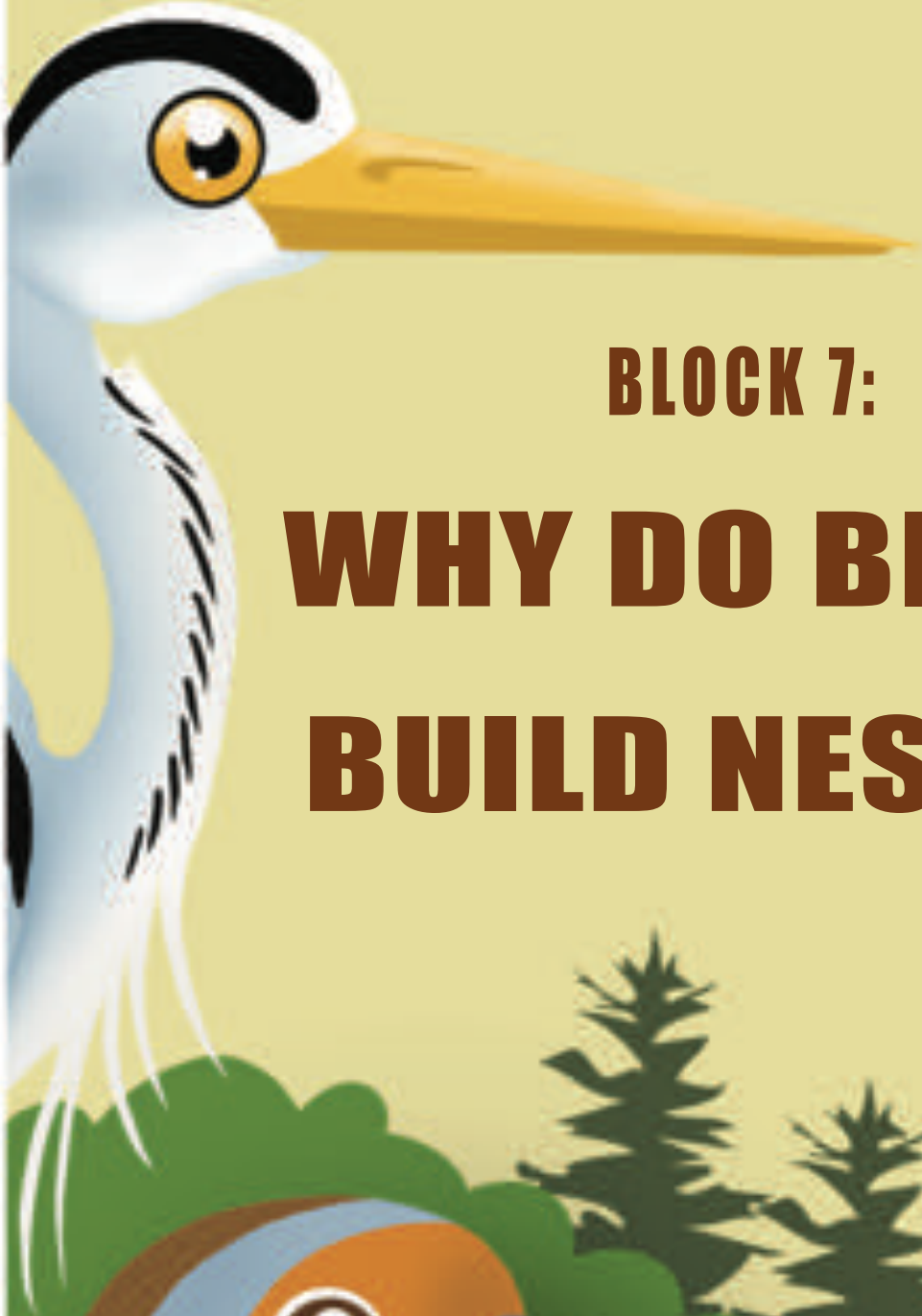


SEEING THE WORLD THROUGH NATURE

SCHOOL WORK SHEETS

BLOCK 7:

**WHY DO BIRDS
BUILD NESTS?**





Download the app

To complete some of the tasks outlined in the school work sheets you will need our special smartphone app, called [NAME HERE]. To download this app, please go to:

- www.xxxx (iOS)
- www.xxxx (Android)



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BLOCK 7

WHY DO BIRDS BUILD NESTS?

