

YEAR 1 UNIT 3: Polar Adventures (Animals, including humans and everyday materials)

Enquiry Question: How do polar animals adapt to their environment?

Related units: Reception unit 4: My world: how environments differ from each other making observations of animals and plants.

Year 2 unit 2: What are materials suitable for different jobs; unit 3: What are similarities and differences between animals; unit 4: How can the shape of materials change

Unit overview

National Curriculum link Year 1: 'Animals including humans' and 'Everyday Materials'

Children will identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals that live in polar regions. They will identify and name a variety of common animals that are carnivores, herbivores and omnivores. They will describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). They will identify how these animals survive in colder climates. The children will describe the simple physical properties of a variety of everyday materials and will investigate which materials would be best suited to keeping something warm or dry. They will compare and group together a variety of everyday materials on the basis of their simple physical properties.

Scientific vocabulary

- Arctic
- Antarctic
- Carnivore
- Herbivore
- Omnivore
- Flexible
- Waterproof
- Habitat
- Explorers
- Polar
- Compare

Activities and working scientifically learning outcomes

- To ask questions and recognise that they can be answered in different ways observing closely, e.g. ice activities.
- To perform simple tests.
- To identify and classify different materials and animals.
- To use their observations and ideas to suggest answers to questions, e.g. ice activities.
- Use their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells.

Assessment

1. Name an animal that is a) a bird; b) a fish and c) a mammal
2. Name a common animal that is a) a carnivore; b) a herbivore and c) an omnivore
3. Describe the properties of something that is a) transparent, b) translucent, c) opaque, d) waterproof, and e) flexible.
4. Name a material that is a) transparent, b) translucent, c) opaque, d) waterproof and e) flexible

Cross-curricular links

- English: use scientific language when talking and writing.
- Maths: sorting and comparing, understanding temperatures.
- History: Famous polar explorers Robert Falcon Scott, Roald Amundsen, Sir Ernest Shackleton, Sir Ranulph Fiennes, Sir Edmund Hillary.

Teacher knowledge

Keeping Warm: A good insulator is air and many of the materials used in clothing, particularly coats, trap air in the material. Polar explorers need clothing that will keep the body warm, especially their fingers and toes, is light and comfortable and allows the wearer to move around easily. Whilst insulation is a complex topic that children will work on in depth later in the primary years, this topic helps to develop some basic language and use early ideas about keeping them warm.

Animals: Some animals live in the Arctic but not the Antarctic. There are fewer land animals in the Antarctic than the Arctic, however, the Antarctic is rich with sea life. Humans cannot live in these areas without wearing special clothes, building special accommodation and taking food with them, because it is so cold. All the animals that live in the polar regions have special features to help them survive.

Herbivore, carnivore or omnivore?: Most children enjoy learning special scientific words. These words describe what an animal eats. Humans are omnivores and eat both meat and plants; vegetarians choose not to eat meat. Polar bears are carnivores, they eat meat, whilst an Arctic hare is a herbivore and eats plants. Children need to be able to sort animals into these classifications.

Camouflage: Animals use camouflage to hide themselves from predators so they aren't eaten and to hide from their prey, so that cannot be seen by the animals they want to eat. Animals can camouflage themselves using colour, shape of their body, or behaviour. For example, a polar bear is white and therefore camouflaged against the snow.

Exploring Ice: Ice is frozen water. Because water takes the shape of its container, it can be made in different shapes and sizes. What child

Misconceptions:

- Children may think that polar bears are white. In fact, Polar bears have white fur so that they can camouflage into their environment. Their coat is so well camouflaged in Arctic environments that it can sometimes pass as a snow drift. Interestingly, the polar bear's coat has no white pigment; in fact, a polar bear's skin is black and its hairs are hollow.
- Penguins only live in the southern part of the equator, in the Antarctic. In fact, they live on the fringes of Antarctic but not the south pole itself.
- Children may not know the difference between the Arctic and Antarctic and assume they are the same or that it is where Father Christmas lives. In fact, the Arctic is a sea of ice surrounded by land and located at the highest latitudes of the northern hemisphere. ... Antarctica, by contrast, is an entire continent to itself located in the southern hemisphere and 98 percent covered by an ice cap.
- Children find difficult is the idea that ice and water are made of the same materials, but in a different form. Ice can be transparent, translucent or opaque.

Resources

The British Antarctic Survey www.bas.ac.uk

<https://www.natgeokids.com/uk/discover/geography/general-geography/ten-facts-about-the-arctic/>

<https://kids.kiddle.co/Arctic>

Useful websites www.show.me.uk/site/news/teachers/tNatural-World/STO628.html

<https://www.bas.ac.uk/polar-operations/life-in-the-polar-regions/clothing/>

