

4. Earth (3rd Planet)

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Distance: 149.6 million km

Diameter: 12,742 km

Moons: 1 (Moon)

Unique features:

Only known planet with life

Liquid water

Oxygen atmosphere

Composition:

Rock

Metal core

Water oceans

Atmosphere:

Nitrogen: 78%

Oxygen: 21% give every thing about earth



Earth – The 3rd Planet from the Sun 

Earth is the only known planet that supports life. It has liquid water, a breathable atmosphere, and stable conditions that make life possible.

Basic Facts

Position from Sun: 3rd planet

Average Distance from Sun: 149.6 million km (1 Astronomical Unit)

Diameter: 12,742 km

Radius: 6,371 km

Circumference: 40,075 km

Surface Area: 510 million km²

Mass: 5.97×10^{24} kg

Gravity: 9.8 m/s²

Length of Day: 24 hours

Length of Year: 365.25 days

Number of Moons: 1 (Moon)

Age: About 4.54 billion years

Structure and Composition

Earth has 4 main layers:

1. Crust

Thickness: 5–70 km

Made of rock

This is where humans live

Types:

- Continental crust (land)
- Oceanic crust (under oceans)

2. Mantle

Thickness: about 2,900 km

Made of hot semi-solid rock

Slow movement causes earthquakes and volcanoes

3. Outer Core

Thickness: about 2,200 km

Liquid iron and nickel

Creates Earth's magnetic field

4. Inner Core

Radius: about 1,220 km

Solid iron and nickel

Very hot (about 5,400°C)

Surface Composition

Land: 29%

Water: 71%

Water exists as:

- Oceans
- Rivers
- Lakes
- Ice

Earth is called the **Blue Planet** because of its oceans.

Atmosphere

Earth's atmosphere protects life and provides oxygen.

Composition:

Nitrogen — 78%

Oxygen — 21%

Argon — 0.93%

Carbon dioxide — 0.04%

Other gases — small amounts

Functions:

- Provides oxygen to breathe
 - Protects from harmful radiation
 - Controls temperature
 - Burns meteors before reaching surface
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Temperature

Average temperature: 15°C

Range:

- Maximum: about +56°C
 - Minimum: about –89°C
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Orbit and Rotation

Earth rotates on its axis → causes day and night

Time to rotate once: 24 hours

Earth revolves around Sun → causes seasons

Time to revolve: 365.25 days

Tilt of axis: 23.5°

This tilt causes seasons.

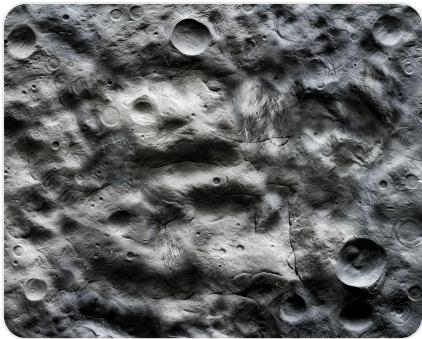
Magnetic Field

Earth has a strong magnetic field.

Functions:

- Protects from solar radiation
 - Protects atmosphere from being stripped away
 - Allows compass navigation
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The Moon



Earth has one natural satellite: The Moon

Distance from Earth: 384,400 km

Diameter: 3,474 km

Functions:

- Controls ocean tides
- Stabilizes Earth's rotation
- Slows Earth's rotation gradually

Unique Features of Earth

Only planet known to have:

- Life
- Liquid water on surface
- Oxygen-rich atmosphere
- Suitable temperature
- Strong magnetic field
- Plate tectonics

Movement of Earth

Two main motions:

Rotation

Earth spins on axis → 24 hours

Revolution

Earth orbits Sun → 365.25 days

Speed of rotation: 1,670 km/h

Speed of orbit: 107,000 km/h

Internal Energy and Activity

Earth is geologically active:

- Volcanoes
- Earthquakes
- Plate tectonics
- Mountain formation

This activity reshapes Earth constantly.

Earth's Position in Solar System

Order from Sun:

1. Mercury
2. Venus
3. Earth
4. Mars
5. Jupiter
6. Saturn
7. Uranus
8. Neptune

Earth is the largest terrestrial planet.

Why Earth Supports Life

Reasons:

Correct distance from Sun (Habitable Zone)

Liquid water

Oxygen atmosphere

Magnetic field protection

Stable temperature

Gravity strong enough to hold atmosphere

Earth Compared to Other Planets

Type: Terrestrial (rocky planet)

Not gas giant

Not ice giant

Closest planet: Venus

Neighbor planets: Venus and Mars

Fun Facts

Earth is the only planet not named after a Roman or Greek god

Earth is the densest planet

Light takes 8 minutes to reach Earth from Sun

Earth rotates slightly slower over time

~~Earth is not perfectly round — slightly flattened at poles~~

— ChatGPT 5.2 ▾

↑ ...

Summary Table

Feature	Value	🔗
Position	3rd from Sun	
Distance from Sun	149.6 million km	
Diameter	12,742 km	
Moons	1	
Surface	Rock and water	
Atmosphere	Nitrogen, Oxygen	

Feature	Value
Water Coverage	71%
Day Length	24 hours
Year Length	365.25 days
Age	4.54 billion years
Average Temp	15°C

If you want, I can also make school project notes, 10-point short answer, or a presentation version.