Background: Decorate the classroom with pictures/illustrations/tactile models of various people's homes (e.g., a cottage in a village, a wooden hut, an igloo, a skyscraper, an urban house, a yurt, etc) and also of various birds' nests. Use these materials to talk to your students about why birds build different nests.

| DETAILED PROBLEMS | Why do birds sing? Why do birds build nests in spring and not in autumn? How do birds use a nest? Why are there different types of nestboxes for different types of bird? | What is the structure of a bird's egg? Is the shape of the egg important? |
|--|---|---|
| Activities in the field | <p>Go for a walk to a park, wood or city gardens and count how many bird calls you can distinguish.</p> <p>Go for a walk again after learning how to identify bird songs (S7/A/1).</p> <p>In your neighbourhood, look for nests of a Magpie, Rook, Collared Dove or Woodpigeon. Carry out observations every 2-3 days. [A Magpie builds a nest at the end of March or beginning of April; a Rook in the second half of March, a Woodpigeon in the second half of April and a Collared Dove in March.]</p> <p>Game: Collecting material to build a nest. Children collect various materials in bags. They will be used in a classroom activity.</p> | <p>Prepare 'Kinder Surprise' eggs and put maths tasks into them. Give children baskets and ask them to find eggs.</p> |
| Indoor observations and experiments | <p>Let's learn birds' songs (S7/A/3).</p> <p>Presentation S7/A/4 inspires children to answer the questions why birds build nests and why they do it in the spring.</p> <p>Observation of online webcam streams from a selected nest, e.g. nest of White Storks, Swifts, Barn Owls or Peregrine Falcons. If you miss any important moments, you can always get back to the saved images from a given nest.</p> <p>Installing nestboxes is a way to help birds to find a safe and secure place to build a nest. Memories from the trip and examples of nestboxes will help the students to understand why there are different types of nestbox.</p> | <p>A bird's egg is perfectly adapted to protect the chick embryo inside it and ensure its normal development.</p> <p>Bring a suitable number of raw hens' eggs (one for each pair of children). You will also need small bowls or plates and magnifying glasses. In addition, bring an egg from which the shell has been removed. To do this, put an egg in a jar, pour vinegar over it and soak the egg in a closed jar for two days. Take the egg out of the jar just before the demonstration, rinse it carefully with tap water and put in a bowl.</p> <p>Look at the shape and structure of an egg (S7/B/1). Ask the children questions and let them look for answers on their own by asking additional questions.</p> <p>Optionally, if it is possible, also prepare a quail, a goose and an Ostrich egg.</p> <p>Together, look for answers to the questions in worksheets S7/B/2 and S7/B/3.</p> |



School Work Sheets Block 7

| | | |
|-------------------------------------|---|--|
| Artistic tasks | Building birds' nests (S7/A/5) will stimulate creativity and manual dexterity. It also trains children to cooperate with one another. | Bring sheets of paper, crayons and paints. Ask the children to cover the whole area of the sheet with the colours and patterns of their choice. Next, distribute eggs cut out of white paper and ask the children to decorate them so that they are as camouflaged as possible when put on the coloured sheet. |
| Linguistic and written tasks | Writing advertisements for birds, offering nestboxes for rent (S7/A/6) | |
| Mathematical tasks | Building paper nestboxes using a pre-prepared design (S7/A/7) | |
| Games and competitions | <p>Game – tossing a Cuckoo's egg into nests built by other birds.</p> <p>Pairs of children hold hands and try to toss their eggs into nests, pretending to be Cuckoos running around nests, and laying eggs in them without being noticed.</p> | |



GETTING TO KNOW BIRD SONGS

Guidelines for teachers: Blind, visually impaired and sighted students can all learn to recognise and identify the birds that occur around their homes and school by listening carefully to and recording their songs and calls.

The sounds of birds is a distinctive feature of the natural world. Birds make sounds for lots of reasons. They often sing to attract the attention of a mate, or they may make alarm calls to warn others of the presence of a predator.

