



The *Teacher Plus* magazines of August 2018, October 2018 and January 2019 introduced the readers to a simple bird watching activity around which teachers and students can have discussions and make resources. This last and final article deals with how one can scale this activity in formal school systems and address queries that teachers may have during the implementation phase.

Scaling the activity

Class 6-7 (Age group 11-12)	Restricting observations to physical features of the birds. Introducing students to describing a bird by relative size, shape, colour, vocalizations, etc. Learning more about the relationship between birds and humans. (Ext. activities 1, 2, 5)
Class 8 (Age group 13-14)	Introducing new terminologies to study bird behaviour. Extending observation from physical features to behavioural observations. Observations over extended periods to gain better understanding of a species. (Ext. activities 1, 2, 3, 5)
Class 9-10 (Age group 14-16)	Introducing in-depth observations in bird behaviour. Getting them to observe patterns across habitats, seasons, etc. Designing their own studies with respect to birds. (Ext. activities 3, 4, 5, 6)



A fancy for flight

Adithi Muralidhar

If you feel your class is up to it, you can mix elements of the aforementioned categories and present them in a way you think will suitably challenge your students.

Extension activities

If your students are really keen on taking up this activity further, then you can suggest to them the following extended learning activities.

1. Students can be taught how to use and refer to field guides (a list of guides has been provided in part 3 of this series which appeared in the *Teacher Plus*, January 2019 issue), which can help them identify more birds in the area.
2. Students can create a repository or database of the birds in an area by documenting them on flash cards or posters. You can take copies of **Student handout #3** (Template for flash card given in part 3) and fill in the details of one species in each flash card.
3. Students can follow the same (species) bird for an entire year and make notes on seasonal variation in behaviour and anatomy (for example, changes in bird plumage during breeding).
4. Observe birds that have multiple calls/vocalizations and try to identify if the bird is mimicking the calls of other species of birds. For

example, Oriental Magpie Robin, a common bird across India, is known to mimic a range of bird calls.

5. Students can document cultural history and stories on birds by interviewing elders in their neighbourhood. This could also serve as the starting point to a preliminary ethno-ornithology study, the

relationship between humans and birds.

6. Students can also think of projects on birds they would like to take up on their own. Some examples: to check the efficacy of a scarecrow on birds in a farm; to observe and document birds using “tools”; to observe interactions between Asian Koel and House Crow, behaviour of birds during nesting season, etc.



Advantages of carrying out a bird watching activity in school

- The activity does not require students to have any specific pre-requisite domain or content knowledge. In fact, the activity can probably draw upon students' own experiences with birds.
- Even the teacher need not have in-depth content knowledge about birds (like bird-taxonomy, classifications, etc.) for this activity.
- The activity caters to multiple modes of expression. Students will write records, draw and orally communicate with each other.
- The activity does not use expensive equipment; only eyes and ears, pen and paper. However, a pair of binoculars will greatly enhance observation.
- This will be an outdoor learning experience which will involve teaching students to explore and discover their surroundings.
- This initial activity provides opportunities for many follow-up activities.

Limitations

- Identification and classification will be outside the scope of this study so as to not overwhelm the students and teachers.
- Observations will be limited given that no equipment is being used. However, this is an option that schools could consider.

Frequently Asked Questions for teachers

1. What if the student asks me the name of a bird I don't know?

It is alright to *not* know the name of the bird. Gently talk to the student about how India is home to more than a 1000 species of birds and it may be difficult to keep a tab of all their names. However, if you know the name of the bird (in regional/local language or other language) share that with your student. Alternatively, you can tell the student that the two of you can find the name of the bird together. Ask him/her to describe the bird in detail (giving an indication about size, shape, colour, beak). Point them to books that may help them identify the bird. But mainly tell them that it's fine to *not* know which bird they are following, at least initially. Rather, they should observe the behaviour of the bird and describe it in detail and then look it up in books. You can also approach a local expert or get in touch with the Homi Bhabha Centre for Science Education (HBCSE) if you have

any queries. Students can post their queries at <https://vp.hbcse.tifr.res.in/forums/forum/students-forum/> and teachers can post their queries at <https://vp.hbcse.tifr.res.in/forums/forum/vp/>

Here is an excerpt from a chapter titled "Biology Education: Asking the Right Questions" by Frances S. Vandervoort (1989, pg 139)¹, which may be relevant to your question:

"A few years ago, I attended a lecture by Victor Weisskopf² (1984), the distinguished physicist from the Massachusetts Institute of Technology. In this lecture, which focused on the critical state of science education, he described how, as an 8-year-old child in Vienna, he was walking with his father in the forest. He saw a bird and said, "Father, what is that bird's name?" His father chided him. "Do not ask that question, my son," he said. "The essential thing about that bird is not its name, but that it flies, that it has wings, that it lives!" In other words, do not trivialize this wonderful animal by being concerned only about its name." (p. 139).

