

SEEING THE WORLD THROUGH NATURE

SCHOOL WORK SHEETS

BLOCK 2:

**WANDERING
OUT IN
AUTUMN**



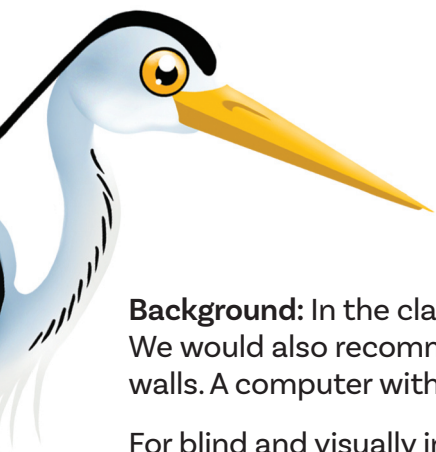


Download the project's app

To complete some of the tasks outlined in the school work sheets you will need our special smartphone app. To download this app, please go to the online app store (App Store for iOS or Google Play for Android) and enter the name "Meet the Birds" in the search field.



Co-funded by the Erasmus+ Programme of the European Union



BLOCK 2

WANDERING OUT IN AUTUMN

Background: In the classroom, maps of the world are hung along with a map of Ireland. We would also recommend having a globe, some compasses and some bird silhouettes on the walls. A computer with internet access and a projector would also be useful.

For blind and visually impaired students, we would suggest preparing and using tactile maps. Such maps can be prepared by using a Braille embosser/printer. If a teacher does not have such a device, they may prepare a tactile map with the use of available materials: ropes, lines, paper stripes, etc, taped to a sheet of paper or cardboard.

DETAILED PROBLEMS	How to recognise why birds migrate. Which birds leave for the winter, and which birds arrive for the winter?	What routes do birds take when migrating? How do humans and birds find their way? Can migration be dangerous for birds?
Activities in the field	Before birds set off to their wintering grounds, they forage intensively to build fat reserves for the journey. They also gather in flocks - this could be a conversation topic with students. The teacher can use the section S2/A/1 in work with partially sighted pupils.	An orientation game in the field (S2/B/2) teaches children various ways of identifying directions. A sensory path (S2/B/3) will make children realise how to use their senses to orient outdoors. At the end of the game, discuss with children that birds, just like people, have a range of ways to orient themselves in the field.
Indoor observations and experiments	Not all birds can spend the winter in Ireland. Section (S2/A/2) introduces the reasons for the autumn migration of birds. The story needs to be read aloud, and printed in Braille or large print for partially sighted pupils. Section (S2/A/3) reflects on how a bird's diet changes with the arrival of colder weather.	Drawing the flight path of selected migratory birds on the globe, the task should be preceded by an analysis of the map showing the migration routes of the White Stork and/or the Barn Swallow (S2/B/4). Have a discussion with pupils about a White Stork's journey to its wintering grounds (S2/B/5). Assist the students to prepare a guide box. If you find that students have difficulties, consider it as a homework assignment, so that students have some time to find relevant information concerning each country. Talk about what poses a threat (S2/B/6) for birds during their migration.
Artistic tasks	If possible: plastic works depicting the keys of departing birds.	If possible: on a bed sheet, paint a fragment of a contour map of the world. Mark on it the wintering places of our birds and photos of birds.
Linguistic and written tasks	Draw children's attention to the fact that the White Stork's name is different (S2/A/4) depending on the language of the countries along its migration route, which is why scientists use Latin or scientific names for birds.	If contact via the country BirdLife organisation is possible: we write a letter to children living in Lebanon with a request for information about our storks.
Mathematical tasks	Counting birds using the app. Repeat the concept the highest, the lowest, the middle, using the names of birds departing for the winter.	Bird migration in numbers (S2/B/7)
Games and competitions	Invite children to play cards (S2/A/5). It will help them to understand the life cycle of the White Stork.	



FOLLOW AUTUMN BIRD MIGRATION

Guidelines for teachers: The activity could be carried out in a mixed form. You can have a discussion with students, but also organise a walk with them to hear birds as they fly. Observing departing birds in flocks could be one of the conversation topics. It is advisable to use pictures showing different bird flocks when working with partially sighted students. Help students to find differences.

Task 1. Type of bird flocks

Birds flying away can form different types of flocks. Examples are presented on the opposite page.

