



Your way to get along around the Globe. 1 ESO.
Prof. Jn Grimal.



OUR PLANET BASICS PDF.

1 Planet Earth Characteristics.¹

The Earth is an almost perfect sphere, but slightly **flattened** at the North Pole and the South Pole.

The total surface area of the Earth is approximately 510 million km². Only 30% (about 150 million km²) is land (continents and islands). The remaining 70% (around 360 million km²) is covered by water (oceans, seas, lakes and rivers).

1.1. The Earth in the Solar System

The Earth is one of eight planets that, together with the Sun, make up our **Solar System**. The solar system is comprised of the following celestial bodies:

- **A star**, called the Sun, which produces its own light.
- **Planets**, which rotate on their axes and revolve around the Sun, and don't produce their own light.
- **Satellites**, which are smaller than planets and rotate on their axes and revolve around some planets. The Earth's satellite is the Moon.

The distance between the Earth and the Sun is approximately 150 million km. The distance between the Earth and the Moon is approximately 384 000 km.

The position of the planets in the Solar System, from closest to furthest from the Sun, is: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Pluto, which used to be included in this group, is no longer considered a planet because of its small size.

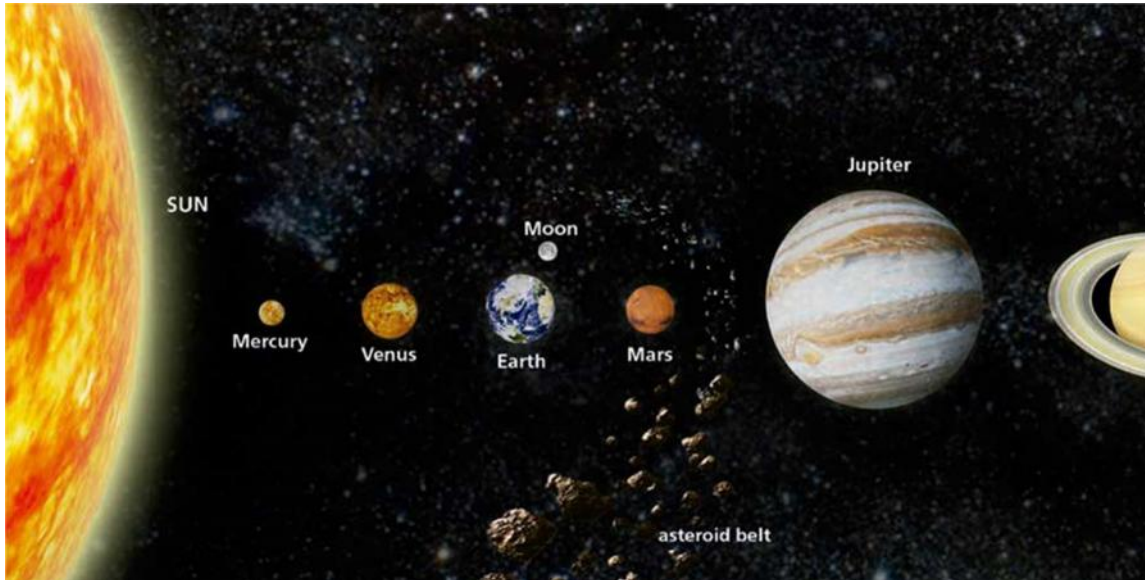
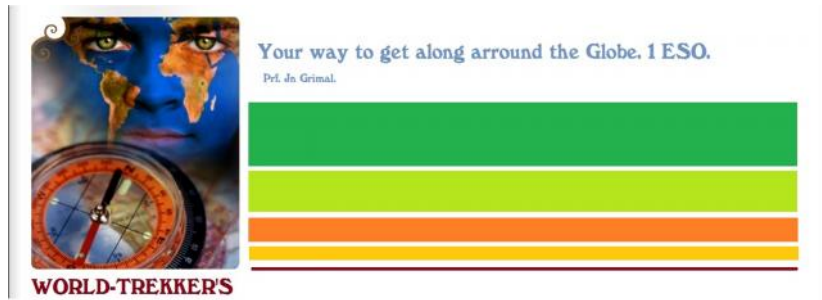
1.2. Our Solar System in the Universe

The Universe is made up of more than a hundred billion galaxies. These galaxies come in many shapes; spherical, elliptical, spiral and irregular. Our Solar System is located in a spiral galaxy called the Milky Way.

A galaxy is made up of a combination of planets, stars, gas clouds and cosmic dust.

