



Mendell Primary School

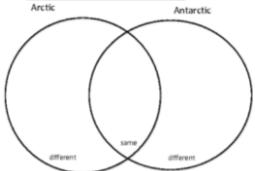
Aspire Challenge Achieve

Medium Term Plan Geography – Autumn term



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| Year Group: 6 | Term: Autumn 2021 | Teacher: Sarah Wearing/Dionne Sanati | Subject lead: Amy Harris | Overview: Frozen Kingdoms: To learn characteristics and features of polar regions, including the North and South poles and a detailed exploration of the environmental factors that shape and influence them. To understand the landscapes and climates of polar regions and how indigenous people live in these regions. | Key end points: Identify and describe how the physical features affect the human activity within a location. Describe and understand key aspects of: physical geography, including climate zones, biomes and vegetation belts. human geography, including settlements, land use, economic activity including trade links | |
| Links to other learning: Maths – Venn diagrams/analysing data/temperature Science – polar animals/plants Global links - pollution | High Quality Text: DK Eyewitness Arctic and Antarctic <i>Barbara Taylor</i> | Prior learning/future learning: Year 1: World maps Year 2: weather and seasonal patterns Year 5: Non-European countries | National curriculum links: Describe and understand key aspects of: physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle ♣ human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water. identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian and time zones (including day and night) | Common misconceptions: Confusions with wildlife e.g., polar bears and penguins can be found in both polar locations. Thinking that Global warming will give UK residents a warmer climate, or that it will only affect animals that live on ice, and not the rest of the world. Both the Arctic and Antarctica always sustain freezing temperatures or that winter is the only season. Humans live in both the Arctic and Antarctic. | | |
| Learning Intention | Real life links | Lesson Outline (Key questions in colour) | | Resources | Vocabulary | Lowest 20% Adaptations |
| 1 I can locate the Arctic and Antarctic circle and identify the significance of polar day and polar night | Climate change/global warming Map skills | <p>Prior learning: Using the Earth diagram (see resources), to recap on the locations of Northern/Southern hemispheres and key lines of longitude and latitude. Explain to the pupils that the skills we are going to learn today are to use globes and maps to help us locate key locations and help us think like a geographer.</p> <p>Hook for learning: Engage pupils in topic by showing clips from David Attenborough's Frozen planet to introduce the polar regions or take part in a 'live' lesson about the polar regions with footage from scientific explorers: AXA Arctic Live 2020 Encounter Edu BBC One - Frozen Planet</p> <p>Use Google Earth: Google Earth/Google maps to locate the Arctic and Antarctic circle. How would you describe the landscape of these polar regions? (The Arctic landscape ranges from cold and dry deserts to brush and lush tundra plants on permanently frozen soil to icecaps like Greenland's. Many Arctic coastal areas offer extremely rich habitats bustling with seabirds, fish, marine mammals, and invertebrates.) Pupils to locate both areas on a world map and evidence in books. Recap on the Earth's rotation to explain day and night with the children (memory flashpoint link) and present the polar day and night diagram (see resources) to examine the North and South poles. What is the diagram showing? Use a rotating globe and a torch as the sun to bring the diagram to life. Focusing on the Arctic Circle, ask the children to observe what happens to the daylight during a day in the Arctic summer and</p> | | Globes Torches True or false sorting cards i-pads world maps | Latitude Longitude Equator Northern Hemisphere, Southern Hemisphere, Tropics of Cancer and Capricorn Arctic and Antarctic Circle, Arctic region Prime/Greenwich Meridian time zones Polar day Polar night Archipelago Continent Desert zone Landscape Tropical zone | Pre-teach with pupils using Google Earth to examine a range of locations to build up confidence with locating places. Share images of polar regions (working wall) for pupils to familiarise landscape. |

