

TeachWithFergy

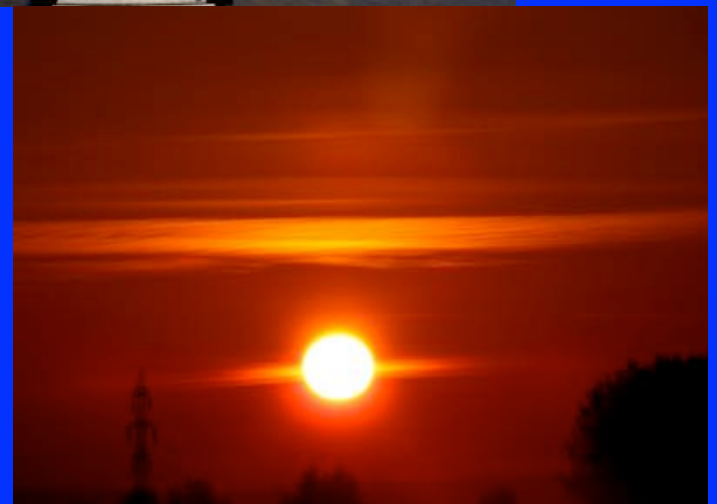
Preview File

Please enjoy this preview of your Student Version of the lesson. I've created this PDF for ease of viewing and to decrease the file size but of course, your lesson will be in PowerPoint format.

- Some slides appear blank because they have been removed.
- Student versions have portions of the text removed which is given in the teacher version and appear as _____
- Other slides may have on them, this represents writing that has been removed.

Why is the Sky Blue and Sunsets are Red?

- The Sun
- Light
- The Electromagnetic Spectrum
- Visible Light and Color
- Rainbows
- Why is the sky blue?
- Why is the Moon's sky black?
- Why are sunsets red?



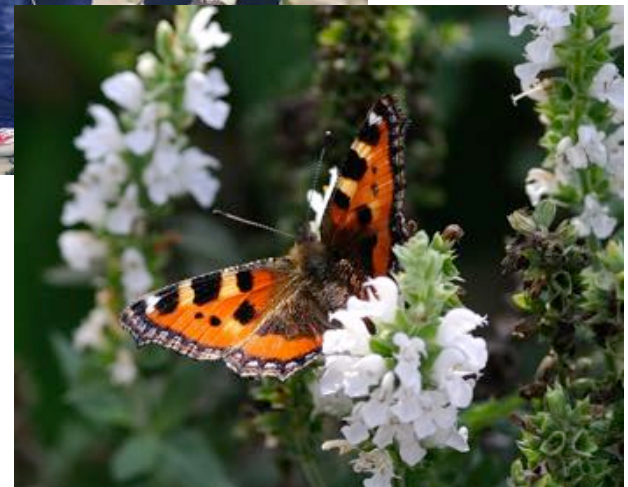
First let's talk about where light comes from



The SUN!!

- The Sun is a star located _____
- It provides energy in the form of light through a process called nuclear fusion

The sun provides the energy that enables life on Earth.



Light is made from electromagnetic waves that come from the Sun

- Electromagnetic waves are waves of energy that can travel through a vacuum (empty space)
- _____

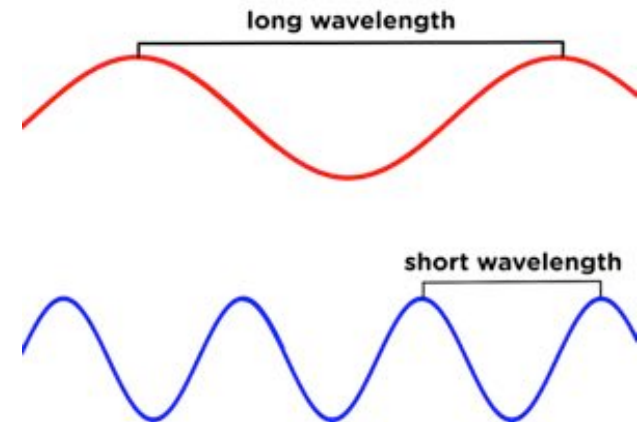


Photo credit: [Siyavula Education](#)

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Electromagnetic Waves

- The size of these waves goes from radio waves, as long as a building, to _____
- To figure out why the sky is blue, ...

