



Earth's Movement and Seasons! Year 6 Science at Home

You can help! Your child is learning how Earth moves around the sun and how this explains day and night, the seasons and the changing length of days. The sky above you tells this story every day!

Why are we learning this? Earth's movement and Country

Understanding Earth's movement around the sun has been fundamental to human survival for thousands of years. First Nations Australians have sophisticated astronomical knowledge — using the night sky, the seasons and the angle of the sun to plan when to move, what to harvest and how to navigate. Stone arrangements across Australia show how people tracked the sun's position through the year. When your child learns about Earth's tilt and orbit, they are discovering the same patterns that First Nations peoples have observed and used for generations.

My child will learn to:

✓ Describe Earth's orbit

Know that Earth travels around the sun once every year in a path called an orbit.

✓ Explain day and night

Understand that Earth's rotation on its axis causes day and night — each full rotation takes 24 hours.

✓ Explain seasons

Describe how Earth's tilt means one hemisphere gets more sunlight at different times of year.

✓ Model the system

Use a model or role play to show how Earth, the sun and the solar system relate to each other.

Big ideas to know:

Earth's rotation

Earth spins on its axis — an imaginary line through the North and South Poles. One full spin takes 24 hours. The side facing the sun has day; the side facing away has night.

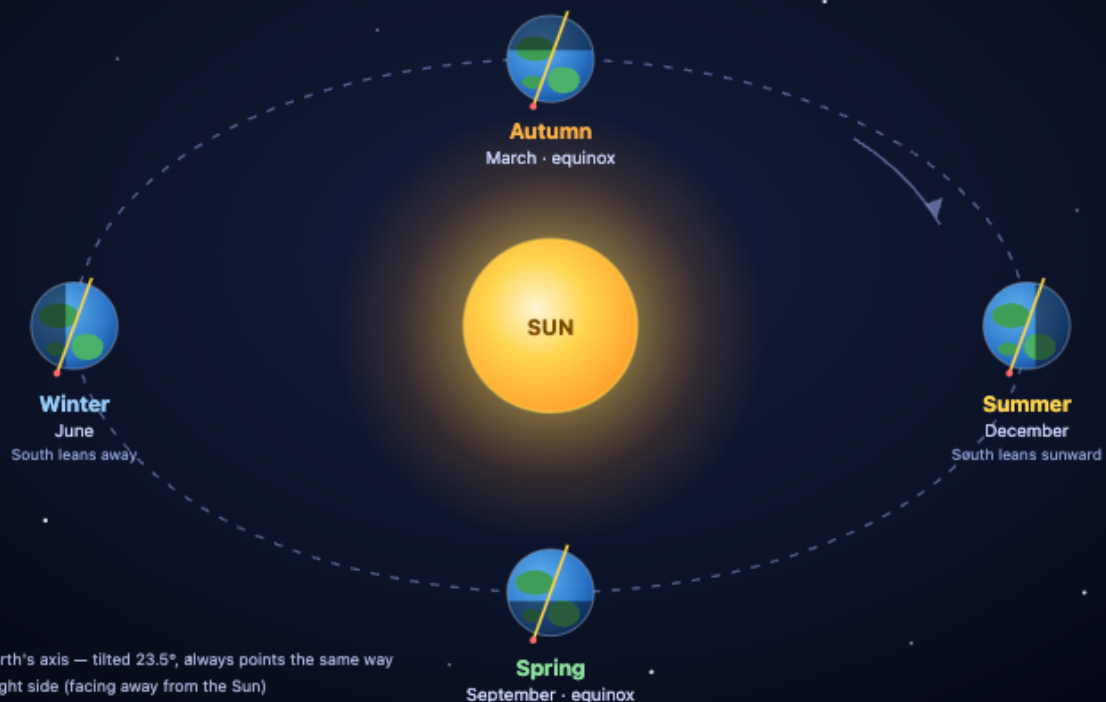
Earth's orbit

Earth travels around the sun in a path called an orbit. One full orbit takes 365.25 days — that is one year! Earth is always moving, even though we cannot feel it.

Earth's tilt and seasons

Earth's axis is tilted at 23.5 degrees. When the southern hemisphere is tilted TOWARDS the sun, it is summer (December in Australia). When tilted AWAY, it is winter (June).

Earth's Movement Around the Sun





Earth's Movement and Seasons! Year 6 Science at Home

Understanding day, night and seasons

Phenomenon	Caused by	How to see it
Day and night	Earth rotating on its axis once every 24 hours	Watch the sun move across the sky — it appears to move because WE are rotating!
Longer days in summer	The hemisphere is tilted towards the sun, getting more hours of sunlight	In December up here, sunrise is very early and sunset is late
Shorter days in winter	The hemisphere is tilted away from the sun	In June, nights are longer and days shorter — though subtle in the tropics!
Seasons opposite to Europe	Earth's tilt means when it is summer here, it is winter in Europe (northern hemisphere)	Christmas in the wet season while European children have snow!
Year length	Earth completing one full orbit around the sun	365 days and 6 hours — that is why we have a leap year every 4 years

Think Like a Scientist — Day and Night Model

Use a torch as the sun and a ball as Earth. Slowly spin the ball while holding it at the same distance from the torch. Watch how one side is in light (day) and one in shadow (night). Now tilt the ball slightly and see how the amount of light changes.

Ask: "When is the top half of the ball tilted towards the torch? Is that the northern hemisphere summer or winter? Now tilt it the other way — what changes?"

You will need: (Materials)

- Torch or lamp (as the Sun)
- Large ball or orange (as Earth)
- Dark room or dim light
- Marker (optional — to mark a spot on the ball)
- Paper and pencil for observations

Things to explore:

1. Torch + ball: show day and night by spinning the ball
2. Torch + tilted ball: show how tilt changes the amount of light each hemisphere receives
3. Go outside at sunrise and sunset — notice what direction the sun rises and sets
4. Track the length of daylight over a week by noting sunrise and sunset times
5. Look up where the International Space Station is tonight and watch it pass overhead!

Questions to ask your child

1. Why do we have day and night? What is Earth doing?
 2. Why is it summer in Australia when it is winter in England?
 3. How long does it take Earth to travel once around the sun?
 4. Why does the sun seem to move across the sky even though it is not actually moving?
 5. What would happen if Earth were NOT tilted? Would we have seasons?
 6. How did First Nations peoples use the sun, moon and stars to track the seasons?
 7. Why is Christmas Day in the middle of the wet season up here?
- A simple torch and a ball (or even an orange) can model the whole solar system! Use a dark room for best effect, and take turns being the sun while the other person spins and tilts the Earth.*

Key words to know:

Orbit	The path an object takes as it travels around another object — Earth orbits the sun
Rotation	Earth spinning on its axis — one full rotation takes 24 hours and causes day and night
Revolution	Earth's journey all the way around the sun — one revolution takes 365.25 days (one year)
Axis	An imaginary line through Earth's North and South Poles that Earth spins around
Tilt	Earth's axis is tilted at 23.5 degrees — this causes the seasons
Season	A time of year defined by weather patterns caused by how much sunlight a hemisphere receives
Hemisphere	Half of Earth — northern hemisphere (above equator) or southern hemisphere (below equator)

Key words to look up

Orbit · Rotation · Revolution · Axis · Tilt · Season · Hemisphere

What school will check

Your child needs to describe Earth's movement and model how Earth's tilt, rotation and revolution around the sun explain day and night and seasons.

Try it at home!

On a clear night, stand outside and look at the stars for 30 minutes without moving. They will appear to slowly shift across the sky. This is NOT the stars moving — it is Earth rotating! Can you spot it?