- 1 Which birds create flocks?
- 2 Try to find differences between them
- 3 Do White Storks fly in flocks?

Guidelines for teachers: Images should have high contrast and should not be very detailed. Blind learners should have an opportunity to examine embossed images, if possible. If embossed pictures are not suitable, as blind students have difficulties understanding them, focus rather on a detailed verbal description. It is advisable to check the legibility of tactile pictures before the lesson, to decide whether to use them or skip them.

- Geese
- Ducks
- Cranes
- Oystercatchers
- A single bird soaring in the sky
- An irregularly shaped flock - it could be a flock of Starlings

Task 2. Go for a walk

Guidelines for teachers: Before the walk, let students listen carefully to voices of geese, Starlings, Crane, Long-tailed Tit, White Stork. You can use the “Meet the Birds” mobile app available on Google Play and on the AppStore.

Tasks and questions

During the walk, listen for a moment and answer the following questions:

- 1 Did you hear any birds?
- 2 Can you identify these birds' voices? You can use the “Meet the Birds” app to recognise them.
- 3 Are they going to migrate?
- 4 Do you know any characteristic signs of bird migration?
- 5 Where do you think will birds stay for the winter?
- 6 Which of the birds pictured opposite could they be, if any?

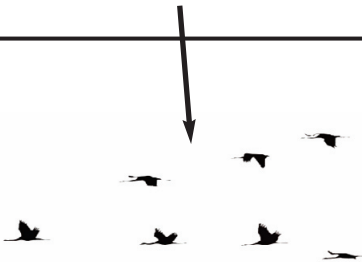
I can hear a loud noise
of a big group of birds

I can hear honking

I can hear chattering

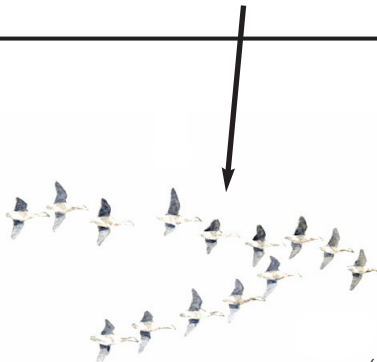


They could be Cranes



(MK)

They could be geese



(JV)

They could be Starlings



(PX)



(MK)

Ducks

Grebes

Oystercatchers

Task 3. How do you know that birds are preparing to fly away?

A discussion with students: Tell the students how some bird species behave at the end of summer before their journey to wintering grounds: they gather in big flocks and get stronger to be ready for this great challenge. White Storks and Cranes form large groups in fields and meadows. Barn Swallows and House Martins are seen the big flocks sitting and chirping on power lines. They are usually loud and easy to hear. Swallows can also gather in great numbers in reed beds, which provide an important source of insect food prior to migration.



STORY

Tom lives in the countryside. On the other side of the road, in front of the entrance to his house, on a pylon, there is a Stork's nest. There is also a nest of Swallows, made of mud and straw, under the overhang of the roof.

In his free time, Tom used to watch the Swallows building their nest, and the Storks repairing theirs.

Then he watched the birds laying their eggs and then feeding their offspring.

At the end of the summer, he had a dream of the Stork chatting with the Swallow:

"Ah!" sighed the Stork: "It's good that our children have grown up and are learning to fly. It gets harder to catch something nutritious to eat. Worms and snails hide away, there are fewer bugs; even a mouse is not easy to catch."

"Yes," the Swallow agreed: "We have the same problems. We fly with no breaks, but it's still difficult to find anything to eat."

"I envy a Blackbird – there is plenty of fruit now. Or a Goldfinch, for example: wherever it lands it finds some seeds. As for us, I guess it's time to start preparing for the journey..."

The Stork clacked: "Not only is there less food, but the days are getting shorter, and I cannot catch a thing in the dark."

The next morning, Tom rushed to see how his bird neighbours were doing, but the nests were empty....

"The Storks are holding their meeting on the nearby meadow, as they usually do at the end of summer. They will leave soon," Tom thought. "Again, we will have to wait until next spring to see them again."

At least, the Swallows will wait until the summer ends. However, they are already sitting in a group on the power lines, surely chatting about the upcoming journey in their own Swallow language.

