

Night and Day

All of these things are spinning. Are you spinning?

You're probably thinking, "I am just sitting here perfectly still. How could I possibly be spinning?"

Well, even though you don't feel it, everything on Earth is spinning around very fast! Earth completes one rotation on its axis every 24 hours.

How fast are we all spinning on Earth? Well, let's take a look at some math to figure it out.

The speed of an object is calculated by the distance traveled divided by the time it takes to travel it.

The distance around our planet along the equator, you'd have to travel 24,901 miles. That's a lot of miles! It takes 24 hours for the Earth to rotate one time, so we divide the distance in miles by the amount of time in hours. The quotient is 1037.5. When we divide miles by hours, the unit, miles per hour, is the result. This unit is pretty familiar.

This means that the Earth is rotating at a speed of just over 1000 miles per hour. Everything on Earth is also rotating at this speed, including you and me!

Now, imagine that you are on a merry-go-round looking out. It may appear as though everything you see is moving around you, but it is you that are in motion.

When you look up at the sky during the day and the night, you're looking up into the universe through a window from Earth.

As our planet travels through space, celestial objects like the Sun and the Milky Way will pass by your window in the sky.

When the side of the planet you are on is facing the sun, you experience day.

When you are facing away from the sun, it is night. This means that when it's day in the United States, it's night in India on the other side of the planet.

As Earth rotates on its axis, half of it is always facing the sun. The portion of the Earth that is receiving sunlight is constantly changing as our planet spins.

When you are watching a sunrise, you are essentially spinning eastward into the light and the sun pops up along the horizon.

As the day progresses, the sun will pass through your sky window as you continue to spin around until the sun falls behind the western horizon and out of view.

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Once the sun is no longer visible, its light no longer outcompetes the light from other stars in the galaxy and beyond. You can sit out all night on your own celestial vehicle, Earth, while it spins on its axis, providing fantastic 360 degree views of the universe.
