

8.7

Rediscover, describe, and draw birds

Main Author: Adithi Muralidhar

Contributing Author: Anand Krishnan

Reviewer: Subhojit Sen

Creative Commons Licence: CC BY-SA 4.0 International

8.7. Rediscover, describe, and draw birds

Introduction

Sometimes you see a colourful bird whiz past you, and you long to see it again. At other times, you wonder when the neighbourhood crow is going to stop cawing and leave you at peace. Birds are everywhere. They occupy almost all habitats and are a delight to watch! They sing, hunt, eat, fight, fly, swim, and display other behaviours that leave you perplexed. Birds always riddle you with their actions! You notice a pair of small birds screech their hearts out and take on a bird that is double their size. Why would they do that? Suddenly you notice the small birds were trying to protect their nearly invisible (camouflaged) eggs from the big bird. As you keep observing them, you will see a story unfold. Documenting their behaviour translates to honing several important skills such as: writing an accurate scientific description, maintaining logs, organising information, etc.

With increased globalisation, people are coming closer to each other more than ever. But we also seem to be severing our ties with nature. All of us seek solitude in nature. Watching and listening to birds will hopefully re-establish our fading connection to nature, which aids in physical and mental well being (Children & Nature Network and IUCN-CEC Report, 2012), and create an awareness of the diversity of living things.

So, let's do some bird-watching!

Materials: Notebook, pen, pencil, colours, etc. Binoculars, camera, and field guides (illustrated manuals for identifying natural objects) are optional.

References

- Baker, A. (2017). *Underestimating After-school STEM Is for the birds*. Retrieved from <https://blogs.scientificamerican.com/budding-scientist/underestimating-after-school-stem-is-for-the-birds/>
- Bonney, R., Cooper, C. B., Dickinson, J., Kelling, S., Phillips, T., Rosenberg, K. V., & Shirk, J. (2009). Citizen science: A developing tool for expanding science knowledge and scientific literacy. *BioScience*, 59(11), 977–984.
- Broda, H. W. (2007). *Schoolyard enhanced Learning: Using outdoors as an instructional tool K-8*. Portland, Maine: Stenhouse.
- Children & Nature Network and IUCN-CEC. (2012). *Children & Nature Worldwide: An exploration of children's experiences of the outdoors & nature with associated risks & benefits*.
- Chillag, A. (2018). *Birdwatching for peace of mind and better health*. CNN. Retrieved from <https://edition.cnn.com/2018/11/12/health/sw-birding-for-health/index.html>

- Dvornich, K., Petersen, D., & Clarkson, K. (2011). *Fostering outdoor observation skills: Preparing children for outdoor science and recreation*. Washington, DC: Association of Fish and Wildlife Agencies' North American Conservation Education Strategy.
- Jayadevan, A. (2018). How your field notes, dusty or new, can help science. *The Wire*. Retrieved from <https://thewire.in/environment/how-your-field-notes-dusty-or-new-can-help-science>
- Markandya, A., Taylor, T., Longo, A., Murty, M. N., Murty, S., & Dhavala, K. (2008). Counting the cost of vulture decline—an appraisal of the human health and other benefits of vultures in India. *Ecological Economics*, 67(2), 194-204. Doi: 10.1016/j.ecolecon.2008.04.020
- Monga, S. (2012). *Kidz birds in urban india*. Mumbai: Yuhina Eco-Media.
- Monga, S. (2008). *Young rangers*. India: Yuhina Eco-Media Venure/HSBC.
- Sekercioglu, C. H. (2006). Increasing awareness of avian ecological function. *Trends in Ecology and Evolution* 21(8), 464-471.
- Subramanya, S., & Radhamani, T. R. (1993). Pollination by birds and bats. *Current Science*, 65(3), 201-209.
- Vandervoort, F. S. (1989). Biology education: Asking the right questions. *High-school Biology: Today and tomorrow* (pp. 139-147). Washington, DC: National Academy Press.

This Learning Unit on observing birds, in its earlier version, featured in the Teacher Plus magazine, as a four-part series (August, October 2018, and January, February, 2019).

Student Handout #1

This Learning Unit invites you to keenly observe the birds in your neighbourhood and document their details.

