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Handbook *for* Bird Educators

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Handbook for Bird Educators
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Introducing
Children to Birds
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“I sincerely believe that for the child, and for the parent seeking to guide him, it is not half so important to know as to feel. If facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are the fertile soil in which the seeds must grow. The years of early childhood are the time to prepare the soil. Once the emotions have been aroused - a sense of the beautiful, the excitement of the new and unknown, a feeling of sympathy, pity, admiration or love - then we wish for knowledge about the object of our emotional response. Once found, it has lasting meaning.”

— Rachel Carson



About this Handbook

Are you an amateur birdwatcher who would like to spread the joy of birding to others? Are you a teacher or facilitator who wishes to stimulate curiosity and interest about the natural world in her children, but doesn't know where to start? Do you feel limited by your lack of knowledge about birds, or by your inexperience in connecting with children? Have you already conducted awareness sessions with children, as a volunteer or professional nature educator but would like to improve your skills? Are you a parent wishing to pass on your love for birds to your children and friends? If you identify with any of the descriptions above, this Handbook will have something for you.

Many of us are already engaged in nature education, some in our individual capacity, purely out of interest; and others as part of our roles in an organization or group that deals with wildlife, conservation, or environmental education. This Handbook is aimed largely at those who wish to spread their passion for birds and nature to a larger audience. For this reason, this Handbook largely talks about ideas and activities that can be carried out by one or a few educators, over short durations of time, and at low or no cost. Hence we do not talk specifically about overnight camps, for example, although many of the ideas presented here can be adapted for that situation.



This Handbook is divided into the following chapters:

Chapter 1 is a brief introduction to the world of birds, and provides a glimpse into their adaptations related to habitat and food, and their behaviours of breeding and migration that make birdwatching a fascinating hobby. Some common families of birds are introduced and a list of resources given which may be useful to the beginner. If you already know a lot about birds, you may choose to skip this chapter.

Chapter 2 provides details of different activities that can be used to introduce children to birds: from bird walks and presentations to creative activities and games. Tips and tricks, and dos and don'ts are discussed, and you can pick and choose elements to create your own unique education programme. Many of the ideas and approaches are relevant for any beginner, child or adult alike.

Chapter 3 introduces evaluation and feedback techniques, which are important for the effectiveness of your work. Different types of formal and informal methods are presented and discussed, and a few examples of surveys are included for reference.

Chapter 4 talks about some aspects of working with children, including how to get started, tips on language and communication, safety and behavioural guidelines, and working with special audiences. We also discuss follow-up activities, that can help strengthen what children have learnt, and allow older children to deepen their interest in birds.

Early Bird (early-bird.in) is a non-profit effort to develop content, provide training, and conduct outreach related to promoting bird-related knowledge and awareness among children and young people. The Early Bird team conducts workshops for amateur birdwatchers (called *How to be a birding buddy*) as well as introductory workshops on birds, aimed at school teachers. These workshops focus on equipping participants with the skills, knowledge and materials to be able to engage with children who are new to birds, and create an excitement and interest in them about the natural world. This Handbook is a compilation of techniques, ideas and approaches that can be used to introduce children to birds, and is aimed at anyone interested in spreading the joy and wonder of the endlessly fascinating world of birds.

Why introduce children to birds and nature?

Children have an innate affinity to nature. Unfortunately, this connection is often lost while growing up. If nurtured, however, a child's association with nature can last a lifetime and lead to several physical and emotional benefits.

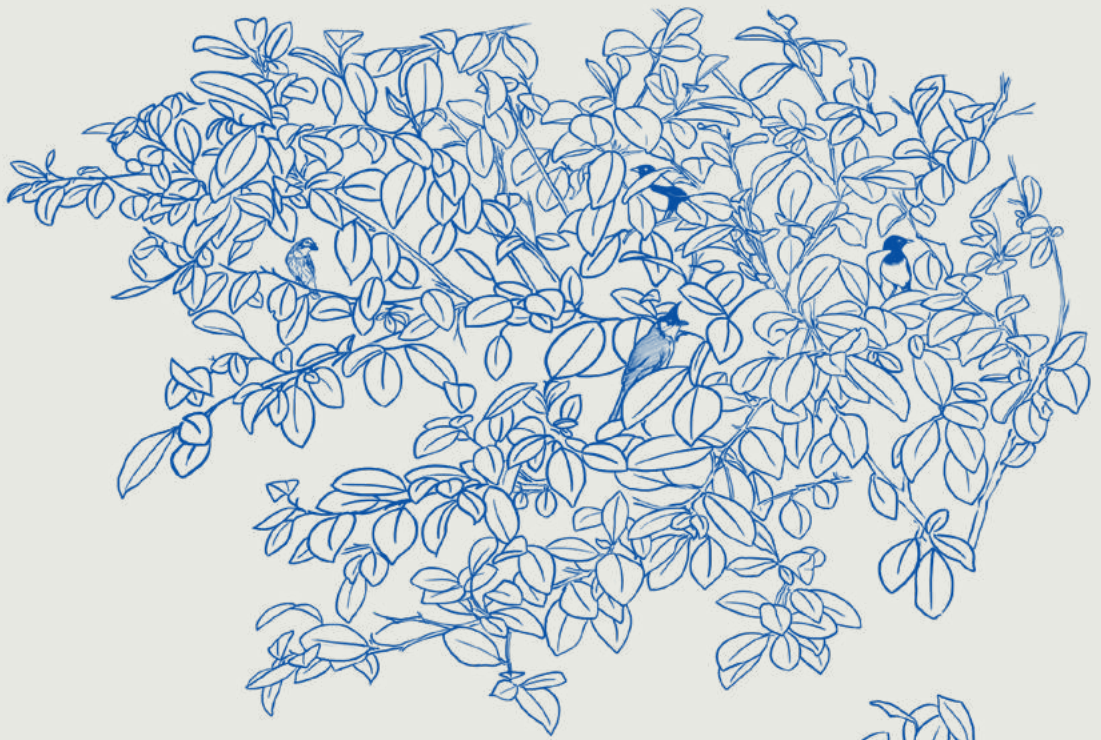
There is a growing body of research indicating that direct exposure to nature is essential for healthy childhood development and for the physical and emotional health of children and adults. The lack of nature exposure that is an alarming aspect of modern life has been described as resulting in what has been called 'nature deficit disorder', which is linked to various childhood trends like a rise in obesity, depression and attention disorders.¹