[Author: **Iwona Majcher**]

Guidelines for teachers: The story needs to be read aloud, or printed in Braille or in large print for partially sighted pupils



PLAYING WITH LETTERS

Guidelines for teachers: Letters for exercise 1 should be printed in Braille or in a larger print for those with partial vision.

1a. Find the ingredients of a bird's diet

From a list of anagrams (or groups of letters), find words that are ingredients in a bird's diet and write them down.

1b. Alternative exercise

The teacher makes a list of different items, some of which are ingredients in a bird's diet.

Look at the list and find out which of the words are the ingredients of the bird's diet. Circle proper answers or write them down.

From detected ingredients of a bird's diet, write down those that are unavailable in the winter.



STORK IN DIFFERENT LANGUAGES

Letters are printed in Braille or in large print for those with partial vision.

Questions and tasks

- 1 Read the name 'stork' in the languages of some of the countries on its migration route.
- 2 Ask if the students can remember some of those names.
- 3 In some cases, you may have problems reading the names. Why?

REGION	STORK
Polish	Bocian
Czech	Čápbílý
Slovak	Bocian
Romanian	Barzăalbă
Bulgarian	Белиятщъркел
Irish	Corr Bhán
Turkish	Leylek
Arabic (Egypt)	ضربأق لقل
Scientific name	<i>Ciconia ciconia</i>

Think about it

- Why do biologists use one unified name for species?



THE LIFE OF A STORK

A teacher can carry out this exercise in two ways:

Option 1

Prepare a set of cards with short descriptions related to different events in the life cycle of a White Stork, printed in large print and Braille. Then ask pupils to arrange cards into a chronological story of a stork. Students can also write this story in their notebooks.

The information might look like this:

- 1 White Storks are returning in spring to Europe from wintering grounds in Africa.
- 2 Storks build or repair their nest located in a tree, on a building, on a pylons or on a purpose-built man-made platform.
- 3 A male and female Stork greet each other with bill-clacking in an empty nest.
- 4 Birds lay eggs and then incubate them.
- 5 The adult Storks feed and take care of their offspring.
- 6 At the end of summer adults and young birds gather before departing for the winter.

Option 2

Prepare a number of cards as in **Option 1**. Distribute them among students. Then they swap their places to make the story, with each of them reading their own part.

You can divide the students into small teams – pupils in one group have cards with the same information.

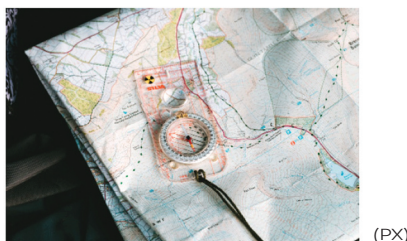


OUTDOOR GAME

Design an outdoor game for your pupils

In tasks, include activities developing orientation and sense of direction. Think how students can use their senses in the game. Design a task involving the senses of smell, hearing and touch.

- 1 The concept of **natural geographic hints** for orientation should be explained to children. While exploring the forest, the teacher shows blind students MOSS ON A TREE OR ROCK and asks them to discover whether different trees or rocks are covered with the same plant. Moss can always be found on the north side of the growing tree trunk or a separate rock.
- 2 The teacher can prepare a lesson about giving directions, thus showing other natural clues such as WIND DIRECTION and SUN POSITION. If students can see the sun, the exercise will be easy for them. With totally blind students, you should help them to find the sun by using other senses, e.g., warmth of the sun.
- 3 You may accompany the lesson with the use of a tactile or electronic COMPASS.



(PX)

- 4 While walking, the teacher asks students about SMELLS and SOUNDS they have experienced. Students answer the questions or try to memorise as much as possible.
- 5 You can also arrange the 'School of Smell' game and let your kids learn to distinguish the smell of mint from other smells (you can use bottles with essential oils).

Follow-up tasks for the children

- 1 Find out where can you see or feel the sun in the morning, at noon and in the evening.
- 2 What smells can you feel when you are close to your house?
- 3 Are they different to those that you experienced in the forest?



SENSE OF ORIENTATION

Plan classes on a sunny day at noon!

Knowing geographic directions helps blind people in orientation and mobility, as well as in reading tactile maps.

Preparation

- It is recommended to use TACTILE MAPS (see instruction on page 1) to teach geographic directions in the classroom, and then other aids such as a TACTILE COMPASS, or one on a phone.
- Have a person to help with an inflated balloon and something to burst the balloon.