Introduction to the bird-watching activity

Sometimes you see a colourful bird whiz past you, and you long to see it again. At other times, you wonder when the neighbourhood crow is going to stop cawing and leave you at peace. Birds are everywhere and occupy almost all habitats and are a delight to watch! They sing, hunt, eat, fight, fly, swim, and display other behaviours that leave you perplexed. As you keep observing them, you will see a story unfold. One can learn a lot from birds. For example, birds may serve as indicators of environmental change. Sometimes, they have served as inspirations for many human inventions and innovations. For instance, the design of the Japanese Shinkansen Bullet Train was inspired by the beak of a Kingfisher bird. And not to forget, birds also play a very important role in our ecosystem by being excellent pollinators, seed dispersers, predators to crop pests and scavenging on disease spreading animals like rats. Behavior observation is an old tool for scientists, and for all curious human beings. Animals and birds may reveal many secrets to those who are willing to observe patiently and keenly. So, let's do some bird-watching!

Basics and ethics of bird-watching

- Keep your distance from the birds when you observe them. If you think the bird is disturbed by your presence and it keeps flying away, then do not follow it.
- Do not harm the natural surroundings just to observe the bird better. For example, do not stamp over plants, or break twigs/branches to get a clear view of a bird.
- Stay on existing paths, footpath, or trails, and do not trample the fields, crops, or fragile habitats.
- Do not encroach (trespass) into private property while bird-watching. Always obtain permission from the land-owner before entering private lands.
- Do not be noisy.
- Do not feed the birds or play the calls of birds to bring them closer to you.
- Moving around may not necessarily mean you will see more birds. If you stand/sit in one place quietly and patiently, staying absolutely still, you can see many birds.
- Be extra careful about observing birds during the breeding season.
- Do not approach any nesting area or nest. Observe nests from a distance. Use a pair of binoculars or scope.
- Never handle the nest, eggs or chicks.
- It is generally considered unethical to click photographs of nests and chicks. If you intend to click photographs of nesting birds, do so from a safe distance.
- Potential predators of bird-chicks and eggs like crows, dogs and cats may follow you around while you are walking and observing birds. Please be careful so as to not lead them to nesting areas.
- If possible, wear dull coloured clothes while bird-watching. Avoid strong-odoured powders, creams, perfumes, lotions, etc.

Remember, bird watchers must always act in ways that do not endanger the birds and their surroundings.

Terms used to describe bird behaviour

Here are some of the behaviours that you may observe:

- Feeding: eating food or drinking water, or giving food/water to another bird. For eg: Adult bird feeding a chick.
- Flocking: birds grouping together, either during flying, or while looking for food.
- Flying: the act of staying in the air, by flapping wings or soaring.
- Foraging: the act of searching/looking around for food.
- Mating: the action of birds coming together to breed.
- Nesting: the act of building a nest, which is a structure to hold the eggs and chicks.
- Preening: the act of cleaning and trimming feathers by oneself or another bird.
- Bathing: birds immersing themselves in water to clean or cool themselves
- Roosting: a behaviour where birds settle in groups (or alone), at a particular area to rest/sleep.
- Singing or calling: communication between birds.
- Territorial display: the act of protecting a tree branch, a nesting site, or an area on the ground. This could also involve attacking/fighting another bird or animal.
- Walking/hopping/wading/swimming: movement on the ground/in the water.
- Courtship: Various forms of communication like songs, dances, plumage, etc., in an attempt to attract a mate.

Parts of a bird: Some terminology

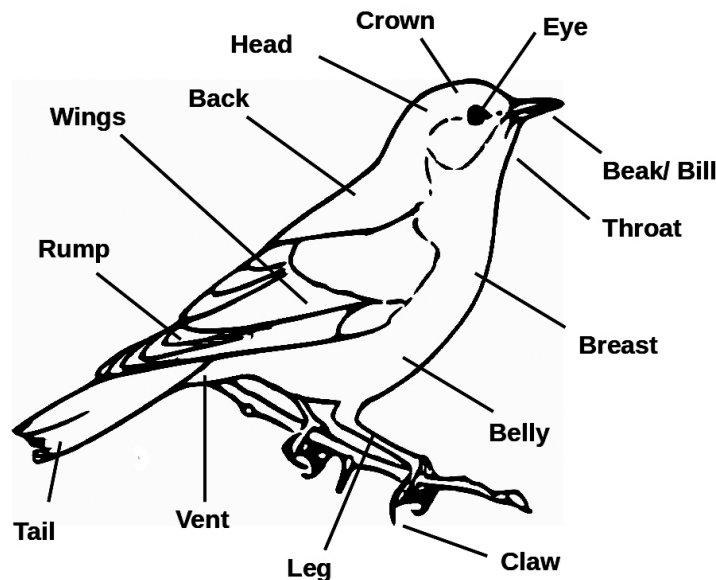


Figure 1 *Parts of a bird*

Adapted from: Pixabay (CC0 Creative Commons)

