

# Science in the Making: observing animals

This resource was developed by teachers within the Royal Society Schools Network



Adelie Penguins, 02 January 1903. From The Royal Society, NAE/3/239

## Curriculum key words

Different	Difference
Group	Observe
Observation	Similar
Similarity	

## Curriculum links

### Working Scientifically:

- Observing closely, using simple equipment.

### Animals, including humans (Year1):

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).

## Equipment needed

- printed copies of photographs & hand lenses.
- or
- computers or tablets for looking at the Royal Society's Science in the Making website.

## KS1

### Introduction

This lesson about animal classification uses primary sources from Robert Falcon Scott's 1902 Antarctic expedition. Students will first make observations of the animals in a selection of original photographs then use what they have observed to play a game.

### Learning objective:

To describe and compare the structure of a variety of animals found in polar habitats.

### Success criteria (SC):

- SC1: I can carefully describe what some animals look like.
- SC2: I can compare two animals and talk about what is the same and what is different about their bodies.
- SC3: I can use my knowledge to guess an animal when my partner describes it.

### Starter activity: setting the context

(Approximately 5 – 10 minutes)

Begin by asking students, 'What does a penguin look like?'

After they have explained what they know, ask how they know what a penguin looks like. Then ask them to consider how people might have known what a penguin looks like 100 years ago, before television and the internet. Explain that, for scientists living in the UK, there were not many opportunities to make close observations of animals that lived in distant climates such as deserts or Polar habitats, and many of them had to rely on primary sources of information provided by other scientists and explorers.

Show students a photograph of Robert Falcon Scott's 1902 Antarctic expedition showing the crew carrying out their work ([Ditto - just starting](https://makinsscience.royalsociety.org/s/rs/items/NAE_1_98) [https://makinsscience.royalsociety.org/s/rs/items/NAE\\_1\\_98](https://makinsscience.royalsociety.org/s/rs/items/NAE_1_98)). Explain when and where the photograph was taken and briefly discuss with the students what conditions would have been like, including what modern technology they would not

have been able to take advantage of (for example mobile phones, digital cameras, torches, laptop computers etc.).

Explain that today we are going to take some observations and do some classification of Antarctic animals using this crew's photographs, in a similar way to scientists who were unable to carry out first-hand research 100 years ago.

### **Activity A: making observations**

**(Approximately 10 – 15 minutes) [SC1 and 2]**

Give out a selection of photographs of animals taken on the expedition and ask them to make close observations of the animals. This can either be done with printed copies and hand lenses, or by using the *Science in the Making* website, which allows students to zoom in on the images. Ask them to look carefully at the different features of the animals, in particular the difference between the different kinds of penguin and seal, and consider questions such as:

- How does it move?
- Does it have feet? If so, what shape are these?
- How does it escape/hide from predators?
- What might it eat?
- What sort of skin covering does it have?
- Does it live on land or water?

Encourage students to take note of smaller details such as the differences between the feet in the two kinds of penguin or the size, shape and colour of the animals' eyes.

Links to a variety of suitable images for this activity and the images themselves can be found in the resource appendix.

### **Activity B: guess the animal**

**(Approximately 10 – 20 minutes) [SC3]**

Once the students have had the opportunity to make observations of the animals, play a game of 'Guess the Animal', which is similar to the game Twenty Questions; one player chooses an animal, and the others must ask yes or no questions to work out which animal they are thinking of.

After playing a few rounds of the game with the animals looked at in today's lesson, extend it by allowing players to choose from the full range of animals looked at in other science lessons so far.

## Plenary

(Approximately 5 – 10 minutes) [SC1, 2 and 3]

It is worth spending a few minutes at the end of the lesson to review the learning. Ask the students:

- Which animals are similar to each other and what the similarities are?
- Which animals have unusual or interesting features?
- Which was their favorite animal and what was it about that animal that they particularly liked?
- Which animal do they think likes living in Polar regions the best? Can they explain why they think that?

## Assessment

Students will have partially met the learning objective, 'Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)' if they:

- Can describe the observable features of animals in different groups (i.e. mammals, fish, birds etc.)
- Can compare the structure two animals from different groups

Please note, to have fully met the requirements for this National Curriculum statement students will have also needed to observe and compare animals from different environments, including pets.