| | | | <p>winter, then demonstrate what happens to the Antarctic Circle using the same technique. Encourage them to explain that at some times of the year, the poles are in near-constant daylight, known as polar day, or Midnight Sun. At other times of the year, the poles are in near-constant darkness, known as polar night. Allow the children time to explore and demonstrate the concept of polar day and night using tabletop globes and torches. Add photos to books. Provide the children with polar day and night sorting cards in groups and ask them to sort into two groups: true or false. Photograph for books.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 2 | I can compare the climactic similarities and differences between two regions | Maths skills – analyse climate data temperature | <p>Hook for learning: Visit the Co-op store in Bromborough to enable the pupils to experience the walk-in freezer to understand the concept of the temperature difference – risk assessment needed for this. (Parent contact working there Kelly -Gabriel Lloyd's mum)</p> <p>Explain to the pupils that the skills we are going to learn today are to use secondary sources of information to help us think like a geographer and compare climates between regions. Recap prior learning on polar day/night and clarify any misconceptions about the polar regions so far. Use climate zones map (see resources) to observe climate zones and focus in on the polar zones. Optional clip to show: Climate zones - KS2 Geography - BBC Bitesize</p> <p>What do you notice about the location of the different climate zones?</p> <p>Word of the week: permafrost – pupils to record meaning of this in their books/explore morphology</p> <p>Share the average mean temperatures for both of the poles. What can you infer from this data? (The Arctic has warmer summers than Antarctica, Antarctica has colder winters than the Arctic hence why it is not inhabited.) Pupils to record findings in books following class discussion.</p> <table border="1" data-bbox="533 799 936 975"> <thead> <tr> <th rowspan="2">Time of year</th> <th colspan="2">Average (mean) temperature</th> </tr> <tr> <th>North Pole</th> <th>South Pole</th> </tr> </thead> <tbody> <tr> <td>Summer</td> <td>32° F (0° C)</td> <td>-18° F (-28.2° C)</td> </tr> <tr> <td>Winter</td> <td>-40° F (-40° C)</td> <td>-76° F (-60° C)</td> </tr> </tbody> </table> <p>Create a table in books and use knowledge organisers/i-pads to compare the key differences between Artic/Antarctica with a focus on climate:</p> <ul style="list-style-type: none"> • hemisphere location • topography • temperature range in winter months/summer months • average precipitation • typical weather patterns <table border="1" data-bbox="533 1177 1160 1406"> <thead> <tr> <th></th> <th>Arctic</th> <th>Antarctic</th> </tr> </thead> <tbody> <tr> <td>Hemisphere</td> <td></td> <td></td> </tr> <tr> <td>Topography</td> <td></td> <td></td> </tr> <tr> <td>Winter months</td> <td></td> <td></td> </tr> <tr> <td>Summer months</td> <td></td> <td></td> </tr> </tbody> </table> <p>Useful websites for support:</p> | Time of year | Average (mean) temperature | | North Pole | South Pole | Summer | 32° F (0° C) | -18° F (-28.2° C) | Winter | -40° F (-40° C) | -76° F (-60° C) | | Arctic | Antarctic | Hemisphere | | | Topography | | | Winter months | | | Summer months | | | <p>Knowledge organisers i-pads venn diagrams word of the week vocabulary slips</p> | <p>Polar climate Precipitation Temperature Average mean temperature North Pole South Pole Thermal insulator Climate zones Polar zones Permafrost Northern Hemisphere Southern Hemisphere Topography Weather patterns Desert</p> | <p>Additional adult or peer to support with comparing locations and finding differences/similarities</p> |