When you want to describe the bird, use the terms mentioned above for better description. For e.g.: The *bird's throat* was black in colour. It had a white *belly* and a red *vent*.

Student Handout #2



Task 1: What to do?

(Time: Ten minutes each, in the morning, noon, and evening, for four weeks: individual activity).

- Carefully go through the “Basics and ethics of bird-watching” [Student Handout #1]
- Choose a safe place in the school/near your home, where you notice bird activity.
- For ten minutes in the morning, noon, and evening, spend time observing one species of birds, from your “observation point”.
- Write the following header information in your notebook: day, date, time, weather, location, and for how long you carried out your observation activity.
- Observe the birds patiently and quietly. Write down everything the bird does.
- Refer to Student Handout #1 titled “Terms used to describe bird behaviour” and “Parts of a bird”. Try to use the terms in your descriptions and drawings.
- Draw the bird, as you see it, and label it. You can also colour it if you would like to. It is alright if your drawing is not beautiful. Focus on drawing what you see.
- If after one week, you are still confused how to document your observations, use the “Observation Guidelines” [Student Handout #3] to make your notes.

Tip: You are free to write the descriptions in your own words, and you can use drawings, illustrations, flowcharts, etc., to make detailed descriptions. Let us say you are observing a House crow and after few minutes, it flies away. Make a note of it and then continue to observe another crow. You are welcome to observe the birds for more than ten minutes also. Write down what you find interesting about the bird or its behaviour.



Task 2: What to do with your data?

(Time: 80-120 minutes, to be done four weeks after the task 1, group work, along with the teacher).

- a. Form a group with your friends who observed the same species. Discuss your observations.
- b. Use “Guiding questions for task 2” listed in this handout to compile your findings. For example, for each question listed in the “guiding questions”, list the observations from all observers.
- c. For each question, try to identify the similarities and dissimilarities in your observations across the group.
- d. Look for aspects that you would need to make more precise observations for. For example, is the House crow only black in colour? Or is it a combination of grey and black?

Tip: If you think you have less data/notes, then continue your observations for another one or two weeks. Then repeat task 2 with your friends.

Guiding questions for task 2

- a. Where did you usually sight the bird (grass, shrub, ground, trees)?
- b. Which time of the day did you most often sight the bird? When was it most active?
- c. What kind of perch (higher branch, lower branch, ground) did the bird prefer?
- d. Did the bird stay in the same spot for long or did it keep changing its location?
- e. What was the bird most often seen eating?
- f. Was the bird social (moves in a group), or usually seen alone?
- g. Were the birds always sighted in pairs (male/female or male/male or female/female or with a bird of another species)?

- h. Did the bird prefer to be near birds of its own kind (same species)?
- i. Did the bird prefer to be near birds of different species?
- j. Was the bird very vocal (makes a lot of calls/noise) or quiet?
- k. What were the biotic components (other members of the same species, other species of birds, other animals) that the bird interacted with.
- l. What were the abiotic components (water body, soil) that the bird interacted with?
- m. Did you see any nesting sites? How many of the birds were nesting?
- n. Did the silhouette of the bird always appear the same?
- o. What were the life forms (birds/animals/reptiles) that the bird seemed to fear?
- p. What were the life forms (birds/animals/reptiles) that the bird did not seem to fear?
- q. Did the birds fly away if human beings were close by?
- r. What was the most interesting observation you noted?
- s. What behaviour (foraging, preening) was seen the most often, when observing the bird?
- t. Did you see any roosting sites? How many of the birds were roosting?

