

Teacher/Adult's Side (1)

Liverpool Biennial

KS2 Science - Migration Movements

The Learner will learn about the migration of birds and think about what it means to migrate, in relation to Yael Davids' project which references the book 'The Birds of America' by John James Audubon.

Estimated time = 30 mins

Curriculum Extract:

Animals, including humans

- Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- Identify and name a variety of plants and animals in their habitats, including microhabitats
- Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)

Living things and their habitats

- Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food
- Recognise that environments can change and that this can sometimes pose dangers to living things

Key terms:

- **Migration** - The seasonal movement of animals from one region to another.
- **Naturalist** - An expert in or student of natural history.
- **Illustrations** - A picture illustrating a book, newspaper, etc.
- **Anatomy** - The parts of a living thing and how they fit together.
- **Spawn** - The large number of eggs produced by fish, frogs, and other water animals.
- **Navigate** - To find the way to get to a place when you are traveling.
- **Dead reckoning** - A method of establishing one's position using the distance and direction travelled rather than astronomical observations.

KS2 Science - Migration Movements

Artist: Yael Davids

LB2021 Project:

Yael Davids presents her work *Wingspan of the Captive* (2021) at Liverpool Central Library. David's project responds to *The Birds of America* - a rare nineteenth century book containing illustrations by American naturalist and painter John James Audubon. Davids considers the anatomy, behaviour, and movements of these birds - exploring what it means to migrate, to study and be studied.

Pictured right:

Snowy Owl from *Birds of America* (1827) by John James Audubon, etched by William Home Lizars. Original from University of Pittsburg.



Activity Instructions:

Read through the information on migration on pages 3 and 4 to learn about what migration is and how and why birds migrate across the world.

Activity 1

Birds migrate long distances without being taught when/how to.

What can you do that you've never been taught to do?

Make a list of these things on page 4. Discuss them with a friend or with an adult.

Activity 2

1. Imagine that you are migrating to another part of the world.
2. Draw or write 4 things that you would want or need to take with you. Use the table on page 4 to choose the most important things that you would take.
3. Why would you take these things? Write down your reasons or talk about them with a friend or an adult.

What is Migration?

Migration is when birds and animals move from one place to another and back again in a regular cycle, usually connected to the seasons. Migrations can be long or short. The common toad migrates up to one kilometre to get back to the pond where it was born. Swallows (which can be seen across the UK in the summer months) undertake an almost 10,000 km migration between the UK and South Africa, covering over 300 km per day!

Why do some animals migrate?

Animals migrate to find food and the perfect place to raise their young. Migration helps animals to locate ideal conditions for living in both the summer and winter. Some animals migrate where there is a rainy season which makes lush new vegetation grow – such as in the tropics, the sub-tropics and deserts.

Some animals migrate when the conditions that are best for growing up in are very different from the place where they are born. For example, many fish live in the sea but migrate up rivers to spawn. Atlantic salmon live in the Atlantic, but swim miles up rivers in Scotland to spawn where they were born (sometimes up to 200 miles upstream!).

How do they find their way?

Some animals navigate thousands of miles to the same breeding sites each year. But how do they find their way? Here are some methods that certain animals use to navigate.

Magnetic Fields

Scientific research has shown that some birds (such as European robins) can sense the earth's magnetic field. Scientists aren't 100% sure how birds have this magnetic superpower, however some theories include: a special protein in birds' eyes called 'cryptochrome' allowing them to see the magnetic fields, or perhaps tiny electric currents being generated in birds' ears sending signals to their brains!

Sun, Moon and Stars

The sky gives important clues to animals to help them find where they need to go. Studies show that a map of the stars imprints on the brain of some young animals – especially birds. Scientists think that some animals can measure the angle of the sun or the moon to the horizon. From this, they can tell where the sun or moon is in its path across the sky and use this to work out directions. Animals definitely have a sense of time – a clock in the brain. All these skills used together allow the animal to work out which direction it is moving in.

Want to find out more about migration? Take a look at this resource created by the BBC:

<http://downloads.bbc.co.uk/radio4/worldclass/BBC-schools-pack-world-on-the-move.pdf>

How do they find their way?

Landmarks

Animals remember recognisable landmarks or objects along their journey and can use these to help them navigate.

Sounds

If you close your eyes, you will be able to focus in on the sounds of your surroundings. Places you know may even have specific sounds - wind through leaves on the trees, a running stream, cars on a main road. Animals can remember sounds from their locations too and use this to help them find their way.

Smells

Some animals seem to be able to use different smells to map out their journeys and use this to be able to recognise where they are by the smell of the area. Could you tell you where you were by the smell of your surroundings? Your home will smell differently to your school, which will smell differently to the park.

Which animals that can be found in Britain migrate?

There are many birds that we can find in the UK that make large migrations each year. See if you recognise any of their names!

Summer visitors:

- Swallows
- Swifts
- Cuckoo

Winter visitors:

- Canada Goose
- Whooper Swan
- Short-eared Owl



Swallows are seen all over the UK from March to October, before heading back to Africa for the winter.



Canada Geese can be seen migrating into the UK in 'V' shaped formations in the autumn.

What can you do that you've never been taught to do? Create a list of things that come naturally to you below.

- 1.
- 2.
- 3.
- 4.
- 5.

What would you take on your migration?
