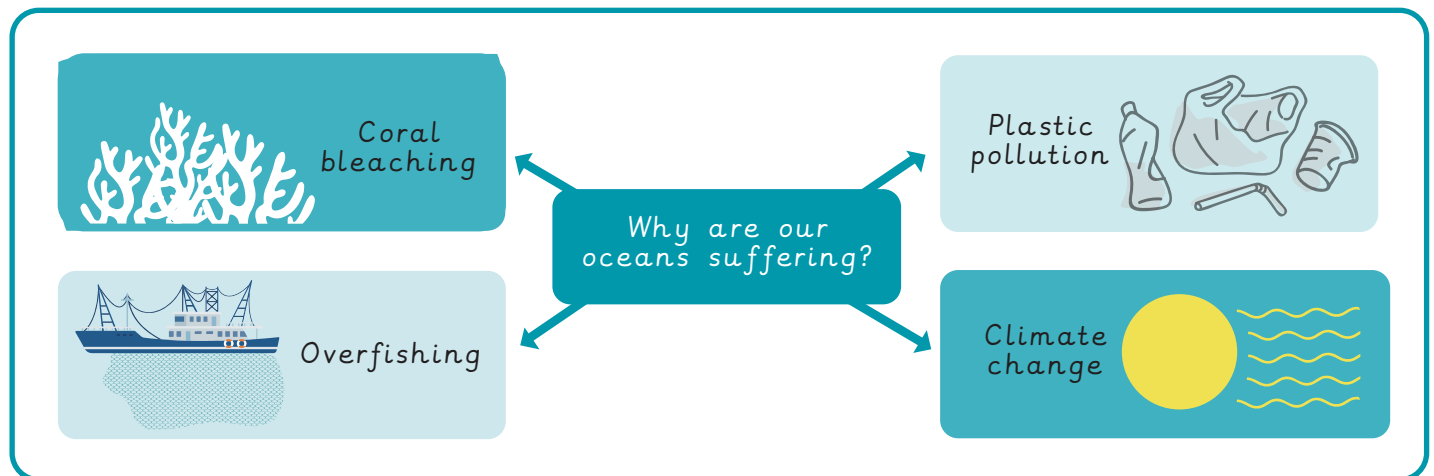
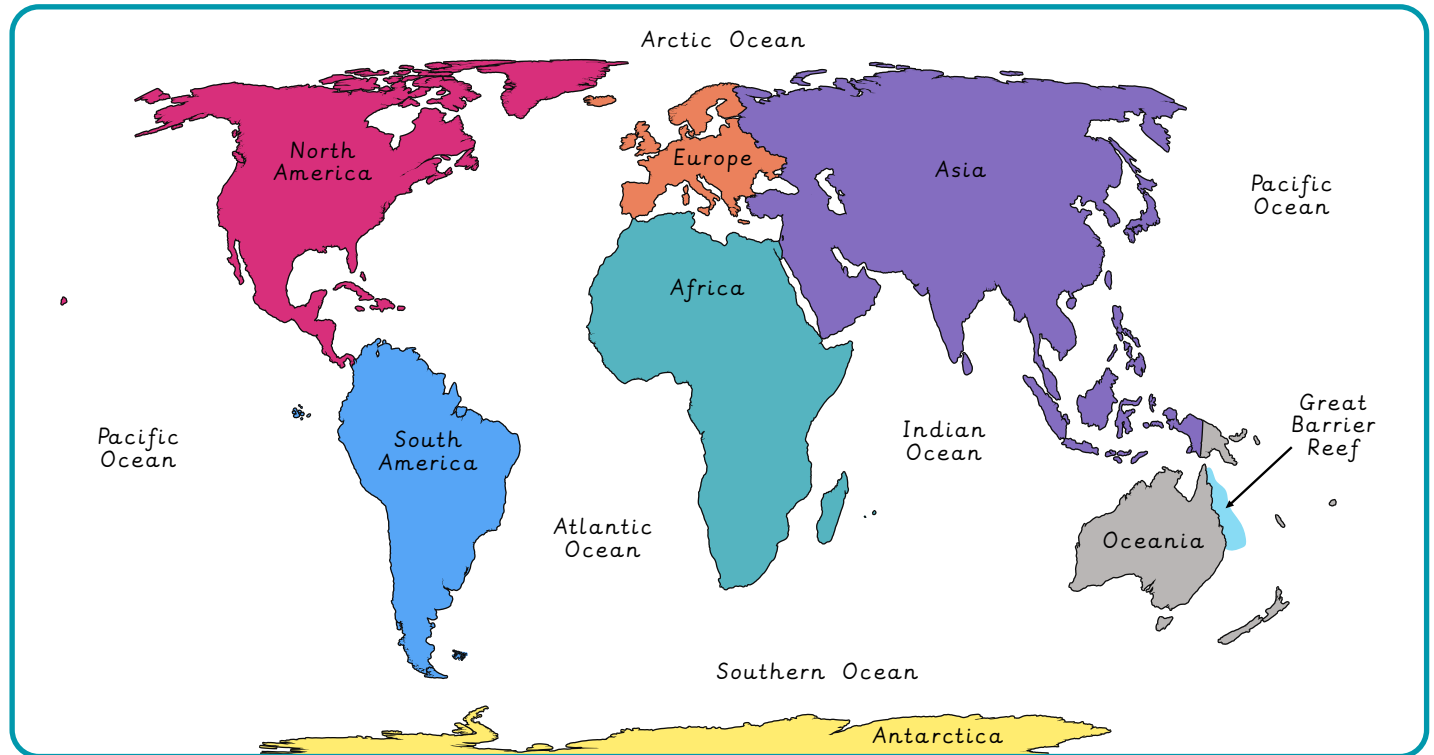