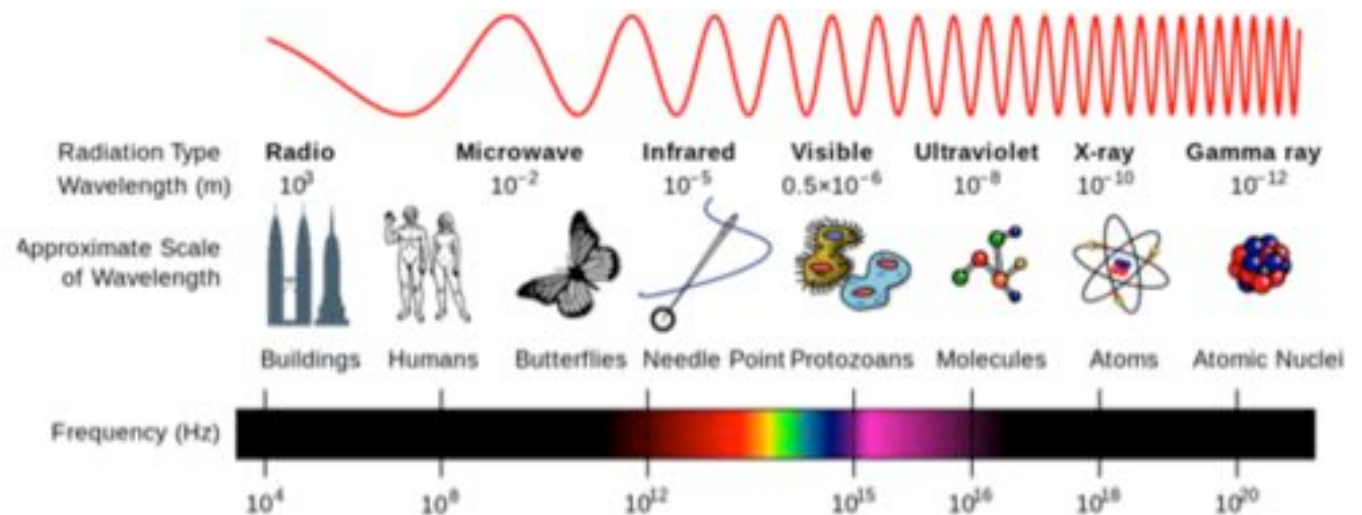
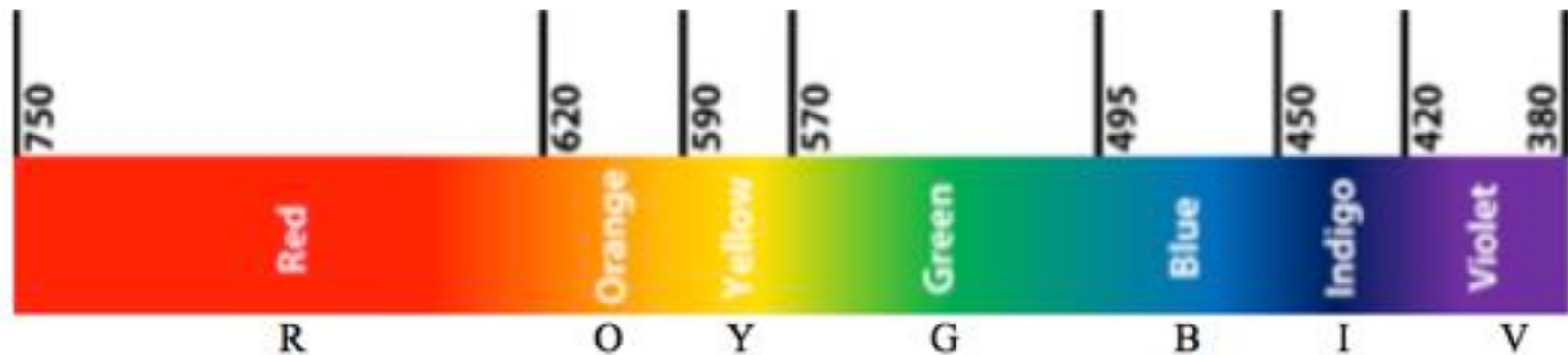


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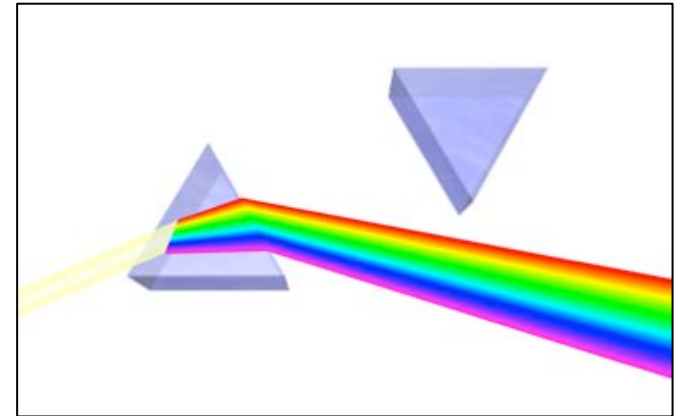
What is the visible light spectrum?

