

Orbiting The Sun

The Sun is possibly the most important thing in our solar system. It provides us with light and warmth, and its gravitational pull means that the Earth continues to spin at a steady rate. Without its influence, the Earth’s rotation would speed up, and life would be impossible. Despite all of this, it is also extremely lethal to life.

In comparison to how powerful it is, there isn’t much distance between the Sun and Earth. The radiation that the Sun emits is still lethally high by the time it reaches Earth. Without our atmosphere filtering out most of the harmful rays, nothing would be able to survive. Sunburn is a constant reminder of how powerful the Sun is, even with our ozone layer protecting us.

It takes the Earth 365¼ days to orbit the Sun. We call this a year. Every four years, our calendar has an extra day (the 29th February) to combine all of the quarter-years that have passed. This is called a leap year. It is important to remember that the Earth is also spinning on its own axis. This is what creates days. No matter where the Earth is in its journey around the Sun, it always takes 24 hours to spin once on its axis. This gives us day and night.

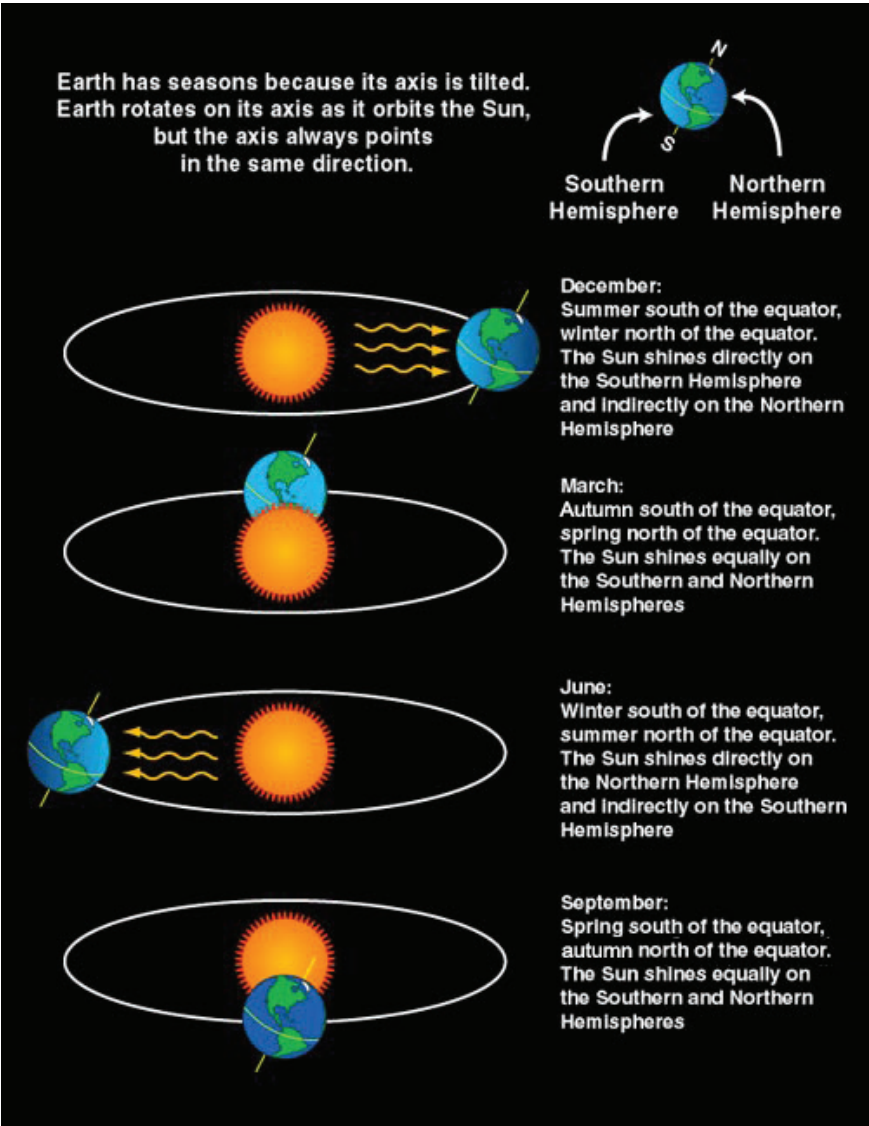


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It may surprise you to know that the Earth's axis is actually tilted. This means that each part of the Earth spends different amounts in the daytime at different points of the year. This is what gives us our seasons. We don't get warmer weather in summer because we are closer to the Sun (we are always roughly the same distance away from the Sun). It is because the angle with which we face the sun changes, and more sunlight hits us directly. In the winter, most countries are at a much shallower angle to the Sun, and so more sunlight bounces away. Imagine throwing a ball at a wall. The ball will hit the wall with all of its power. Now imagine the wall is tilted. The ball will still hit the wall, but it won't hit it with as much power, and will deflect off at an angle. This is the same with sunlight. The only places that don't experience this are on the equator.

RETRIEVAL FOCUS

1. How many days are there in a year?
2. What would happen without the Sun's gravity?
3. What protects us from the Sun's rays?
4. True or false: Summers are warmer because we are closer to the Sun.
5. Where on Earth doesn't experience seasons?

VIPERS QUESTIONS

I

Why is the Sun important to Earth?

S

Why do we have a leap year every four years?

E

Why has the author included an illustration of how seasons happen?

V

Find a word that has a definition closest to "rotate around".

V

Which word means "deadly"?

Answers:

1. $365\frac{1}{4}$
2. The spin of the Earth would speed up
3. Atmosphere/ozone layer
4. False
5. Countries on the equator

I: It provides us with heat, light and keeps it spinning steadily

S: The quarter days add up to one whole day every four years

E: The explanation is complicated and a diagram makes it easier to visualise

V: Orbit

V: Lethal