so we see all red light at an angle of 42 **degrees** between us and the sun, and all violet light at an angle of 40 degrees between us and the sun and the other colours at angles between 40 and 42 degrees. You can see a diagram of how this works in the bottom picture!

So that's the science! But there are legends and myths surrounding rainbows as well. My favourite is that there is a pot of gold at the end of the rainbow. It is impossible to find the end of a rainbow, though, so this gold will always be out of our reach!

Anyway, that's enough about rainbows for now! Let's move on to our Audio Word Study where I'll teach you more about some of the scientific words in this article, and some of their other meanings.

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