In this activity, students will get the opportunity to explore the world of bird sound! Start by playing the calls and songs of the birds below, using our special smartphone app, explaining to your students which bird they are currently listening to. Depending on how confident your students are, you can alter the number of birds they listen to, but always start with the most common birds found in your area.

Once your students have had a little time to familiarise themselves with the sounds made by the different birds, take them outside into a natural area and ask them to listen quietly for the sounds of birds. When they hear a bird, the students should tell the teacher what they heard. Ask them what it sounded like (ask them to do an impression of it!) and ask them to guess which bird made the sound. How many different species of birds did you hear?

Repeat the task at a different time of the year. Do you notice any similarities or any differences?



Bird song observation card

Which birds were heard during your walk? Put 'X' in the appropriate box.

| SONG HEARD | | | DID YOU ALSO SEE THE BIRD? |
|------------|---|--|----------------------------|
| Blackbird |  (JV) | | |
| Chaffinch |  (JV) | | |
| Great Tit |  (JV) | | |

Continued next page....



| SONG HEARD | | | DID YOU ALSO SEE THE BIRD? |
|-------------|---|--|----------------------------|
| Blue Tit |  (JV) | | |
| Song Thrush |  (JV) | | |
| Other | | | |
| Other | | | |
| Other | | | |
| Other | | | |

Compare your score with the observations of other students in the class or group.



NEST CONSTRUCTION

Guidelines for teachers: This activity focuses on how birds construct their nests and why they build such peculiar structures.

Start the activity by discussing with the students why birds build nests. Encourage them to explore the topic and question exactly why birds build nests in which to lay their eggs (the answer is to maintain a suitable environment for the eggs (temperature, humidity, for safety, etc).

Discuss with the students the different types of nests that birds use, and compare them to human houses.

Prepare different models of birds' nests and pass them between the students, allowing them to explore the properties and size of the houses. Ask them to compare the houses in terms of their size, structure and what they are made of. If possible, bring in an abandoned nest and allow the students to hold it, reminding them to be gentle.

Ask the students questions about the nest, encouraging them to explore it through touch:

- 1 What is the nest made of?
- 2 Is the nest big or small?
- 3 Which bird do they think lived in this nest?
- 4 How long did it take the birds to build the nest? Encourage your students to speculate!
- 5 Was the nest in a tree, in the bushes, etc?

If it is not possible to find a nest, consider bringing in materials that are typically used by birds for nest construction, e.g., twigs, grass, wool, hair. Allow the students to explore the materials and speculate about why birds include these materials in their nests. If they are feeling confident, they can even try to build a nest themselves!

Questions and tasks *(ask the students to research the answers as homework)*

- 1 Where does a bird build its nest?
- 2 Do pairs of birds build nests together?
- 3 What materials do they build nests with?
- 4 How do the birds behave?



Some materials used in nest building – twigs, moss, feathers, hair, flowers, bark



CAN YOU RECOGNISE A BIRD BY ITS VOICE?

What you will need

- Two people sitting in the middle of a class or hall
- Blindfolds
- Recordings of birds' songs (available on our special smartphone app)
- A notebook or something to write on

Tasks and questions

- 1 Two students from the class sit on chairs
- 2 If sighted, they put on blindfolds
- 3 One pupil sings a short song. The task of the children who are blindfolded is to guess who is singing and to name the person. Was it possible to recognise fellow students simply by hearing their voices? Why do the students think this is so?
- 4 This activity can be repeated with different combinations of students, allowing them all to have a go at being both the singer and the listener.

As a follow-up activity, play for your students the sounds made by some common bird species in your area. Then take the students outside into a natural area and ask them to quietly listen for the sounds of birds. Ask your students whether they recognise any of the bird sounds.



WHY DO DIFFERENT BIRDS BUILD DIFFERENT NESTS?

Guidelines for teachers: This activity works best if the teacher can bring in real examples of different bird nestboxes. Cards with tactile images of the different bird species would also be useful, allowing the students to match the birds to the nestboxes.

If you visit a nature reserve visitor centre, or even a garden centre or pet shop, you will often see a range of bird nestboxes. You may be surprised by their diversity! They can differ in size, shape and more!

