

Geography Learning Organiser

Key Question: What should happen to Antarctica in 2041?

Key Vocabulary

climate change	A change in global and regional climate patterns because of an increase in atmospheric carbon dioxide from the burning of fossil fuels
Arctic Circle	Line of latitude circling the North Pole
Antarctic Circle	Line of latitude circling Antarctica
peninsula	Piece of land jutting into the water

Where?

Antarctica is the southernmost continent on Earth located in the southern hemisphere, entirely south of the Antarctic Circle and is surrounded by the Southern Ocean.

Climate Change

Antarctica's ice reflects a large amount of solar power away from the Earth. As the ice melts, less of the solar power can be reflected, instead it is absorbed by the Earth. This causes the Earth to warm - Global Warming

Climate and Weather

98% of Antarctica is covered by ice. It averages 1 mile thick.

Antarctica is a desert biome - it experiences such little rain - less than 200ml per year

It experiences cool summers and long cold winters
Long dark nights (winter)

South pole AVERAGE temperature: -10°C on the coast to -60°C on the highlands inland

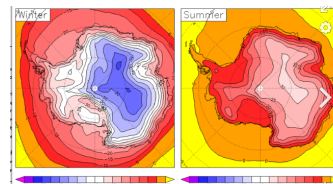
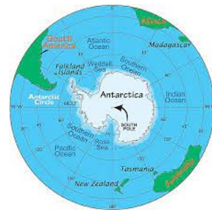
Antarctica is the windiest place on Earth.

Temperatures have been recorded as low as -89.2 degrees C (-128 degrees F).

It is the driest and oldest continent on earth.

Antarctica is colder than the Arctic because of its elevation, the Arctic is based on water from the ocean rather than land, which is colder, and because the Earth is the farthest from the sun in Antarctic winter.

It is in the climate zone 'Ice-Cap Climate'



Learning Objectives

- Identify the position and significance of latitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Greenwich/prime Meridian and Time Zones (including day and night)
- To describe aspects of climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes and the water cycle.
- To describe and understand key aspects of the distribution of natural resources including energy, food, minerals and water
- Use maps, atlases, globes and digital/computer mapping to locate countries and describe the features studied.
- Use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of OS maps) to build their knowledge of the UK and the wider world.

Prior Knowledge:

Animals and plants living around the world are unique because of the climate, land type, soil, rainfall and vegetation.

Some parts of the world share these characteristics.

The characteristics are given names eg forest.

All over the world, there are areas with shared characteristics.

An Environmental Region is an area that has a particular type of natural environment and physical features.

Water travels through five different stages as part of the Water Cycle. The water goes round and round. No extra water is ever made.

Water is a raw material

Climate zones describe the temperature and rainfall of an area

Contour lines show us the height of the land on a map

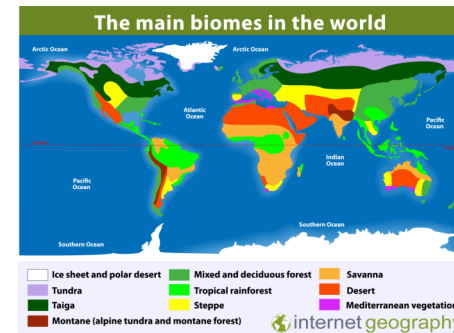
There are different types of mountains and they are formed in different ways

The world is made of seven plates which we call continents

SEND Core Knowledge

Nobody 'owns' Antarctica. People from around the world understand that Antarctica is important, and work together to find out more.

In 2041, these children will be in their twenties; they will be the generation that decides on these worldwide outcomes.



What lives in Antarctica? - Flora

Most of Antarctica's plants are found on the Antarctic peninsula (NW) and only grow for a few weeks in the summer. These include: mosses, lichens and 2 flowering plants (hairgrass and pearlwort). There are no trees. The most important organisms are the plankton which grow in the ocean.



What are the physical features?

Antarctica is quite mountainous - 2300m average height

Antarctica is divided into three main parts: East Antarctica (the biggest part) West Antarctica and in between them the mountain range called the Transantarctic Mountains

It holds 80% of the world's fresh water.

Antarctica is the fifth largest continent based on its size, It covers a huge area, about 14 million square kilometres.

Antarctica has no countries.

Only 1% of the land is NOT covered with ice

Under the ice is mostly land, although ice shelves are over the ocean.

Lake Vostok is 250km long and 50km wide but has been hidden by ice for 15 million years

The Gamburtsev mountain chain is buried under the ice.

It is surrounded by the Southern Ocean

Rivers exist - the longest being the River Onyx.



What lives in Antarctica? - Fauna

Elephant seal, Antarctic Fur Seal, Blue whale, Fin whale, Humpback whale and Sperm whale are found in the oceans and coast surrounding Antarctica. Antarctica is most famous for its penguins: the Chinstrap penguin, Adelie penguin, Emperor penguin, Gentoo penguin and Macaroni penguin.

Antarctica has low biodiversity (not many different species live there).

Life mainly exists in milder coastal areas and the Antarctica Peninsula.

Plant and animals have had to adapt to survive. Very few living things live in Antarctica all year.

Many creatures migrate during the summer.

One important source of food is the krill, for larger animals

Style of Map

- aerial photos
- terrain-level view on Google Maps – compare and contrast
- globe
- map of the world
- Ordnance Survey Map – standard symbols – describe features
- world map showing biomes
- sketch maps with symbols and a key
- maps with letter/number co-ordinates
- Junior Atlas with atlas symbols
- world map showing lines of latitude
- Maps with 8 compass points

Possible Adaptations for SEND & EAL

What is the weather like at Holly Park? Go outside every day and record what the weather is like.

Sort animal cards into those that live in hot countries and those that live in cold countries.

[https:// www.bbc.co.uk/ iplayer/episode/ b06qmb1r/ gojetters-series-1-9- lambertfisherlambertglacier-antarctica](https://www.bbc.co.uk/iplayer/episode/b06qmb1r/gojetters-series-1-9-lambertfisherlambertglacier-antarctica) Watch this episode of Go Jetters from BBC 1- Player all about Antarctica

If you were on Ernest Shackleton's ship, what would you pack to take with you? Remember... it's cold!

Look at art work that uses cold colours. Paint with cold colours



Fun Facts!

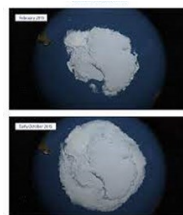
The Aurora Australis are the Southern Lights

Diamond Dust is a ground level cloud made of ice crystals

Antarctica comes from the Greek word meaning 'opposite to the North'

Enquiry Skills - Disciplinary Knowledge

- Suggest questions for investigating
- Use primary and secondary sources of evidence in their investigations.
- Investigate places with more emphasis on the larger scale; contrasting and distant places
- Analyse evidence and draw conclusions e.g. from field work data on land use comparing land use/temperature, look at patterns and explain reasons behind it



What are the human features?

No one lives there but about 500 scientists stay there to conduct research.

There are no major cities just scientific outposts.

It has the smallest population of all the continents.

Map Skills

- Use 8 compass points confidently and accurately;
- Use 4 figure co-ordinates confidently to locate features on a map.
- Begin to use 6 figure grid refs; use latitude and longitude on atlas maps
- Draw a variety of thematic maps based on their own data.
- Begin to draw plans of increasing complexity
- Use/recognise OS map symbols;
- Use atlas symbols
- Describe features shown on OS map.
- Locate places on a world map.
- Use atlases confidently to find out about other features of places. (e.g. mountain regions, weather patterns)
- Draw a plan view map accurately
- Confidently identify significant places and environments
- Recognise world map as a flattened globe