¹ SOURCE:

https://www.blinklearning.com/Cursos/c612899_c28988679_Portada.php FREE SAMPLE TRIAL FOR EDUCATIONAL PURPOSES OF Student's book ISBN: 978-84-673-9257-9



1.3. The existence of life on Earth

The existence of life on Earth depends on three main factors:

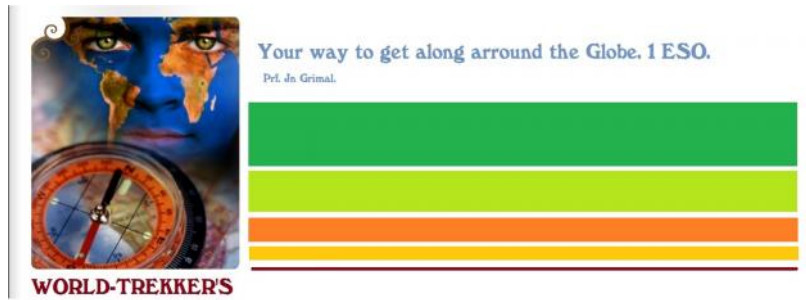
- The distance from the Sun which creates the appropriate temperature, not too hot (Venus has an average temperature of 457 °C) or too cold (Uranus has an average temperature of -220 °C).
- The presence of abundant water, where the first forms of life appeared. Water supports life and is essential for survival.
- The existence of an atmosphere, a layer of gases which surrounds the Earth and protects life from dangerous solar radiation.

2. The Earth's movements.

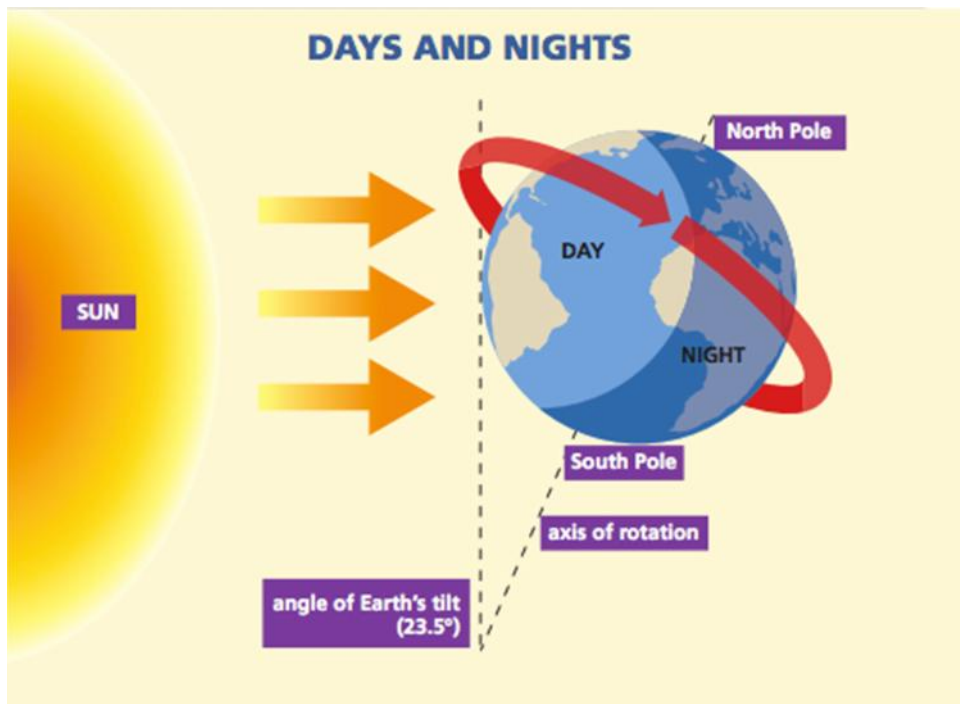
Just like the other planets, the Earth moves in two different ways: **rotation** and **revolution**.

2.1. Rotation.

Rotation is the movement of the Earth as it turns on its own **axis**, once every 24 hours (one day).



The Earth rotates on an imaginary line called the **Earth's axis**. The axis is a little tilted and runs through the centre of the planet between the North and South Poles.



In the diagram, you can see that the Sun's rays only reach part of the Earth's surface. As the Earth turns on its axis during the course of the day, different parts of the planet are gradually illuminated. This is what causes **days** and **nights**.

2.2. Revolution

Revolution is the movement of the Earth around the Sun, creating an elongated or **elliptical orbit**.

It takes the Earth **365 days** and **6 hours** to complete one revolution. A calendar year is 365 days, so the 6 hours accumulate. Every 4 years we add one day to the month of February, which goes from 28 days to 29. A year with 366 days is called a **leap year**.

Because the Earth's axis is tilted, the Sun's rays hit the Earth differently depending on the time of year, causing variations in temperature and the length of the day. So, as the



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Earth revolves around the Sun, we get different seasons: spring, summer, autumn and winter. The seasons in the Northern and Southern Hemispheres are opposite: when it is summer in the Northern Hemisphere, it is winter in the Southern Hemisphere.

THE SEASONS IN THE NORTHERN HEMISPHERE

Spring Spring begins with the **spring equinox**. At this time, the Sun's rays fall directly on the Equator. Days and nights are the same length, 12 hours. (In the Southern Hemisphere it is autumn.)

Winter Winter begins with the **winter solstice**. At this time, the Sun's rays fall directly on the Tropic of Capricorn. This is when the days are shortest and coldest in the Northern Hemisphere.

Summer Summer begins with the **summer solstice**. At this time the Sun's rays fall directly on the Tropic of Cancer. This is when the days are longest and hottest in the Northern hemisphere. (It is winter in the Southern Hemisphere.)

Autumn Autumn begins with the **autumn equinox**. At this time, just as in spring, the Sun's rays fall directly on the Equator. Days and nights are the same length.