A nest for Swifts

Swifts are very sociable and like to build their nests near other Swifts, in rock crevices or in the hollows of old, tall trees. It is difficult to find such places in cities, but these wide wooden nestboxes, when several are put up near one another, make the perfect home for these aerial acers!

A nest for Blue Tits

In natural areas, Blue Tits build their nests in hollows around 20-30 cm deep, with a small entrance hole. These tall wooden nestboxes, with high openings and a depth that mimics the deep hollows preferred by these birds, provide ideal nesting locations for Blue Tits in cities and gardens.

The small opening in the nestbox limits access by larger birds that may otherwise use the nestbox, or even eat Blue Tit eggs or chicks!

A nest for Great Tits

The Great Tit, like the Blue Tit, prefers to nest in deep hollows. The nestbox design that they like is therefore quite similar to that used for Blue Tits. However, because Great Tits are larger than their blue relatives, their box has a wider entrance hole.

A nest for Robins

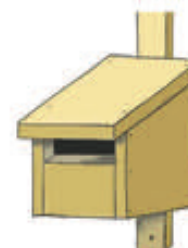
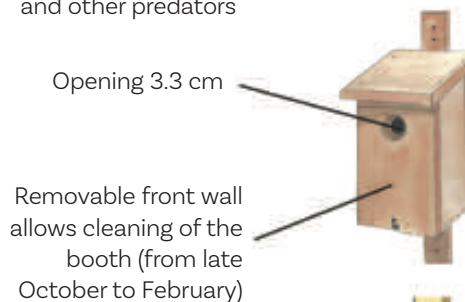
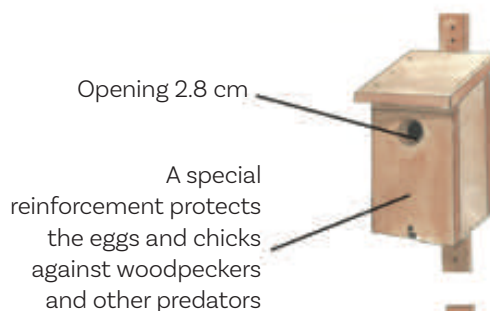
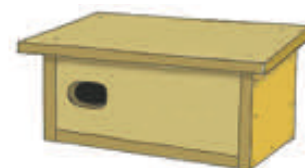
Robins will nest almost anywhere or in anything that offers a hole, depression or other cavity, e.g., in a sheltered bank, ditch or wall, a crevice in a tree or amongst a creeper or in tangled undergrowth. These unusually shaped nestboxes cater to their preferences, with a sloping roof and a long rectangular opening.

If sample nestboxes are available, encourage the students to explore them through touch. They should pay particular attention to the different shapes and to the characteristics of each opening.

Ask them to guess which birds use each nestbox. Why do they think that this is the case?

Questions to consider:

- Why are the nestboxes for both tit species so similar?
- What other birds can choose nestboxes for building their nests?



(MK)



CONSTRUCT YOUR OWN NEST

Guidelines for teachers: While this test is a fun and engaging way for students to learn about nest-building, it could be difficult for students with additional disabilities. Some flexibility should then be factored into the task. The nest-building activity itself is fine, as it will allow students to explore a wide range of materials. However, the use of tweezers to mimic a bird's beak should be used as an extra part of the activity, which students can undertake if they wish.

What you will need

- Various natural materials collected during a field trip
- Tweezers (to act as the bird's beak)



(JV)



(PX)

Tasks and questions

- 1 Split the students into groups.
- 2 Determine which bird's nest each group will build – will it be a big nest or a small nest? Will it be made of lots of different types of materials or just a few?
- 3 Students should choose the material(s) they need to build the nest. If students wish, they can act like birds, using tweezers to mimic a bird's beak to pick up natural material for the nest.
- 4 Talk to the students about the difficulties birds may have in finding materials and building nests, especially if the students are using the tweezers – is it slow and time-consuming?
- 5 Build your nest!



PROPERTY ADVERTISEMENT

After putting up a nestbox, you need to encourage birds to move in! In this activity, you'll work together to create an advertisement, from a bird's point of view, for a brand new nestbox available for rent that birds in the area can move into!