2. What if students say they are unable to observe details because they are too far?

Birds move! This is part of their beauty, but one can surely make some observations! Tell them that even in the olden times, when binoculars and telescopes were not available, people observed with their naked eye. This is one way to train your eyes to become keen observation tools. Encourage your students to pick common birds that are easy to observe, but if a student takes up the challenge of a far away bird or an uncommon bird, encourage them to observe whatever they can. They may have to extend their observation time to get information about it. Even a few details are important.

3. Is there some way I can "teach" them to observe carefully?

Observation skills develop over time and with practice. You can try a simple exercise with them prior to their task. Ask all students to observe the same bird for five minutes quietly. Then pool in your observations (physical and behavioural traits of the bird) and write them on the blackboard. Now use **Student Handout #3** (published in *Teacher Plus*, January 2019) to direct their attention to some aspects of the bird and repeat the exercise.

4. What if students are not making beautiful drawings?

Most naturalists start with hurriedly scribbling notes and keep a rough field diary of sketches, even birds drawn as stick figures! The important thing here is

not the beauty of the drawing, but the message it conveys. Tell your students that the drawings are to help convey a message and that the students need to convey their impressions of what they see. For this purpose, any drawing is beautiful! Also let them know that "more beautiful" drawings do not necessarily mean more marks/points.

5. What if students have some doubts about a bird's behaviour, which I am not able to explain?

This is fine; you can convert this into a learning opportunity. Ask them to refer books, Internet and other sources for gaining information that may help them resolve their doubts. In the meantime, you too can look up information from various reliable sources and guide students accordingly. You are most welcome to get in touch with HBCSE in case you have such queries. Alternatively, the school can identify experts and set up an informal "Ask an Expert" platform where students' questions are regularly sent to practitioners and experts in the concerned area. Students can also be encouraged to post their queries at <https://vp.hbcse.tifr.res.in/forums/forum/students-forum/>.

6. Can you suggest some ways to get children excited about birds and bird watching?

You can perhaps look up some relevant pictures on



Photo: Madhurima A. R



Verditer Flycatcher –
common in the Himalayas

the Internet and show them some interesting bird species across the world and India. You can show them pictures of India's most colourful birds or make them listen to India's most vocal birds and their songs. Alternatively, choose case studies (like that of the Vulture or Sparrow, mentioned in the first article of this series published in *Teacher Plus*, October 2018) and narrate stories about some endangered birds and conservation efforts. There are also several games one can make around birds like bird bingo, quiz, puzzles, etc., which can fuel some initial excitement among students to work on birds. Refer to the listed web resources (published in *Teacher Plus*, January 2019).

7. What if my students want to take photographs of the birds they observe?

This is fine, but ensure that you *do not* make it mandatory for students to take photographs. Not all students may have the equipment to take photographs. Also remind students that they should not get carried away clicking photographs; the focus should remain on the task given to them. Additionally, publicly acknowledge, applaud, encourage and give positive feedback to students

who use basic tools to do their task. Students should *not* feel that they need expensive equipment to carry out this activity.

8. Is there some way I can informally check if my students' observation skills have improved?

A preliminary way to check this could be by asking students to repeat the trial task (mentioned in question 3 of the FAQ section), after 3-4 weeks. Ask all students to observe the same bird for five minutes quietly. Compare their original notes and current notes and see if they are able to provide richer descriptions of the bird now.

Can you suggest more activities around bird watching?

For starters, you can collate a few common bird species (Red-whiskered Bulbul, Red-vented Bulbul, Common Tailor Bird, Oriental Magpie Robin) and ask students to identify the different body parts (use *Parts of a bird* published in *Teacher Plus*, January 2019 as a guide). You can quiz them by showing a bird picture. Additionally, collate a few videos of common birds from the Internet and let the class see the video and make notes. Ask students to distinguish between two similar looking birds (like Black Drongo and Ashy Drongo).

Note: The author encourages you to send your feedback on your bird watching activities and is looking forward to reading your experiences.

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This is the final article of a four-part series on a simple learning unit on observing birds, developed as part of the Vigyan Pratibha Project. The learning unit is constantly updated based on feedback received from students, teachers and experts from the field. For updated information on this activity, visit <https://vp.hbcse.tifr.res.in/>.

References

1. Vandervoort, F. S. (1989). Biology education: Asking the right questions. In Rosen WG (Ed.), *High-School Biology Today and Tomorrow: Papers Presented at a Conference*. National Research Council (US) Committee on High-School Biology Education. Washington (DC): National Academies Press.
2. Weisskopf, V. 1984. Keynote Address. Annual Symposium for Science and Mathematics Teachers, May 14, 1984, University of Chicago.

The author is a Scientific Officer at the Homi Bhabha Centre for Science Education, TIFR, Mumbai. She can be reached at <adithi@hbcse.tifr.res.in>.