Here are some suggested exercises:

- 1 Giving geographic directions should be explained for blind pupils. It is best at noon when the sun shines, which makes a good orientation point, even for blind students, who may know when the sun is shining, as they feel its warmth on their faces. Talk about the sun position as the SOUTH direction. The opposite direction is NORTH.
- 2 You may try simple geographic tasks. For example:
 - turn to the east and walk a few metres
 - turn to the south and take six steps
- 3 **If possible:** Ask the students to hold a compass in their hands and check how the needle rotates as they move about. You can have a discussion with the children about the polar directions of the Earth and their knowledge of our planet's movements.
- 4 On your signal, ask someone to burst the inflated balloon - the pupils will probably turn in the direction of the bang. (Please dispose of the balloon carefully!) Talk to your children about the fact that, thanks to their sense of hearing, they heard the balloon burst. Pay attention to the fact that they turned in the direction from which the noise of the bursting balloon came.
- 5 Finally, explain to the children that birds, like humans, use their senses to navigate the world using various elements of nature and natural phenomena (weather, temperature and magnetic fields).



SENSORY PATHWAY

You can arrange activities in one of two ways:

A. While going for a walk in the forest, meadow or any other open space in the school neighbourhood, ask students to pay attention to various sensory elements in the forest: they touch, smell and hear. Those who can see may use their eyesight for more information.

At the end of the walk summarise with children what they have experienced and what they have learned about nature.

B. If going out is impossible, bring forest elements to the classroom and design a 'sensory pathway' on the school grounds, where children can use their various senses. You can play a recording so that students have a chance to experience nature.

Sense of touch

- Gather various natural materials such as stones, sand, cones, grass, water, bark, tree branches, chestnuts, sticks. Place them on a table in the classroom or on a blanket on the ground. It is important that sighted children do the exercise with their eyes closed or blindfolded.
- Ask each child to touch the collected elements and choose one of them (or more) which fulfils one condition, e.g., is it smooth or rough, long, short, thin, wet, round, etc. Let students guess what element they have in their hands or explain and name it.
- You can make the game more difficult and ask students to choose one thing which fulfils two conditions, e.g., is it rough and round, etc.

Sense of smell

You can put different herbs in bags (each separately) and encourage kids to feel them and distinguish their smells.

Sense of hearing

Listen closely to surrounding sounds, then talk about them and point out where they came from.

When the class ends, talk with the students about the way birds (and people) orientate using their senses and elements of the environment.



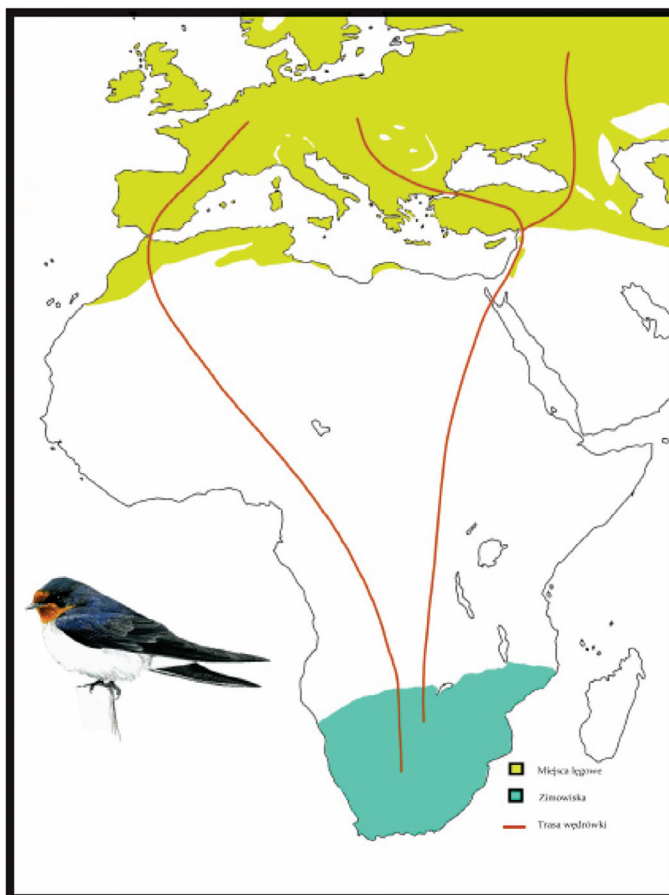
MIGRATION MAPS: BARN SWALLOW AND WHITE STORK

Check what routes the White Stork and Barn Swallow follow on the way to their wintering grounds.