Remember, a good advertisement must attract the recipient's attention!

Why not try and record your advertisement as if it was for the radio? Tell your listeners all about the nestbox's sleek design and spacious interior!

ADVERTISEMENT

For Rent

(Provide a short but detail description of the nestbox)

.....

.....

.....

.....

(You can attach illustrations)



LET'S BUILD BIRD NESTBOXES

Guidelines for teachers: Blind and visually impaired students will need to be helped with this task, particularly with the cutting of the paper. Although this class-based exercise just involves making paper models of nestboxes, it would also be possible to build real wooden nestboxes with older children, using similar principles.

This table lists the dimensions of three nestboxes:

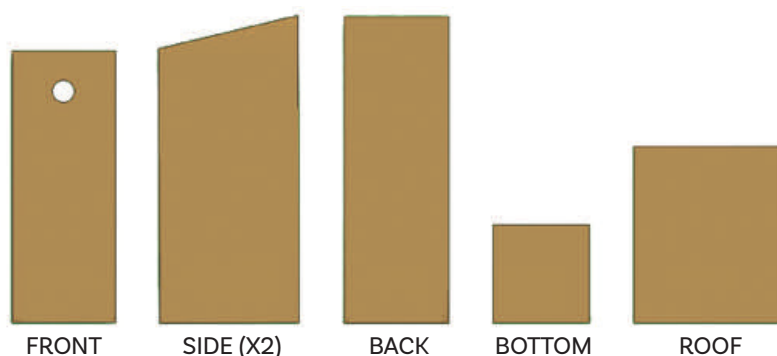
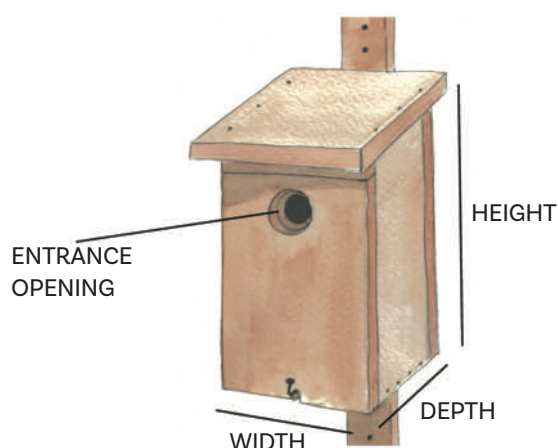
| TYPE OF BOX | A | A1 | B |
|---------------------------|--------|--------|--------|
| Height | 34 cm | 34 cm | 41 cm |
| Width | 15 cm | 15 cm | 19 cm |
| Depth | 15 cm | 15 cm | 19 cm |
| Diameter of entrance hole | 3.3 cm | 2.8 cm | 4.7 cm |

What you will need

- Sheets of paper
- Glue, adhesive tape, double-sided sticky tape
- Scissors
- Ruler

Tasks and questions

- 1 Select the type of nestbox model you want to build.
- 2 Choose pieces of paper that will allow you to make the model of the box.
- 3 Create a paper template, taking into account the dimensions given in the table above.
- 4 Cut the individual sections of the box.
- 5 Build a model from the prepared sections.



Dimensions for bird nestbox construction

(MK)



WHAT IS A BIRD'S EGG MADE OF?

1. Shape of an egg

What you will need

- Fresh hen's eggs
- Ping-pong or golf ball

Tasks and questions

- 1 Allow students to hold the eggs and explore their shape, size and structure through touch. Ask them if they can describe what shape the egg is.
- 2 Ask students to place the ball on the desk and, holding their finger on top of it, gently roll it forward. Then get them to do the same with an egg. How does the ball behave? (It should roll in a straight line.) What about the egg? (It should roll in a circle.)
- 3 Why do the students think that these objects roll differently? Is it due to differences in their shape?
- 4 Why do the students think it is important for eggs to roll in a circle, rather than in a straight line? (It is to prevent them from rolling out of the nest and cracking!)

