

The Birds of Morecambe Bay

Teaching Science through Art in Year 4

Primary Art and Design and Science

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Specialist knowledge for teachers

This resource uses art as a hands-on, memorable and creative way to teach science, covering both aspects of the curriculum. It focuses on the birds of Morecambe Bay to explore the movements of the bay over time, including migration, changing habitats and bird song.

Lancaster University is home to the world leading Centre for Mobilities Research. We use movement as a lens through which to analyse complex situations where multiple factors have an impact. For instance, the way that human activity in the Bay interrupts food sources for migrating birds if cockles are over-fished, to the way that global climate change could impact wetland habitats. Our research includes art practice as a research method of engaging more closely with the sensory, tactile, material, visual, public, and participatory aspects of mobility and landscape in other academic disciplines.

Morecambe Bay is one of the top three UK sites for overwintering birds, and its mudflats, salt marshes and sands are internationally important habitats, particularly for wading birds. Although many birds can be linked to the habitats of Morecambe Bay, this resource will focus on twelve that provide a contrast of beaks, feet, habitats, food sources, migration and birdsong.

Contemporary Art

There is a 'more-than-human' turn in contemporary art, focusing on human connections and impacts on the environment, often through the perspective of particular animals. Artforms include performance art, participatory art, sculpture, video and photography. For example: Hanna Tuulikki works with costume, voice and performance to mimic birds in 'Away with the Birds' (2010–2015). Andy Holden focussed on nests and eggs in 'Natural Selection' (2017), and bird song in 'The Auguries' sculptures (2017).

Marcus Coates worked with people who learned to sing bird songs for the work 'Dawn Chorus' (2007) and made bird masks for 'Conference for the Birds' (2019), Daniel and Clara focus on bird and human relationships in photography and video work 'The Watcher and the Bird' (2023).

This resource will introduce easy to grasp information about: birdsong to teach students about sound; feet and beaks to learn about habitat and different species adaption; and migration to teach global connections and potential vulnerabilities of habitats and birds. The birds featured are:

- **Water birds:** Black-headed Gull, Canada Goose, Cormorant
- **Waders:** Oystercatcher, Curlew, Turnstone
- **Wetland and grassland birds:** Reed Warbler, Lapwing and Merlin
- **Garden birds:** Starling, Swallow and Goldfinch

There are a range of useful online resources which can support this work, including:

- The [RSPB](#) website which contains clear information about birds, issues affecting them and a recording of each bird song
- The [Migration Atlas](#) which shows maps, ringing data and tracking data for the migration of 300 species of birds
- The [Birds of the Bay](#) leaflet, which summarises the species found in Morecambe Bay
- An open-access [journal article](#) detailing the importance of creative practices in shaping mobilities research



Examples in practice

Why do birds come to Morecambe Bay?

| Main LO | Science learning/skills | Art learning/skills |
|---|--|--|
| To know what a habitat is To recognise some of the habitats of Morecambe Bay | Photos and visits: observe and name habitats. What are the key identifying features? What makes Morecambe Bay a unique location? | Use sketch books and select appropriate media (pencil, charcoal, pastel, watercolour) to illustrate and label different habitats. Use observational skills related to texture and colour. |
| To group/classify some of the birds of Morecambe Bay in different ways | Independent sorting and labelling Lead onto identifying using beaks, feet, feeding techniques, nesting | Sculpture techniques to create bird feet (e.g. clay or play-doh, wire base with clay/mod-roc, paper moulding etc). Photograph the artwork, add to science books and record science learning. |
| To recognise the seasonal changes and their impacts on birds To know that Morecambe Bay is important for the migration of some birds | Understand how food availability changes with the seasons Connect this to learning about migration – the birds follow the food sources | Sculpture/3D representation of migration routes (draw on the work of Gego and Tomas Saraceno). This could link to geography. In pairs/groups, plot the migration route of a bird that uses Morecambe Bay – plot using construction straws. Each bird type can be identified by the colour/design on the straws. Combine the routes with the central point of Morecambe Bay (e.g. fix onto a ball of foam/paper using wires). On thin strips of paper, give further information about the bird (food, route used etc.) and stick onto the straw routes. Display and photograph this. |
| To identify how environments change and what changes in them To reflect on our own impact on them | Questions – link this back to the original hook. Can we now answer our initial questions? How are changes in Morecambe Bay affecting the habitats for the birds? What is that going to mean for the future of the species? | How can we represent all the elements we have created and learned about into a display/presentation (for parents?) to demonstrate our learning? |