Why do oceans matter?

Ways to support a healthy ocean:

- Trying to avoid buying single-use plastics.
- Recycling any plastics where possible.
- Only buy what you need.
- Buying second-hand.
- Re-using or re-purposing items.
- Teaching others about the ocean.
- Only buy the seafood you need.
- Trying to use natural fertilisers in gardens.
- Walking or cycling if you can.



Why do oceans matter?

Why are oceans important?

- They are used for trading between countries.
- Ocean currents influence our weather.
- They provide food and jobs.
- They are used for fun activities.
- They give us ingredients for medicine.
- They absorb carbon dioxide and warm our planet.
- Coral reefs act as a buffer to natural disasters.
- Coral reefs are home to a quarter of our marine species.



ocean current	The movement of a large area of seawater driven by the wind, gravity and water density.
coral reef	A large rock structure in the ocean formed by corals.
coral bleaching	A process which turns coral white, losing its colour.
marine	Relating to the ocean.
threat	Something likely to cause damage.
microplastics	Tiny pieces of plastic created from plastic waste.
acidification	The process of making something acidic.
overfishing	The number of fish decreases as a result of extreme amounts of fishing.
biodegradable	When something naturally breaks down and returns to nature.
Marine Protected Area	A designated geographical area of the ocean that is protected and managed.
single-use plastic	Plastic only used once and then thrown away.



EARTHQUAKES KNOWLEDGE ORGANISER



Overview

- Earthquakes are the shaking, rolling or sudden shock of the earth's surface.
- Earthquakes happen when two large pieces of the Earth's crust suddenly slip. This causes shock waves to shake the surface of the Earth.
- Earthquakes are often nothing more than small tremors or shakes. However, large earthquakes have the power to destroy widespread damage and devastation.
- The strongest earthquakes have destroyed whole cities, and (depending on where they take place) can cause multiple human casualties.
- Earthquakes can cause mudslides. If they take place under the sea, they can trigger tsunamis.



Damage caused by a 7.2 scale earthquake that hit the country of Haiti in August 2021.

