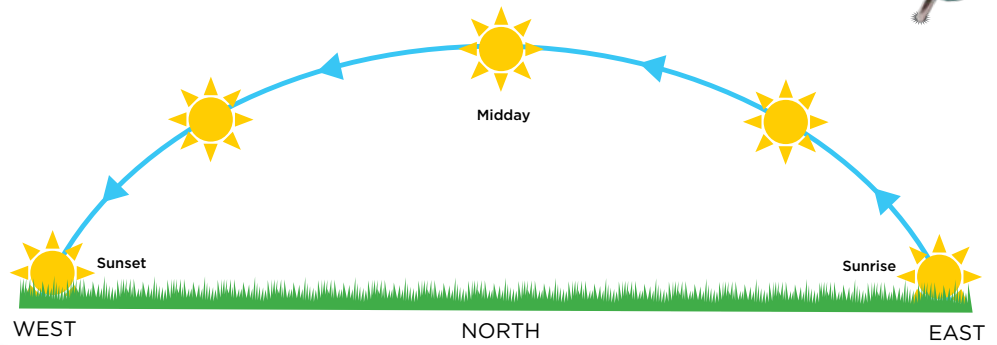


STARDOME OBSERVATORY & PLANETARIUM FACTS, RESOURCES AND ACTIVITIES ON...

DAY AND NOT DAY

When you look up at the sky, you'll see the Sun rise in the east, and set in the west. During the day, the Sun appears to move around Earth and at night, the stars appear to move around Earth. People once believed that Earth was the centre of the universe and did not understand that Earth was rotating, which made everything in the sky appear to move around us.



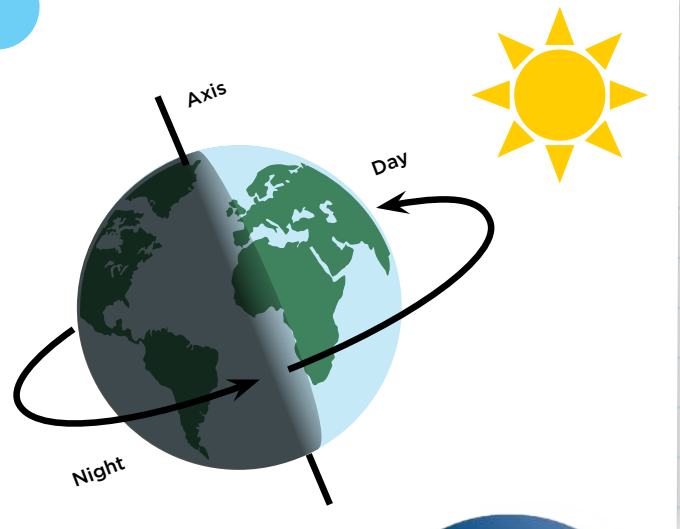
Some students might think that we can't feel Earth turning because it is moving so slowly. However, Earth is spinning at over 1,000 km/hr! The reason we don't feel it moving is because the movement doesn't change. This is like the sensation of not moving when in an airplane. You are travelling much faster than in a car, however since the direction and speed don't change in mid-flight, you get the sensation of not moving.

The Moon is the only celestial body that orbits Earth but it's not what causes day and night. In fact, the Moon can sometimes be seen during the day. It is a common misconception that the Moon is only visible at night, and so some students assume that the Moon is what causes night. Demonstrating what creates day will show students that the Moon does not make night.

The Sun is the source of all our heat and light, which means dark comes from lack of day. Night is just the time when we cannot see the Sun and because Earth is a sphere, only half of the planet is ever facing the Sun at any one point. The half of Earth that is facing away from the Sun is in shadow, and that is why it is dark at night.

The Sun is not the only star that appears to move across our sky.

See teacher resource: [Daytime Moon](#)



Does the Sun turn off to make night?

Is it warmer or colder when you can see the Sun?

Is Earth moving right now?

DISCUSSION POINTS



ACTIVITY

STARDOME OBSERVATORY & PLANETARIUM

MAKE NIGHT!

You'll need:

- ⇒ Lamp
- ⇒ Desk
- ⇒ Globe
- ⇒ A darkened room

Instructions:

- Take a lamp and put it on a desk at the front of the room, this will represent the Sun later in the activity.
- On your globe, point out the north pole, the south pole, and the equator.
- Get your students standing up, to act as Earth.
 - > Have them touch the top of their head and say: "north pole".
 - > Have them touch their toes and say: "south pole".
 - > Have them rub their bellies and say: "equator".
- Now that they are all honorary Earth's, have them face the "Sun" and turn off all the other lights, so the only source of "heat and light" is coming from your lamp.
 - > Ask them what time it is when the Sun is visible in the sky.
- Once they have worked out that it is daytime, ask the students to make it night time.
 - > Some might close their eyes, or put their hands over their eyes, and so you can ask them if they would see stars that way.
 - > Some might ask you to switch the lamp off. You can do this, and ask them if they see the Sun switch on and off.
 - > Some might ask you to move the lamp below the desk. You can do the motion, and get a lot of the students to agree that this is what sunset looks like. But tell them that the Sun doesn't move at all, and that it is Earth that is moving.
- If they have not understood, ask them to turn their back to the lamp, and ask them what time is it when the Sun is not in the sky.

- Have them create daytime and nighttime repeatedly, and see if any are rotating, or just turning back and forth. Show them on your globe, and ask them if they think Earth turns back and forth like that, or if Earth spins around.
- Now get your students to spin around creating an entire week on Earth. Once they have spun around seven times, they should realise that the Sun is not the only thing that looks like it is going around Earth, but when they were spinning, the entire room seemed to move.



Take a photo of your activity and send it to us. We'd love to see it! education@stardome.org.nz



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