Two lessons as part of a unit on sound

| Main LO | Science learning/skills | Art learning/skills |
|---|--|--|
| <i>Prior learning in the unit: Identify how sounds are made; vibrations travel through different mediums to the ear; sounds get fainter the further away from the source.</i> | | |
| To find patterns between volume of sounds and strength of vibrations To find patterns between the pitch of sounds and the features of the object that made it | <i>(Use Powerpoint to listen to the different birdsong for the selected birds to be used)</i> Using given list of 12 birds on the Powerpoint, think about: <ul style="list-style-type: none"> • Does the biggest bird make the loudest sound? • Does the size of the bird give a clue to the pitch of their birdsong (highest/lowest)? • Which birdsong is the quickest? (Most notes) Compare examples of 5 or 6 birds – children can undertake further research | Sketching their interpretation of the sound waves of the given birdsong Show examples of artwork from Andy Holden and Marcus Coates Children recreate soundwaves in clay or other forms of modelling (e.g. string soaked in PVA/ water mix) How can we represent pitch/frequency/volume? Discuss and allow children to experiment with available resources |

Curriculum aims and objectives

Resource Aims – Sound

This resource is aimed at Lower Key Stage 2, Year 4: teaching science unit on sound using art skills.

Head

Students will learn about specific areas of science through the topic of bird song.

Heart

Students will develop an emotional connection to animals' lives that they might experience around Morecambe Bay.

Hands

Students will use a practical understanding and develop a more deeply-embedded learning through hands-on creative art projects.

Learning Outcomes

Prior learning assumed: identify how sounds are made; vibrations travel through different mediums to the ear; sounds get fainter the further away from the source

Science – the children will be able to:

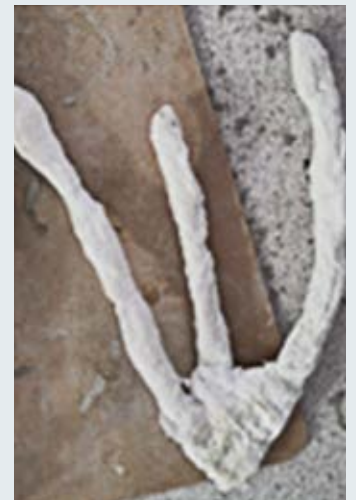
- Find patterns between the pitch of a sound and features of the object that produced it
- Find patterns between the volume of a sound and the strength of the vibrations that produced it
- Recognise that sound gets fainter as the distance from the sound source increases

Art – the children will...

- Use sketch books to record their observations from listening to birdsong and use them to review and revisit ideas
- Improve their mastery of art and design techniques, including drawing and sculpture with a range of materials [for example, clay, wirework, mod-roc, etc]

Final outcome

Drawing in sketchbooks that show an understanding of contrasting soundwaves between a variety of birds found around Morecambe Bay, and a sculpted piece that shows the development of their sketched ideas into a 3D form.



Adaptations to extend impact

Cross-curricular suggestions

Ideas using the theme of birds to teach subjects on the Year 4 curriculum using art and design:

English

- Made by the Moon: creation of the curlew and artwork (watercolours) based on the book/storytelling
- Shape poems: plot migration routes using construction straws and write poetry (using imagery) on strips of paper and fixed onto the 'map' of straws

Geography

- Which birds fly the furthest to come to Morecambe Bay? Which stay here all the time? (display creatively – link to maths pictograms?)
- Which humans come the furthest to Morecambe Bay? (tourism – display as for birds)

History

- How have habitats around the Bay changed over time? – draw onto tracing paper and overlay

Art & Design

- Textiles – weaving images of the Bay
- Sculpture – creating different nests from collected/sustainable resources
- Drawing/painting – study the work of local artists (visits?) and how they interpret Morecambe Bay and its different habitats



Black-headed Gull



Canada Goose



Cormorant



Oystercatcher



Curlew



Turnstone



Reed Warbler



Lapwing



Merlin



Starling



Swallow



Goldfinch