Well-Known Earthquakes

Knossos, Crete (1500BCE) Unknown		One of several events that are thought to have combined to destroy the Minoan capital city. Proof that man has had to contend with severe earthquake since the ancient times.
Shaanxi, China (1556) Unknown		Quite possibly the deadliest earthquake of all time. 830,000 people are thought to have died. An 840-kilometre area was destroyed, and in some of the 97 counties affected, up to 60% of the population died.
Valdivia Earthquake (1960) 9.5		Also known as the Great Chilean Earthquake. This was the largest earthquake ever recorded on the Richter Scale. It created a tsunami that killed people as far away as Japan.
Prince William Sound, Alaska (1964) 9.2		Despite being one of the strongest earthquakes ever recorded, relatively few people died as a result. This is due to it occurring in Alaska – one of the most sparsely populated areas in the world. Around 131 people were killed by tsunami waves.
Indian Ocean Earthquake (2004) 9.1		The deaths from this massive offshore quake occurred as a result of the massive tsunami waves it generated. Around 230,000 people were killed, including in Indonesia, Sri Lanka and Thailand.
Port-au-Prince, Haiti (2010) 7.0		The Haitian Earthquake devastated the Metropolitan area of Port-au-Prince. It killed 316,000 people, and left around 1.5 million survivors homeless. An estimated 3 million were affected.

Key Vocabulary

- Earthquake
- Tremor
- Vibration
- Tectonic Plate
- Epicentre
- Hypocentre
- Fault
- Richter Scale
- Waves
- Seismometer
- Mudslide
- Tsunami
- Pressure
- Ring of Fire
- Engineering

Answers to the Important Questions

What causes earthquakes?

-Beneath the earth's surface are huge pieces of flat rock called tectonic plates. They move very, very slowly, and the places where they meet are called faults. When the plates rub together, the movement and friction causes waves of energy to travel to the earth's surface. These are felt on the surface as earthquakes.

What are the different parts of an earthquake?

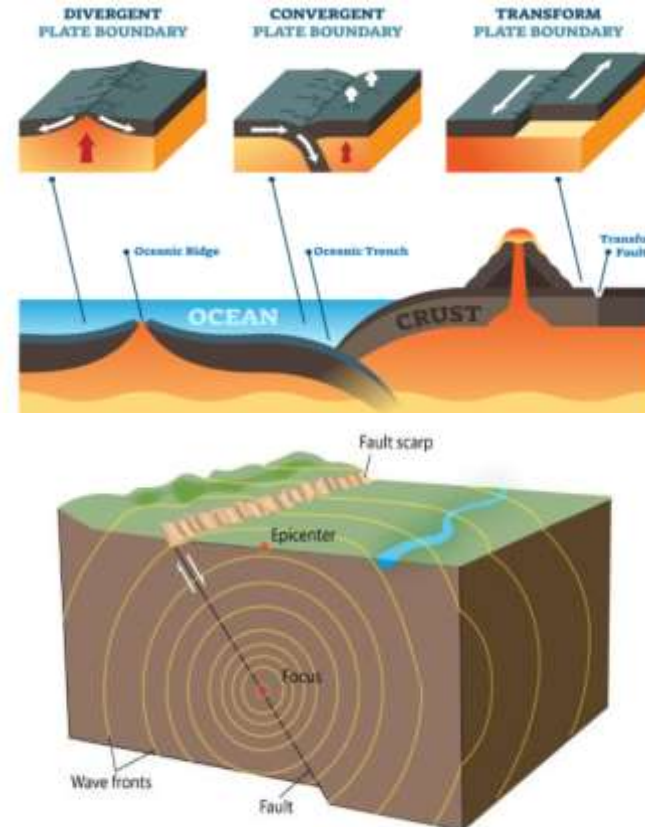
The epicenter of an earthquake is the area on the surface directly above where the earthquake started. The hypocenter/focus is the area below the surface where the earthquake originated.

Why are some earthquakes stronger than others?

- The size of the plates that collide together is one factor, as is the speed at which they come together (the larger they are and the faster they are moving, the larger the earthquake). Another factor is the amount of pressure that has been built up. Some tectonic plates become 'stuck' on one another and keep moving, building up pressure which is then suddenly released.

How is the size of an earthquake measured?

-The Richter Scale is the main measure of earthquake strength. A seismometer is used to measure impact waves. It was developed by Charles Richter in 1935.