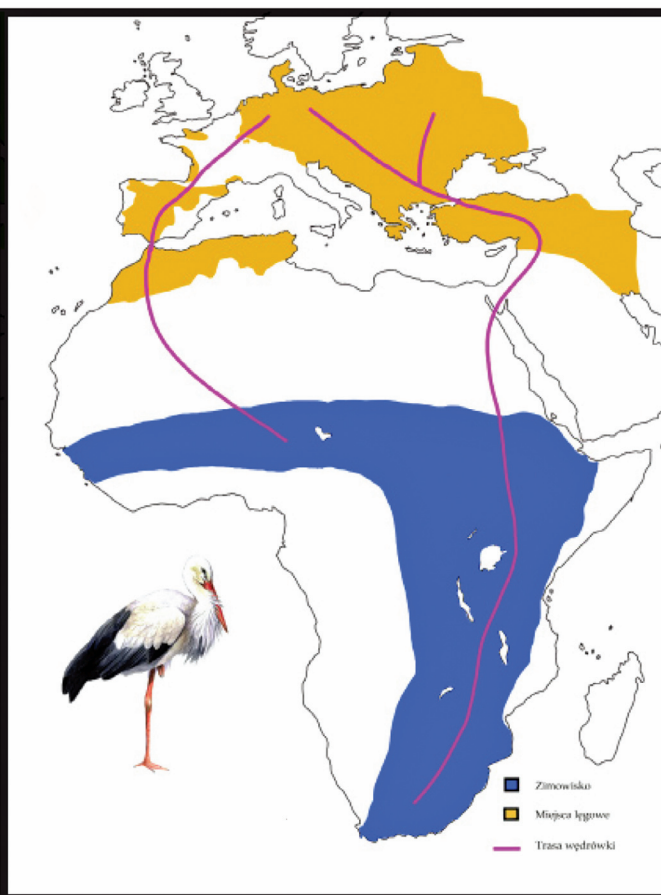
A teacher can prepare a TACTILE MAP (see instructions on page 1) with a clear route of a stork or a swallow. Remember that a tactile picture should not be very detailed, and the route should contrast with the rest of the picture.

Alternatively, a teacher may simply draw the stork's route or explain the stork's journey in theory.

You may enrich your story or the lesson with interesting facts such as: the maximum speed, the amount of days a stork needs to get from your country to Africa, possible stops on the way, etc.



Migration route of the Barn Swallow



Migration route of the White Stork

(MK)



WHITE STORK: THE TRAVELLER

Guidelines for teachers

- Help students to prepare a guide box for each country. If you find students are having difficulties, consider it as a homework assignment so that students have some time to find relevant information concerning each country.
- If students have to read the text, remember to print it in Braille or in a large font.

Here is a letter left by the Stork:

Dear kids!

The days are getting shorter and colder. It is becoming harder to find food. I heard from my cousin that when the summer ends here, spring begins in Africa, and it offers all my favourite treats. There is no other way - I have decided to set off. I will get to know other countries. Which ones? I don't know yet, but I know one thing - I'm not planning to travel near the sea. There is nothing better than using the thermal columns while flying. They push me high up and then let me slowly spread my wings and glide... until I get to the next thermal column. Ah! If only I had a travel guide, I would have more courage to begin the journey. Maybe you can help me to do it safely? I plan to be back in the spring.

My advantages as a traveller:

I am strong

I have huge wings

I can defend myself with my beak

I have been eating good food in Denmark, so I'm healthy and full of energy

I can travel long distances

What you will need

- Map of the Stork's journey
- PC or a laptop with an Internet connection
- Turkey and Egypt travel guides
- Travel agency brochures
- Chats with grown-ups
- Maybe your own experiences?