## Resource: suggested Images

Below are images and links for the same that would be appropriate for this lesson. Students could either be directed to these images, or allowed to browse the whole collection for those that they consider relevant. They are all from

[https://makingscience.royalsociety.org/s/rs/themes/Scott\\_Antarctica](https://makingscience.royalsociety.org/s/rs/themes/Scott_Antarctica)

Weddell Seal [https://makingscience.royalsociety.org/s/rs/items/NAE\\_6\\_723](https://makingscience.royalsociety.org/s/rs/items/NAE_6_723)

Weddell Seal, October 1902. From The Royal Society, NAE/6/723



Weddell Seal (Cow) and ridges, Seal Bay [https://makingscience.royalsociety.org/s/rs/items/NAE\\_3\\_251](https://makingscience.royalsociety.org/s/rs/items/NAE_3_251)

Weddell Seal (Cow) and ridges, Seal Bay, 27 January 1904. From The Royal Society, NAE/3/251



Weddell moving along quickly [https://making-science.royalsociety.org/s/rs/items/NAE\\_3\\_258](https://making-science.royalsociety.org/s/rs/items/NAE_3_258)

Weddell moving along quickly, January 1904. From The Royal Society, NAE/3/258



Skua's feeding [https://making-science.royalsociety.org/s/rs/items/NAE\\_6\\_845](https://making-science.royalsociety.org/s/rs/items/NAE_6_845)

Skua's feeding (2), 05 December 1902. From The Royal Society, NAE/6/845



Skuas [https://makingscience.royalsociety.org/s/rs/items/NAE\\_6\\_886](https://makingscience.royalsociety.org/s/rs/items/NAE_6_886)

Skuas, March 1902. From The Royal Society, NAE/6/886



Skuas [https://makingscience.royalsociety.org/s/rs/items/NAE\\_6\\_846](https://makingscience.royalsociety.org/s/rs/items/NAE_6_846)

Skuas, 5 December 1902. From The Royal Society, NAE/6/846



Ditto (Penguin rookery) [https://makingscience.royalsociety.org/s/rs/items/NAE\\_2\\_134](https://makingscience.royalsociety.org/s/rs/items/NAE_2_134)

Ditto (Penguin rookery), 18 October 1902. From The Royal Society, NAE/2/134



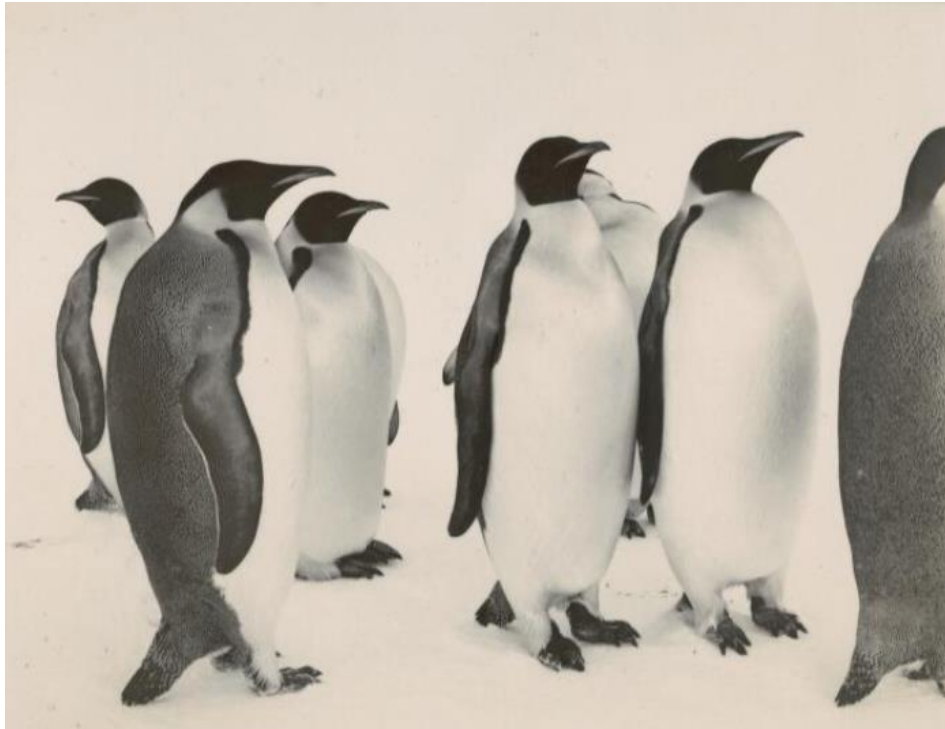
Emperor Penguins [https://makingscience.royalsociety.org/s/rs/items/NAE\\_4\\_428](https://makingscience.royalsociety.org/s/rs/items/NAE_4_428)

Emperor Penguins (2), 04 December 1902. From The Royal Society, NAE/4/428



Emperor Penguins [https://makingscience.royalsociety.org/s/rs/items/NAE\\_3\\_289](https://makingscience.royalsociety.org/s/rs/items/NAE_3_289)

Emperor Penguins, 18 February 1904. From The Royal Society, NAE/3/289



Adelie Penguins feeding young [https://makingscience.royalsociety.org/s/rs/items/NAE\\_1\\_40](https://makingscience.royalsociety.org/s/rs/items/NAE_1_40)

Adelie Penguins feeding young, 09 January 1902. From The Royal Society, NAE/1/40





Adelie Penguins [https://makingscience.royalsociety.org/s/rs/items/NAE\\_3\\_239](https://makingscience.royalsociety.org/s/rs/items/NAE_3_239)

Adelie Penguins, 02 January 1903. From The Royal Society, NAE/3/239

