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Why is the Sky Blue?

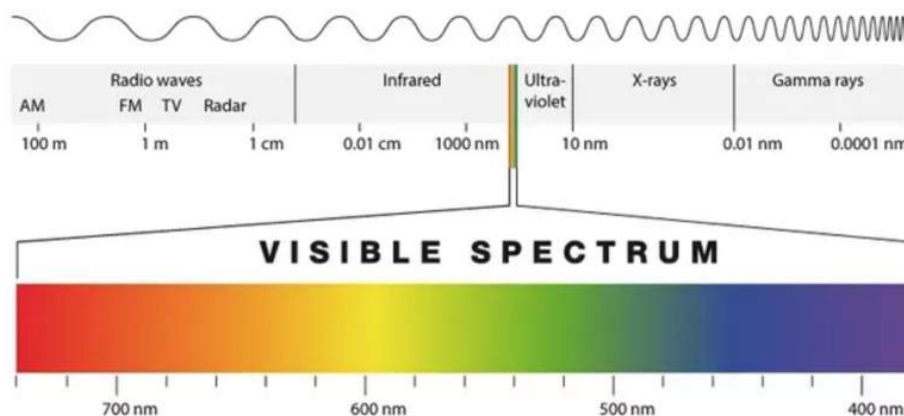


Electromagnetic waves

Electromagnetic waves are waves of energy that move empty space. Electromagnetic waves can be HUGE like radio waves, which can be as long as a building, to gamma rays, which are about the size of an atomic nucleus. When you look at all the different sizes you get the **electromagnetic spectrum**. To figure out why the sky is blue, we are going to look at waves that we can see. These waves are called the visible light spectrum.

Interesting Fact!

Light travels so fast that it can travel around the Earth 7.5 times in one second!



Electromagnetic waves – Waves that can move and transport energy through empty space.

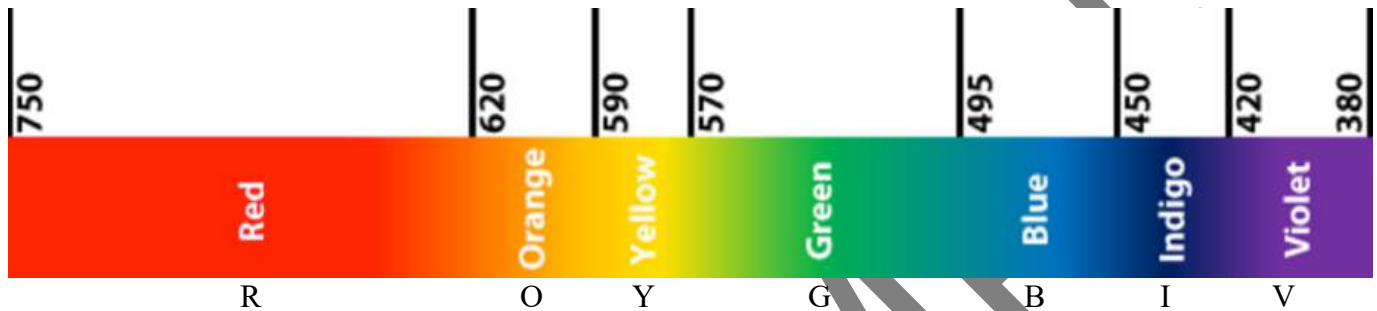
Electromagnetic spectrum – The range of frequencies (or wavelengths) that electromagnetic waves come in.

What is the visible light spectrum?

Reading Sample

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Rainbows happen when visible light from the Sun is split into its individual colors by water droplets in the sky. These water droplets usually come from recent rain.



Why is the sky blue?

First up, the sky isn't blue, it's transparent (clear or see through). The sky only looks blue. Earth's **atmosphere** is mostly made of oxygen and nitrogen gas. As sunlight hits Earth's atmosphere, it hits these particles and bounces around (scatters). Earth's atmosphere scatters violet light the most, then blue light, then green, all the way to red which is scattered the least (have another look at the spectrum above and look for a pattern). We see the sky as blue because once sunlight hits our atmosphere; the blue light is scattered the most. This allows us to see it.

Reading Sample

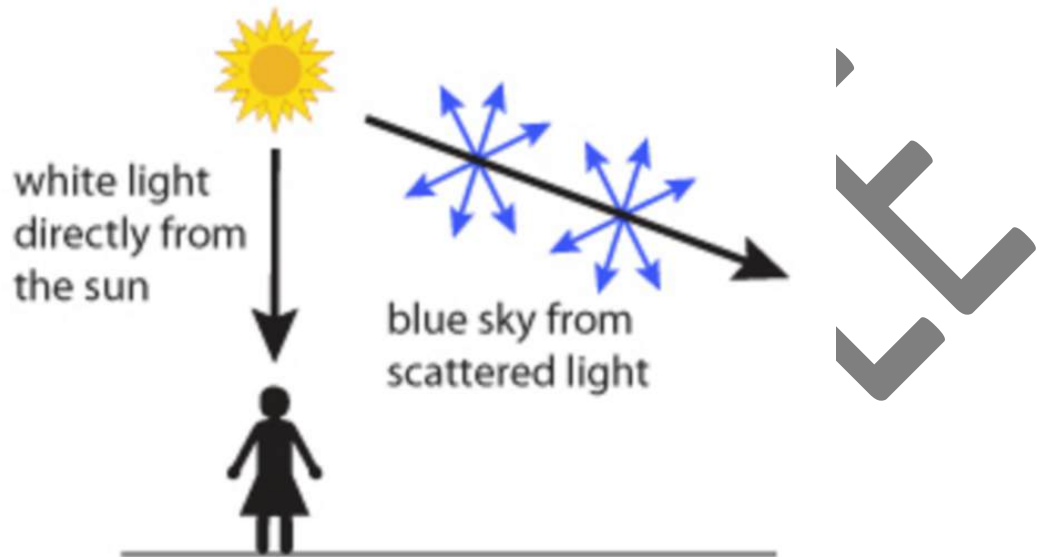
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Visible light spectrum – The range of electromagnetic wave frequencies that can be seen by the human eye.

Atmosphere – A layer of gases that surrounds Earth, protecting it and keeping our planet warm.

The other colors aren't scattered very much. They pass right through the atmosphere and light up the ground, buildings, people, etc. It's that light that makes daytime, bright. Violet light is scattered the most but the sky isn't violet. This is because it's a lot easier for humans to see blue light than violet light.



Why are sunsets red and not blue?

Reading Sample

TWFF

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Horizon: Also known as the skyline, it's the line that separates the Earth from the sky.

Reading Comprehension Questions:

1. What are electromagnetic waves?
2. What
3. What does ROY G BIV stand for? Which is the longest wavelength and which is the shortest wavelength?
4. What
5. According to the Rayleigh scattering, which wavelength is easiest for nitrogen and oxygen gas to scatter?
6. Why
7. What
8. Why are sunsets red?

Extension Questions:

9. If we
10. Create

Reading Sample



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TWF SAMPLE

References

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