| Time of year | Average (mean) temperature | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | North Pole | South Pole | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | Arctic | Antarctic | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hemisphere | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Topography | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Winter months | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Summer months | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | | | <p>Antarctica and the Arctic compared, Differences and Similarities between the north and south poles (coolantarctica.com) Which pole is colder? NASA Climate Kids</p> <p>Pupils to answer the following questions in books: Which climate is colder and why? (The main reason Antarctica is colder than the Arctic is that Antarctica is a landmass surrounded by ocean, and the Arctic is an ocean surrounded by landmasses) Why are parts of the Arctic and Antarctica classed as deserts? (They are considered deserts because their annual precipitation can be less than 51 mm in the interior. They are covered by a permanent ice sheet that contains 90% of the Earth's fresh water. Why do you think people live permanently in the Arctic but not the Antarctic? (Due to its remoteness, inhospitable weather conditions and lack of natural land bridges connecting it to other continents, Antarctica has spent the last 35 million years in relative silence and seclusion.) Challenge – complete Venn diagram to compare similarities and differences of Arctic and Antarctica using cards (see resources)</p>  | | | |
| 3 | I can compare and describe physical features of polar landscapes and oceans. | Climate change Online research | <p>Explain to the pupils that the skills we are going to learn today are to use secondary sources of information to help us think like a geographer and compare and describe physical features of polar landscapes. Enquiry question: How are polar landscapes and oceans different to other environmental regions on Earth? Provide pupils with deeper thinking questioning matrix so they can record questions and <i>think like a geographer</i>. Video link: Life in the Polar regions BBC Teach - YouTube Provide pupils with polar oceans information sheets and polar landscape information cards (see resources) and i-pads. Pupils to choose either the Arctic or Antarctic landscape/polar ocean to study. Pupils to find out information about their chosen region making notes to record their findings. Pupils to write a script for a podcast to share their findings, writing a short script to support them. Record using appropriate app such as Garage band or audacity. Add images to podcast. Record in books using QR code (QR Code Generator Create Your Free QR Codes (qr-code-generator.com)) Focus information to research:</p> <p>What is the size of the Arctic/Antarctic region? Arctic Southern Ocean? (Antarctic sea ice extends to about 7.2 million square miles in winter, versus 6 million square miles in the Arctic; the Antarctic summer minimum is about 1.1 million square miles versus 2.5 million square miles for the Arctic) greatest depth? (The Southern Ocean's greatest depth is 7,236 m (23,740 ft) The Arctic oceans greatest depth is 18,050 feet (5,502 metres) What is the range of surface water temperature? (The temperature of the surface water of the Arctic Ocean is fairly constant at approximately -1.8 °C (28.8 °F) The temperature in the Southern Ocean is anywhere from -2 to 10°C or 28 to 50°F. How would you describe the presence of sea ice/icebergs/glaciers in your chosen region? (see cpd notes in resources folder)</p> | i-pads question matrices polar landscape information cards polar oceans information sheets | Animal kingdom Adaptation Polar landscape Arctic Ocean Southern Ocean Icebergs Glaciers Boreal forest | Pre-teach and share images of polar landscape features (working wall) for pupils to familiarise themselves with. |