Interesting Facts

1. Around 80% of earthquakes happen around the Pacific 'Ring of Fire', where fault lines are located.
2. 9.5 is the largest ever recorded earthquake on the Richter Scale.
3. Alaska is the most earthquake-prone place in the world.
4. There are around 20,000 earthquakes per year.
5. However, only around 15 per year are over 7.0 on the Richter Scale.
6. Tectonic plates move less than 3 inches per year.
7. Some animals may sense weak tremors before an earthquake.
8. Good engineering can prevent buildings from collapsing in earthquakes.
9. These buildings 'wobble' in quakes.
10. In Ancient Greece, people believed that Poseidon (the sea god) caused earthquakes when angry.

The Richter Scale

Very Minor - Less than 2.0 – The earthquake normally cannot be felt by people on the surface.

Minor - 2.0 to 3.9 – Can sometimes be felt by people on the surface, but they rarely cause damage.

Light/Moderate - 4.0 to 5.9 – Objects may be moved and noises heard. Buildings that have not been built well may be damaged.

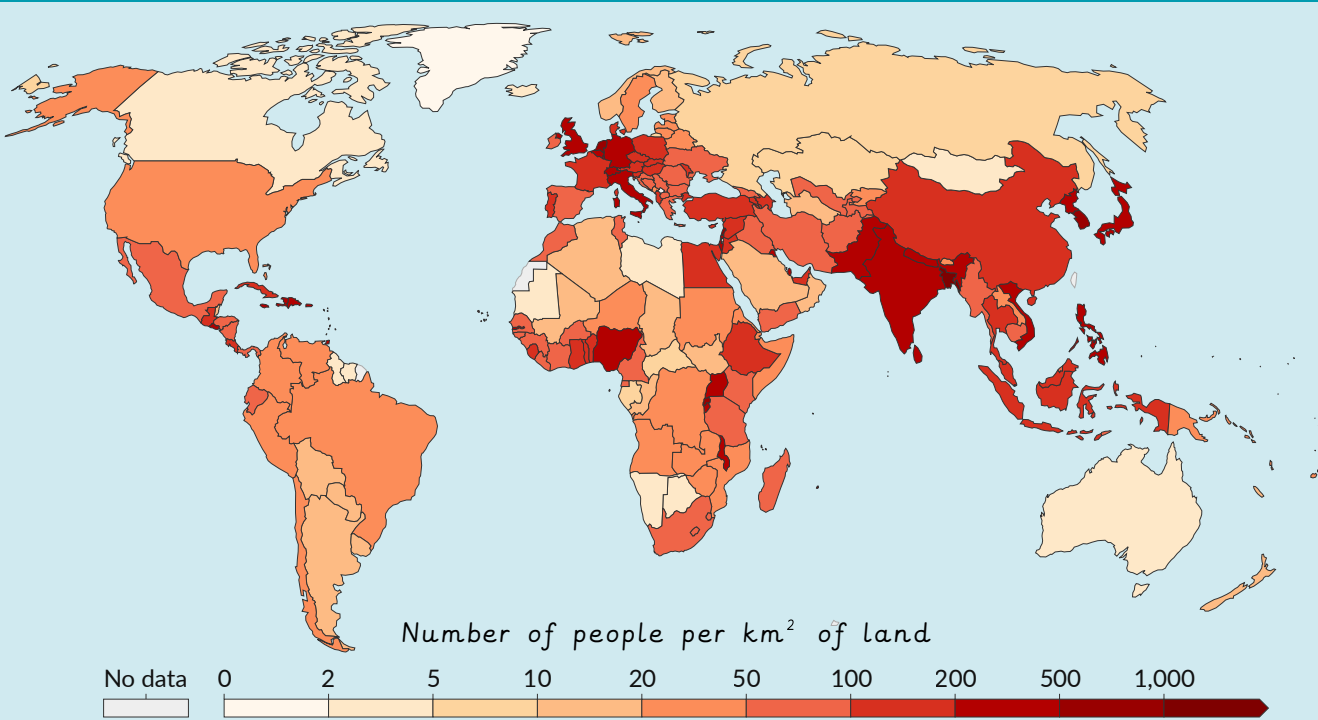
Strong - 6.0 to 6.9 – Increasingly powerful. May cause substantial damage in a more built-up area.