Task 3: Refining your documentation

(Time: 80 minutes, to be done one/two weeks after task 2: group work, along with the teacher)

- a. Work towards refining your documentation. You can add mind maps, flowcharts, flash cards or present your observations in any visual form in addition to your original writing.
- b. If you have observed any peculiar or interesting behaviour of a bird, then write a short report on it, giving exact details.

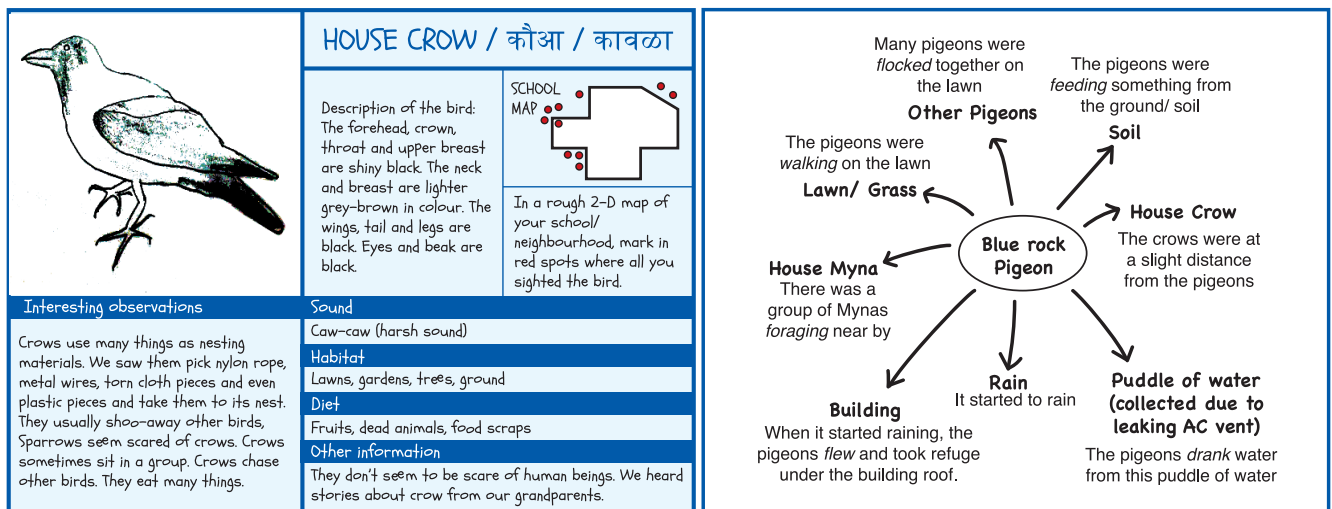


Figure 2 Templates: Example of a possible flash card (left); an interaction map of a blue rock pigeon (right)

Important

Your notes should be a reflection of what you observed over four weeks or more. It should not be copied from books or the Internet.

Try to use the new terms that have been introduced in Student Handout #1 (For example, see the italicised words in the above interaction map)

If you think that your data is not enough, continue the observations for a few more weeks.

Student Handout #3
Observation Guidelines (optional)

Write down “who, what, when and where” about the bird you observed.

What was the bird doing?	
Was the bird looking for food (foraging)? If so, where?	Was the bird perched (sitting) or flying?
Did you observe birds nesting? Caution: Never approach a nesting site. Observe from a distance.	Did the bird walk or hop? Do you think the bird could walk/hop backwards?
Did you see the bird swimming?	Was the bird staring at one place for a long time? If so, where?
How was the behaviour of the bird around the nest? Who was present near the nest? Male/s and/or female/s?	Was the bird cleaning itself (preening) or bathing?
Did the bird seem restless, nervous, calling loudly? If yes, why?	Did the bird take a dip or a dive in the water? How long did it stay under water?
Did you see the bird picking up things (twigs, cloth, plastic, wires, grains, worms, stones)?	Did the bird feed on anything? If so, what was it feeding on?
Do you think the bird was collecting nesting material? If so, what materials?	Did the birds show any signs of “territorial displays”?
Did the bird drink water? If yes, from where?	Was the bird resting in one place?
Did the bird ruffle its feathers?	Did the bird stand on one leg?
Did you observe any peculiar behaviour of the bird?	Was the bird continuously in one place?
Did you see the birds mating? (breeding)	Was the bird sleeping?
Did you see the bird urinate/ excrete waste? Do they do this often?	Did you see the bird fighting? If yes, with whom ? What was it doing to fight?
What did the bird look like?	
Describe what the bird looks like. Try and draw how the bird looks.	How many toes did the feet of the bird have? Draw the arrangement of the bird's toes.
What was the size of the bird?	What's the most prominent feature of the bird?
Do you think it was bigger/smaller than your palm?	What was the colour of the bird? What were the colours of the different parts?

