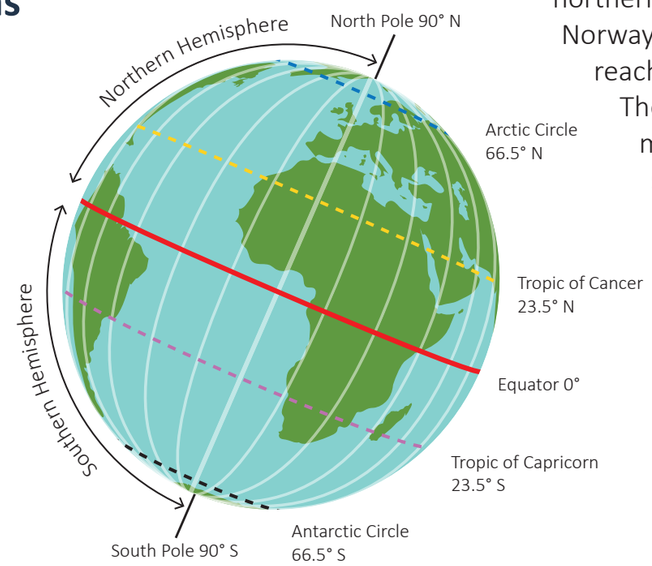
Frozen Kingdoms

The polar regions

The Earth has two polar regions: the Arctic Circle in the Northern Hemisphere and the Antarctic Circle in the Southern Hemisphere. Polar regions have long, cold winters and temperatures mostly below freezing. The weather can be very windy with little precipitation.



Polar landscapes

Much of the polar regions is covered with snow and ice all year round. Polar landscape features include glaciers, ice fields and icebergs.

Glacier

Glaciers are slow-moving masses of flowing ice, formed by the compaction of snow. They can vary in depth from 50m to 1500m.

Ice field

Ice fields are large areas of connected glaciers covering flat areas, such as valleys and high plateaus. They are made from compressed and frozen snow.

Iceberg

Icebergs are chunks of ice that calve, or break off, from glaciers and ice sheets and float in the sea. Wind and water erode icebergs into sculptural shapes.

Arctic region

The Arctic region consists of the Arctic Ocean and the northern parts of Canada, Alaska, Russia, Finland, Sweden, Norway, Greenland and Iceland. Winter temperatures can reach -55°C and summer temperatures can reach 10°C. The Arctic region has a varied landscape including mountains, tundra and boreal forest. It is home to small populations of people and an amazing variety of plants and animals including the polar bear, Arctic fox, Arctic hare and walrus.

polar bear

Natural resources in the Arctic

Natural resources in the Arctic include oil, gas, minerals, metals, fish, wood and freshwater. Arctic inhabitants use the natural resources available for fuel, food and to sell to other countries. However, many of the resources have not yet been touched as they are difficult to extract, especially those that underneath the frozen waters of the Arctic Ocean.

Indigenous peoples of the Arctic

The indigenous peoples of the Arctic have inhabited the area for thousands of years. In the past, they adapted to the cold, harsh conditions by hunting and eating animals native to the area, such as seals, whales and walruses, and using reindeer skins to keep warm. Many lived nomadic lifestyles, following reindeer herds. Today, many indigenous peoples live in permanent settlements and have a modern lifestyle, but some still follow the traditional way of life.

Antarctic region

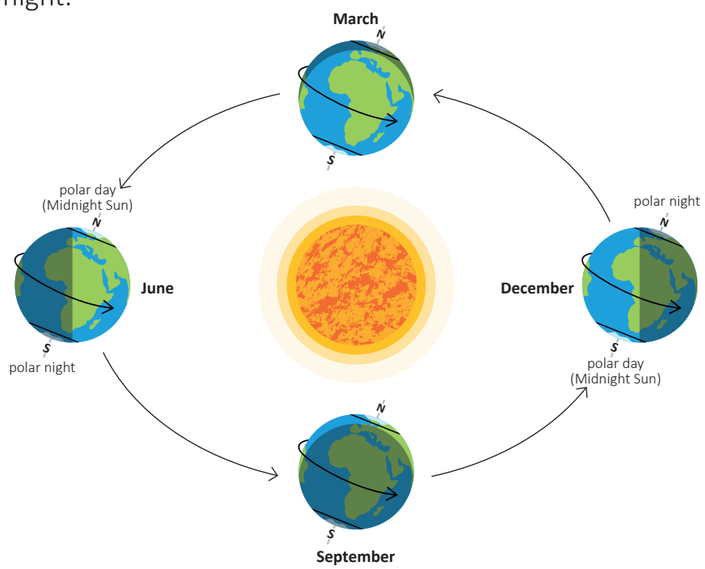
Antarctica is the world's fifth-largest continent and is covered in an ice sheet that is up to 4800m thick. It is the coldest, driest, highest and windiest continent on Earth. Temperatures can drop to -80°C, there is little precipitation, and wind speeds can reach 80km per hour. There are only two native species of flowering plants in Antarctica, but there is a rich sea life, including the emperor penguin, humpback whale and leopard seal. No people live permanently in the Antarctic. However, scientists stay for part of the year to carry out research and tourists visit in the summer months to see the landscape and wildlife.