Tasks and questions

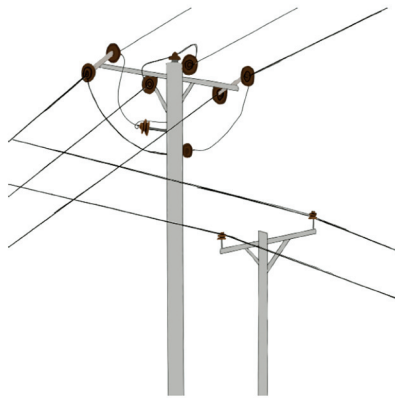
- 1 Talk with the children and find out if anyone has been in countries located along the Stork's route.
- 2 Try to find three stops on the Stork's journey on the map, e.g., in Turkey, Egypt and Zambia.
- 3 Make three groups, each representing one of the countries.
- 4 Each group makes a 'guide box,' including various information - photos, ethnic clothes, animals, plants, etc.
- 5 Warn the Stork about any possible dangers that it could face on the way.



DANGERS ALONG THE WAY

Prepare small cards with chosen dangers. You can write down just their names on the cards.

Present them to the students and start the discussion. It's important to emphasise what they can do to help birds.



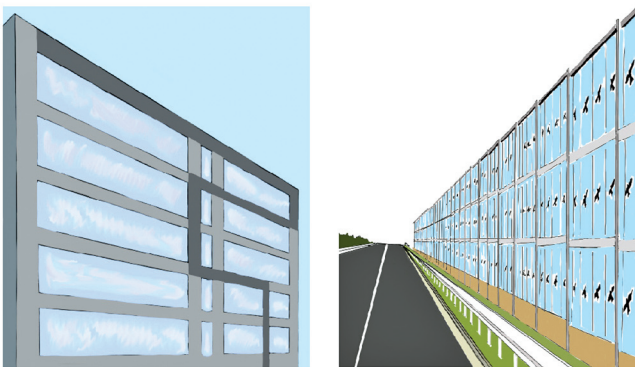
(MK)

ELECTRICITY POWER LINES



(MK)

HUNTERS



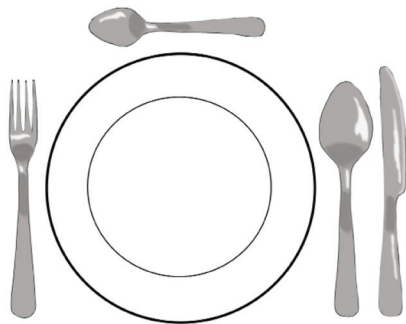
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WINDOW GLASS AND ROAD ACOUSTIC BARRIERS



(MK)

RAPIDLY CHANGING WEATHER CONDITIONS



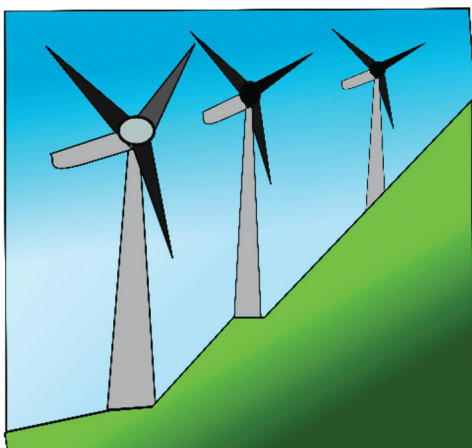
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NOT ENOUGH FOOD



(MK)

PREDATORS



(MK)

WIND FARMS



(PX)

REDUCING NUMBERS OF PLACES TO REST SAFELY



BIRD RECORD-BREAKERS

Guidelines for teachers

- You may bring calendars to help students answer the questions.

1. During autumn migration, birds travel long distances. Daily they travel:

- Barn Swallow: 100km
- Barn Swallow record-breaker: 300km

- White Stork: 200km
- White Stork record-breaker: 500km

How long does it take them to reach their destination in Africa if it is 6,000km away from their nest?

2. The journey to Africa takes a Swallow six weeks

If it sets off on Monday, on which day of the week will it arrive at its destination?

How many Wednesdays will there be during the flight?

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.

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AUTHORS:

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**Iwona Majcher
Katarzyna Rosińska
Ryta Suska-Wróbel**

COVER DESIGN AND GRAPHICS ON THE COVER:

Wiktor Tabak

ILLUSTRATIONS:

**Juan Varela (JV)
Marek Kołodziejczyk (MK)**

PHOTOGRAPHS:

**Bogdan Moczarski (BM)
Cezary Korkosz (CK)
Iwona Majcher (IM)
Jadwiga Moczarska (JM)
Karolina Kalinowska (KK)
Łukasz Zdyb (ŁZ)
Natalia Kann (NK)
Pixabay (px)**

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