- The visible light spectrum is the part of the electromagnetic spectrum that humans can see
- The size of these waves is smaller than the point of a needle
- _____



Colour

- Sunlight is not a single colour; it is made up of a mixture of the seven colours of the rainbow
- We can demonstrate this by splitting



Simulation

Rainbows

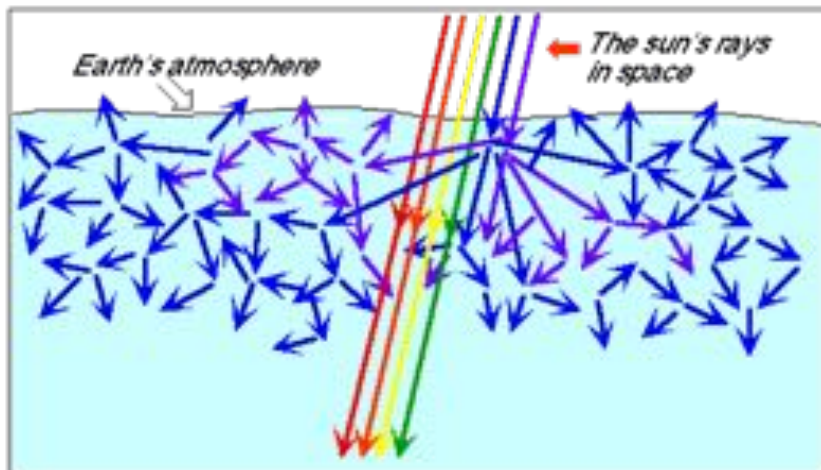
- This is why a rainbow appears the way they does.
 - An easy way to remember the order of colors from the longest wavelength to the shortest is to remember the acronym
-



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Why is the sky blue?

- Earth's atmosphere is mostly made of oxygen and nitrogen gas. As sunlight hits these particles, it gets scattered
- Earth's atmosphere scatters _____



Why is the sky blue?

- To be exact, blue light is scattered 16 times more than red light
- _____
- The graph below

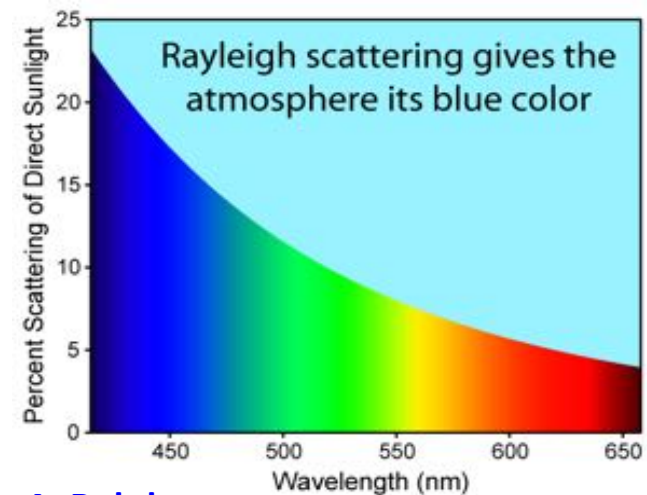
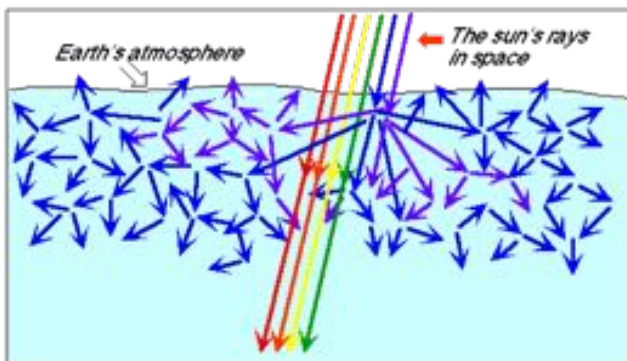


Photo credit: [Robert A. Rohde](#)

Why is the sky blue?

- We see the sky as blue because once sunlight hits our atmosphere; the blue light is scattered the most