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| | | | <p>What animals and plants are typically found in your polar region? (see cpd notes in resources folder)</p> <p>What other physical features are found in the natural environment? (e.g. tundra/mountains/boreal forests) (see cpd notes in resources folder)</p> <p>What is the impact of humans and pollution in your polar region? (see cpd notes in resources folder)</p> <p>Useful websites</p> <p>Antarctica and the Arctic compared, Differences and Similarities between the north and south poles (coolantarctica.com)</p> <p>Oceans Of The World Seas Of The World DK Find Out</p> <p>The Arctic and The Antarctic Smithsonian Ocean (si.edu)</p> <p>Challenge – Feedback as a class and then record: what similarities and differences are there between landscape/polar oceans between the two regions?</p> <p>Exit pass: <i>Would you rather visit the Arctic or Antarctic at this point? Why?</i></p> | | | |
| 4 | I can describe the distribution of natural resources in the Arctic | Natural resources Current global debate on overfishing | <p>Explain to the pupils that the skills we are going to learn today are to use secondary sources of information to help us think like a geographer and use key geographical vocabulary to help us debate a key global issue.</p> <p>Recap prior learning on similarities/differences between the Arctic and Antarctic.</p> <p>Starter: Provide groups of children with practical examples of natural resources commonly used in the Arctic including wood, fish, oil, natural gas, metals. Can children guess which polar region we will be focussing on over the next couple of lessons? Explain that we will be focussing today on natural resources used in the Arctic (NB/If not discussed already, question why have people not inhabited Antarctica? Discuss how scientists are stationed there in research labs for the duration of their research. In groups children to mind map on large sheets (i) Where the natural resource would be found and (ii) as many purposes as they can for its use <i>e.g., wood would be found in forests and plantations and could be used for furniture, fencing, building, boats, instruments etc.</i></p> <p>Provide children with the natural resource knowledge organiser (see resources) Pupils to draw natural resources in books and record where found and multi-purpose.</p> <p>Task 2: Watch the video clips: Protect the Arctic Deep from Harmful Bottom Trawling - YouTube</p> <p>Will the ocean ever run out of fish? - Ayana Elizabeth Johnson and Jennifer Jacquet - YouTube and read the section about fish as a natural resource in the Arctic on information sheet (see resources). Explain how in the future, the fishing industry could expand in the Arctic because sea ice is melting due to climate change. However, overfishing could have a devastating effect on the ecosystem of the ocean. Many countries around the world have agreed to ban commercial fishing in the central Arctic Ocean for 16 years, to ensure the ocean remains unharmed. Debate this issue as a class.</p> <p><i>Link this to UK news e.g. European Parliament votes to change fishing rules - CBBC Newsround NB/There may be updated UK news on this linked to Brexit nearer the time of delivery.</i></p> <p>Pupils to write a for and against argument for fishing in the newly accessible water of the Arctic Ocean.</p> <p>Challenge – Why is mining of gas and oil so difficult in the Arctic? Why might countries like Russia try to mine untapped oil and gas reserves in the future?</p> | A3 sheets of paper Wood Types of fish Oil Natural gas Examples of metals Knowledge organisers | <p>Natural resources</p> <p>Overfishing</p> <p>Settlement</p> <p>Furniture</p> <p>Cooking</p> <p>Heating</p> <p>Forest</p> <p>Plantation</p> <p>Pallets</p> <p>Railway sleepers</p> <p>Reserves</p> <p>Gold</p> <p>Nickel</p> <p>Platinum</p> <p>Copper</p> <p>Zinc</p> <p>Untapped</p> <p>Inaccessible</p> <p>Mining</p> <p>Boreal forest</p> <p>Extensive</p> <p>Glaciers</p> <p>Icebergs</p> <p>Hydroelectric inhabitants</p> | Share visual images of natural resources in action to support pupils in understanding distribution of these. |
| 5 | I can identify types of settlement and | Online research | <p>Explain to the pupils that the skills we are going to learn today are to use secondary sources of information to help us think like a geographer and investigate how humans' function in the Arctic.</p> | Photographs of different indigenous groups of people living in the Arctic i-pads | Inuit Nomad Nomadic | Pupils to work with an additional adult or peer to support with |