Major - 7.0-7.9 – Can cause major damage over a large area.

Great - 8.0-8.9 – Massive damage caused. Buildings toppled. Visible shockwaves.

Meteoric - 9.0-9.9 – These are extremely rare and have a catastrophic regional impact.

Map showing global population density



Courtesy of the World Bank and subject to the Creative Commons Attribution 4.0 International License (CC BY 4.0)

Courtesy of the Gapfinder and subject to the Creative Commons Attribution 4.0 International License (CC BY 4.0)

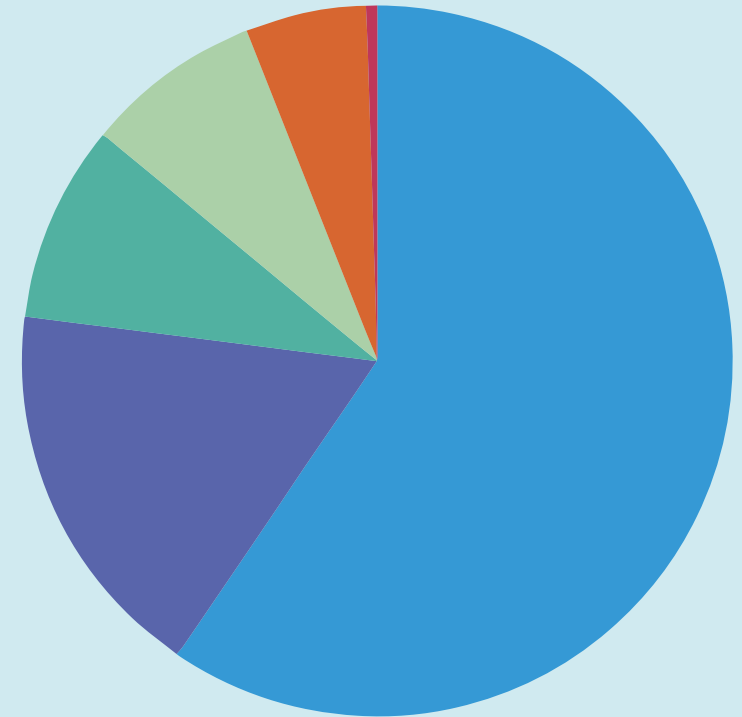
population The number of people living in a particular place.

densely populated An area that contains many people relative to its size.

sparsely populated An area that has few people relative to its size.

Global population distribution

population distribution How people are spread across a specific area.



- South America 5.5%
- Oceania 0.5%
- Asia 59.9%
- Africa 17.5%
- Europe 9%
- North America 8%
- Antarctica 0%

Reasons for population growth

Increase in birth rate.



Decrease in death rate.

Increase in immigration.

Consistent access to food.



A stable job and income.



Clean, spacious housing.

Reasons for population decline

Decrease in birth rate.

Increase in death rate.



Increase in emigration.

Little or no access to clean water.



Little access to hospitals and medicine.

War and conflict.

Natural disasters.



Spread of disease.



birth rate

The average number of babies born per 1000 people every year.



death rate

The average number of people dying per 1000 people every year.



push factors Negative factors that push people away from a place.

pull factors Positive factors that pull people towards a place.

Push factors

- To escape conflict or war.
- To escape natural disasters.
- Poverty (little money).
- Little access to healthcare.
- Few jobs.
- High crime rate.
- Little food, crop failure.
- Harsh climate.
- Little or no access to education.
- Unhappy.

Pull factors

- To find a good job.
- To be closer to family and friends.
- Good access to healthcare.
- Safety (lack of war).
- Low crime rate.
- Access to good education.
- Pleasant climate and landscape.
- To find a better quality of life.
- Respect for different cultures, religions and beliefs.

migration The act of people moving from one place to another.

refugee People forced to leave their country to find safety because of conflict, violence or war.