Can you guess the height/weight of the bird?	What was the colour of the bird's eye?
Did the bird try to camouflage itself with its surroundings? If yes, how?	Did all the members of the same species look the same? If not, how were they different?
Describe and draw the shape of the bird's beak. What do you think might be its food?	Could you tell apart the male and the female of the same species? How?
Draw the feet of the bird. What is the shape and colour of the feet?	Did either member (male or female) of the species look more colourful than the other?
Who was the bird with?	How did the bird sound?
Was the bird alone or was it seen in a group? Give the group number/size.	Was the bird singing or calling? If yes, describe how it sounded.
Did the bird tend to move in a group (flocking)?	Was the bird continuously making calls?
Was the bird always seen in a pair (male and female, male and male, female and female, or with a bird of another species)?	Assign a mnemonic to the bird's call. (What would it sound like if you wrote it out in English/Hindi?). (Che-che-che, caw-caw, houp-houp)
Did the group comprise of the same species or different species? Describe the interactions within the group.	How was the bird's tone – melodious, sweet, harsh, loud, screechy?
Did the bird interact with or get chased by any other animals (e.g., insect, dog, reptile)?	Did the bird sing when perching, when flying, or both?
Were there any other animals or birds near the bird's nest (if observed)?	Did you find instances where you thought two or more birds were communicating with each other?
Were there any chicks (did you hear them) present?	Did the bird make more than one type of call?
Where was the bird seen?	When did you see the bird?
Describe or draw the immediate surroundings of the bird.	Mention the day, date, time, location, and duration of observation.
Was the bird easy to see or did it stay hidden?	Was the bird commonly seen during the day/night?
How long did it take for you to find the bird again?	Was the bird commonly seen through out the day?
How long did you watch the bird? Also mention if you observed the same specimen for the entire duration of observation.	Describe the weather. Was it cloudy/ sunny/ warm/ hot/ dry/ humid/ shade/ cold/ windy? What was the temperature like?

Where was the bird sighted: tree, ground, grass, shrub, waterbody, etc.?	Was the bird more easily seen during morning, afternoon, or evening?
What other signs (evidence) of the bird did you see?	
Did you find any discarded feathers ? Draw and colour the feather you found.	Did you see bird droppings ? (body waste)? Describe it.
Can you guess which body part the feather came from?	If so, what was the colour and texture of the bird's droppings?
Did you see any bird footprints ? If yes, can you guess if this was a land or water bird?	Did you see a nest ? If yes, what was the location of the nest?
Did you spot any other signs that indicated that a bird was there?	Did you see any dead specimen of a bird ? If so, how do you think it died ? Caution: Do not touch dead specimens with bare hands.
What did the bird do at the end of the day?	
Did you find your bird roosting ?	Did it roost alone or in a group?
Did it always roost in the same place/tree? If yes, which one?	If in a group, were the other birds of the same species or a different one?
Describe the bird's roosting behaviour.	Did they make a lot of noise or were they quiet?
Is the roosting site and the nesting site same for the bird?	Did the bird come to the roosting spot at the same time every day or at different times of the day?

Table 1

Note: Feel free to address any other aspects of birds as well. Direct your attention *not only* to the bird *but also* its immediate environment. The above questions are just meant to serve as pointers to initiate your bird observations.

Field Guides

- Ali, S. (2002). *The book of Indian birds* (13th Edition). Mumbai: BNHS.
- Grimmett, R., Inskipp, C., & Inskipp, T. (2011). *Birds of the Indian subcontinent* (2nd Edition). London: Oxford University Press & Christopher Helm.
- Kazmierczak, K., & Ber van Perlo (Illustrator) (2000). *A field guide to the birds of the Indian subcontinent* (1st Edition). London: Pica Press/Christopher Helm.
- Early Bird Pocket Guide by Nature Conservation Foundation (Multilingual).