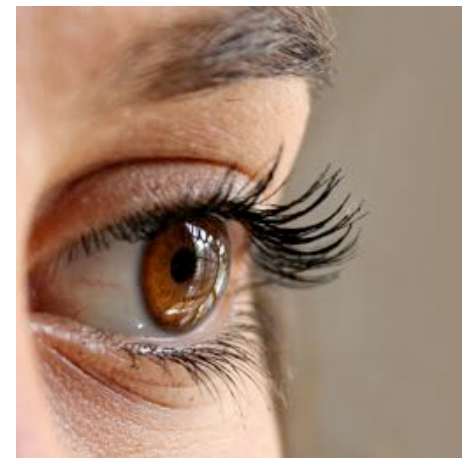
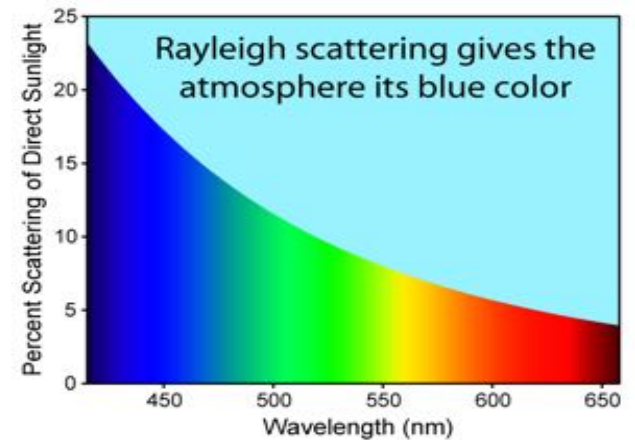
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What about violet light?

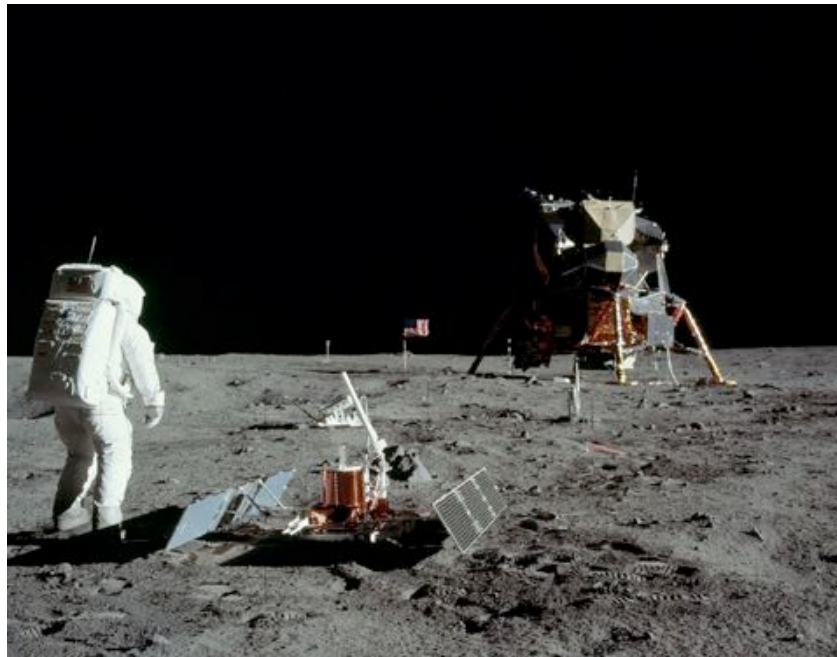
- The shorter the wavelength, the more it is scattered by the atmosphere
- Violet light is scattered the most but the sky isn't violet, why?
- _____



Black sky on the Moon

Think about what we've discussed so far and answer the following question in small groups.

The Moon gets sunlight just like Earth. Why then is the Moon's sky black during the daytime?

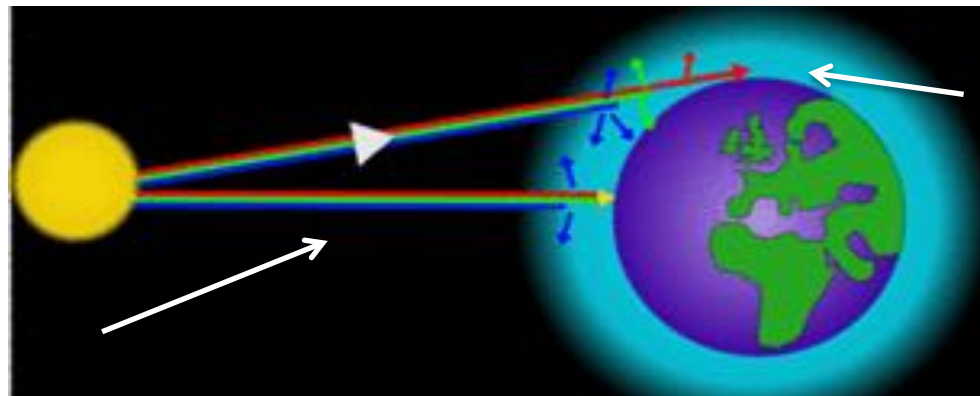


Why is the sky red at sunset?

- _____
- This causes blue and
- This also causes more amounts of yellow, orange and red light to be scattered
- We see this scattering



Daytime when the Sun is right overhead we see a blue sky.



At sunset, the Sun is at an angle and has to pass through more atmosphere. This gives us the red sunset.

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