2. Structure of an egg

What you will need

- Fresh hen's egg
- An egg in vinegar (in a jar) prepared two days before (see instructions in the introduction to this block)
- Piece of chalk
- A spoon of vinegar
- Plate/bowl
- Hand lens (magnifying glass)
- Piece of paper
- Oilcloth to protect your desk
- Pencil

Tasks and questions

- 1 An egg is covered by a shell. What does it look/feel like? Which of the following words would describe it – soft, hard, rough, smooth, plain, multicoloured, single-coloured?
- 2 Break the egg by cracking the shell on the edge of the bowl or plate. Pour the contents gently into the bowl or plate. You will need it in the next experiment.
- 3 Examine/feel the inside of the broken shell. What do you notice?
- 4 Now examine/feel (very gently!) the egg which had been soaked in vinegar. What do you notice?
- 5 Pour a few drops of vinegar on the chalk (chalk consists of calcium, just like eggshells). What do you notice?
- 6 Which part of the egg is missing? What do you think it was made of?



IS THE SHAPE OF A BIRD'S EGG IMPORTANT?

The shape of bird eggs varies quite a bit between species! Some birds have eggs with a more pointed tip, while others are rounder.

Guidelines for teachers: Allow your students to explore the model eggs. How do they differ in size and shape? Using modelling clay, get the students to create replicas of the two egg types. Make sure they get the shape right!

Now it's time to explore how the shape of an egg affects how it moves! Using a finger, get your students gently to roll each type of egg model they make, keeping their finger gently on the top to track its movement.

How does each egg move? Is there a difference between the two?

- Because the Swallow egg is rounder, it should roll in roughly a straight line.
- Conversely, the more oval and angular shape of the Lapwing egg should cause it to move in an arched, circular path.

Consider:

- Which egg is better for laying on the ground? Why is that?
(Explain to your students that because Swallows lay their eggs in a bowl-shaped nest, the eggs are therefore unable to roll out of the nest. Conversely, Lapwing lay their eggs on the ground and thus circular eggs could easily roll out of the nest and break. However, their unusual shape prevents them from doing so, instead causing them to roll in a circle, but staying in roughly the same place!)
- How do birds which lay their eggs directly on the ground protect them against predators?



(MK)



Lapwing egg (left) and Swallow egg (right). (**Note:** pictures not to scale.)



WHY DO BIRDS' EGGS HAVE DIFFERENT COLOURS?

Guidelines for teachers: This activity is not suitable for blind students, but could still work for visually impaired students equipped with magnifying glasses.

Your guess:

What you will need

- Cut-out pictures of different birds' eggs (see below)
- Cards in different colours (the colour of grass, hay, earth, tree hollow, nestbox or what your imagination suggests)

Tasks and questions

- 1 Arrange the egg cut-outs on different sheets or surfaces.
- 2 Which eggs are the most visible?
- 3 Which eggs are the least visible?
- 4 How does the background colour affect how you see the egg?

Consider:

- Which eggs are laid on the ground (among plants, on grass, under bushes)?
- How does the colour of eggs protect them from predators?
- Why are eggs that are laid inside hollows or cavities often completely white?

A selection of birds' eggs



(MK)

These materials for teachers working with blind and visually impaired children have been prepared within the project “Seeing the World Through Nature.” These are based on the educational resources that resulted from the project “Empowering Teachers and Pupils for a Better Life Through Nature,” and the suggestions contained therein have been adapted to work with children with impaired vision in order to enable them to learn as much as possible about nature through direct contact with it.

Non-governmental organisations involved in bird protection, partners in international federation BirdLife International, participated in the project. The Polish Society for the Protection of Birds (OTOP) was the leader of this educational initiative, which also involved the associations BirdWatch Ireland, BirdLife Malta and BirdLife Cyprus. The Polish Association for the Blind was the partner cooperating in the field of adaptation of source materials for the needs of teaching blind and visually impaired children.

Both projects were carried out with the financial support of the European Commission (Erasmus+ programme).

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BIRDWATCH IRELAND is the largest independent conservation organisation in Ireland. A registered charity, its aim is the conservation of wild birds and their natural habitats. It has over 15,000 members and a network of 30 local branches. It manages nature reserves which protect threatened habitats and their wildlife, works to conserve Ireland's biodiversity, and carries out education, survey and research work. For more information, go to www.birdwatchireland.ie