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| | <p>explain how humans' function in the Arctic</p> | <p>Traditional ways of cultural life in the Arctic</p> | <p>Enquiry question: How have humans used and responded to the areas habited in the Arctic?</p> <p>Word of the week: Indigenous - pupils to record meaning of this in their books/explore morphology</p> <p>Provide pupils with photographs of different groups of people that have inhabited areas of the Arctic including: chukchi, yup'ik, Eve'nk, Dolgan, Inuit, Sami and Nenets. Pupils to examine photographs in pairs or small groups.</p> <p>What can you infer about how these groups have adapted to living in the Arctic? (Northern people found many different ways to adapt to the harsh Arctic climate, developing warm dwellings and clothing to protect them from frigid weather. They also learned how to predict the weather and navigate in boats and on sea ice.)</p> <p>Why are there less roads in the Arctic compared to the UK? (Due to impact of climate/terrain etc.)</p> <p>Feedback as a class to discuss inferences and similarities/differences.</p> <p>Video link: How Arctic People Live in the cold - YouTube</p> <p>Provide pupils with information sheet on the different groups of indigenous people so they can read and find out more information about them. (see resources)</p> <p>Pupils to choose one of the indigenous groups to study in more depth and draw or record photograph of them in the centre of their page. Pupils to find out and record information based on the following using i-pads to help them:</p> <ul style="list-style-type: none"> • Name of indigenous group • Location • Language spoken • Traditional Education • Homes • Clothing • Food • Art and culture • other traditional ways of life <p>Compare and contrast cultural differences such as houses, clothing, lifestyle etc with the UK. How do these differences manifest themselves?</p> <p>Pupils create a power point on their chosen group and present to class to inform them about traditional ways of life. Record in books.</p> <p>Challenge – what are the biggest challenges faced by people living in the Arctic?</p> | <p>word of the week vocabulary slips information sheets laptops (optional)</p> | <p>Indigenous Semi-Nomadic Settlement Adapted Adaptation Reindeer skins Tradition Siberia Chukchi yup'ik Eve'nk Dolgan Sami Nenets Peninsula Herders Lightweight structures Harpooning Aquatic animals Migrate Government Customs Breed Mongolia</p> | <p>researching information on indigenous groups.</p> |
| 6 | <p>I can identify how tourism has changed a place or landscape over time</p> | <p>Impact of covid-19 on tourism</p> | <p>Explain to the pupils that the skills we are going to learn today are to use secondary sources of information to help us think like a geographer and compare and investigate how tourism has changed a place over time.</p> <p>Use word of the week to introduce the focus for learning this session.</p> <p>Word of the week: tourism – pupils to record meaning of this in their books/explore morphology</p> <p>Starter: Challenge children in pairs or groups to list all the necessary facilities that tourists require e.g., food/transport links. In their groups on post its, can you record both positive and negative effects of tourism on an area? (positive - Tourism can provide jobs and improve the wealth of an area, New facilities for the tourists also benefit locals, eg new roads etc. Negative - Overcrowding and traffic jams, Damage to the natural environment, eg footpath erosion (the wearing away of footpaths), litter, habitats destroyed to build hotels etc.) Explain to children that today we are going to focus on tourism in Antarctica.</p> <p>Provide pupils in pairs with a case study information pack on tourism in Antarctica (see resources) Ask the children to read it in small groups, analysing the data and drawing conclusions about the impact of tourism on Antarctica.</p> | <p>Post its Word of the week vocabulary slips Case study tourist information packs Antarctica ranking cards</p> | <p>Tourism Tourist Trend Facilities Guidelines Limitations Transport Income Government Overcrowding Regulations Antarctic peninsula Inland Invasive Native species Glaciers Ice fields</p> | <p>Pre-teach with pupils providing case study booklet ahead of time for pupils to analyse.</p> <p>Share tourism sites with pupils to familiarise them with the facilities required for a tourist.</p> |

Pupils to answer the following questions in their books: (see resources folder for answers)

What can visitors see and experience on a visit to Antarctica?

What are the potential problems with allowing tourists to visit Antarctica?

What trend can be seen in the data of the number of tourists between 2002–2003 and 2007–2008?

What will happen to the number of visitors to Antarctica if the trend seen from 2014–2015 to 2016–2017 continues?

What advice is given to tourists to ensure they don't damage Antarctica?

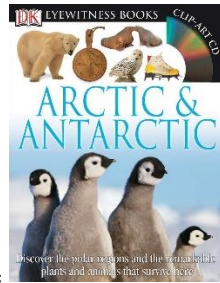
What would the consequences be if the guidelines weren't adhered to?

In which ways has tourism positively affected Antarctica?

In which ways has tourism negatively affected Antarctica?

In what ways do you think tourism in Antarctica should change in the future? Back up your answers with evidence you have gathered.

Challenge – what do you think has had the biggest impact on the environment of Antarctica? Use the ranking cards and grid to support your debate on this (see resources)



Possible book link:

Antarctic treaty
Vessels
 Ecological
 Protection
 restrictions