emperor penguin

humpback whale

Polar day and night

Due to the tilt of the Earth, the poles experience nearly 24 hours of daylight during the summer months. This is called polar day, or Midnight Sun. In the winter, the poles experience nearly 24 hours of darkness. This is called polar night.



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Polar exploration

Due to the harsh and inhospitable conditions, the polar regions were the last places on Earth to be explored. During the golden age of polar exploration, between 1898 and 1916, explorers searched for the Northwest Passage in the Arctic and raced to reach the South Pole in Antarctica. Three famous polar explorers were Robert Falcon Scott, Roald Amundsen and Ernest Shackleton.

Robert Falcon Scott

Robert Falcon Scott (1868–1912) was a British explorer who led two expeditions to the Antarctic. His second expedition turned into a race to the South Pole that Scott's team lost, losing their lives in the attempt.

Image from: Wikimedia Commons/Public domain

Roald Amundsen

Roald Amundsen (1872–1928) was a Norwegian explorer. He was the first to discover the Northwest Passage in the Arctic that joined the Atlantic Ocean to the Pacific Ocean. In 1911, he led a successful expedition to be the first to reach the South Pole, beating Scott's team.

Image from: Wikimedia Commons/Public domain

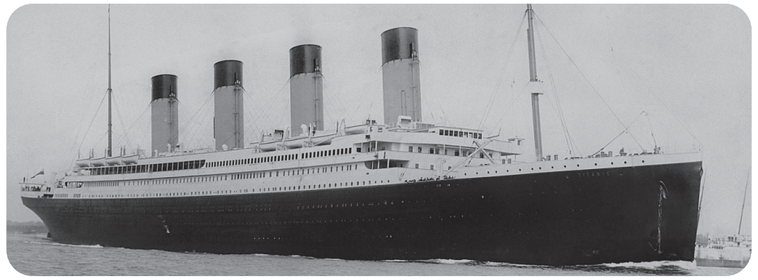
Ernest Shackleton

Ernest Shackleton (1874–1922) was a British explorer who led an expedition to attempt to walk across Antarctica. However, his ship became stuck in sea ice and sank. Shackleton and his men managed to survive for 18 months before making their way to safety.

Image from: Wikimedia Commons/Public domain

Titanic

The RMS *Titanic* sank on 15th April 1912. Four days after leaving Southampton, UK and just 300 miles from its destination of New York, USA, the lookout crew spotted an iceberg in the *Titanic*'s path. The ship collided with the iceberg, damaging its hull. At 2:20am on 15th April, the *Titanic* began to sink. Although the crew sent distress signals, none of the ships who responded were able to reach the *Titanic* before she sank. It is estimated that 1500 people were killed and only 700 survived.



RMS *Titanic*

Climate change

Human activities such as burning fossil fuels and deforestation are releasing gases into the atmosphere that are causing the temperature of the Earth to rise and its climate to change. The Arctic landscape and wildlife are at risk due to this change. Scientists are concerned that the rising global temperature is causing the polar ice to melt. If the polar ice melts, sea levels and temperatures will rise, weather patterns will change and the polar regions will be damaged.

Arctic landscape

Glossary

Antarctic Circle	An imaginary circle of latitude that lies 66.5° south of the equator. Everything south of this line is known as the Antarctic.
Arctic Circle	An imaginary circle of latitude that lies 66.5° north of the equator. Everything north of this line is known as the Arctic.
boreal forest	A large area of wetland covered in conifer trees. Boreal forests are found in countries that are in or near the Arctic Circle.
climate	The usual weather conditions that occur in a place over a long period.
horizon	The line where the sky appears to meet the Earth.
indigenous	Occurring naturally or originating in a particular place.
native	Referring to the animals and plants that occur naturally in a place.
North Pole	The most northern geographical point of the Earth.
polar day	Near constant daylight in the Arctic or Antarctic during the summer months when the Sun does not set below the horizon. Also known as Midnight Sun.
polar night	Near constant darkness in the Arctic or Antarctic during the winter months when the Sun does not rise above the horizon.
precipitation	Water that falls from clouds in the sky as rain, snow, hail or sleet.
South Pole	The most southern geographical point of the Earth.
tundra	An area of land where it is too cold for trees to grow and the ground below the surface is permanently frozen.

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