There are several reasons why birds are an appropriate starting point for one's nature appreciation journey. Most people think of wildlife as something that is out there in the forests and that viewing it requires travel to far-off wildlife sanctuaries or other exotic places. However, 'wildlife' includes not just

tigers and leopards, but also insects, reptiles and birds. These are everywhere and all around us, even in cities! Watching birds is an easy way to get children outdoors, whether it is to a neighbourhood lake or a park, or just in the street outside their home. Birds provide a window to nature: they connect us to the natural world and remind us that we are part of the tapestry of life on earth.

Birds also excite our curiosity and our imagination with their beautiful colours and their enchanting songs. Flight has fascinated human beings for centuries, and watching majestic birds of prey soaring in the sky makes us wonder what it would be like to be able to fly. Many birds undertake heroic feats of migration annually, but even their everyday behaviours can provide an endless source of enjoyment and inspiration to us all. Decades of ornithological research has revealed a lot about the behaviour and ecology of birds, but much remains unexplored and unknown. Thus, an appreciation of birds is a hobby that never gets boring as there is always something new to learn!

¹ *Last Child in the Woods*. Richard Louv, 2005. Algonquin Books (division of Workman)



*“Birdwatching is your lifetime ticket
to the theatre of nature”
— Unknown*

Watching birds also teaches children valuable skills like observation and patience, and improves focus and attention. An interest in birds and nature is often helpful for people struggling to overcome mental health issues. Indeed, when we look at the five ways to mental wellbeing, as documented by The New Economics Foundation (UK) — to connect, to take notice, to give, to keep learning and to be active — we can see that a hobby like birdwatching, which gets people outdoors and observing, fulfils all of these.²

² *Bird Therapy*. Joe Harkness, 2019. Unbound

How to introduce children to birds and nature

Once it is clear why we must introduce children to nature, the next question is how to go about it. Unstructured and unsupervised time spent exploring the outdoors is valuable; but so is guidance and mentorship. Nature educators agree on the pivotal role played by adults in this context, an insight confirmed by studies across the world. The adult could be a parent, teacher or anyone who can be a mentor for the child.

One of the motivations of many educators to introduce children to birds is for their work to ultimately lead to conservation. We know that in this age of climate change and shrinking of natural habitats and wild spaces, many species

“If we want children to flourish, to become truly empowered, then let us allow them to love the earth before we ask them to save it.”

— David Sobel

are declining and facing extinction, and birds are no different. Sensitizing young people to this is an imperative if we are to arrest and reverse this worldwide trend. However, a note of caution is appropriate here.



When working with young children, it may be counterproductive to focus on the problems faced by humanity and the natural world. An emphasis on issues like climate change or species extinction may overwhelm children younger than say 7 or 8 years old, as they usually do not have the agency to actually *do* something about these problems.

For younger children, a focus on the joy of birds and nature is a better way to start.

For younger children, a focus on the **joy** of birds and nature is a better way to start. Here are five pathways to nature connection that are useful to keep in mind³:

Contact – The act of engaging with nature through the senses for pleasure, e.g. listening to birdsong, smelling wild flowers, touching tree bark.

Beauty – Engagement with the aesthetic qualities of nature, e.g. appreciating natural scenery or engaging with nature through creative activities.

Meaning – Using nature or natural symbolism (e.g. metaphors used in daily language) to represent an idea, thinking about the signs of nature, e.g. seasonal fruiting and flowering of trees.

Emotion – An emotional bond with, and love for nature, e.g. talking about, and reflecting on your feelings about nature.

Compassion – Extending the self to include nature, leading to a moral and ethical concern for nature, e.g. making ethical product choices, being concerned with animal welfare.

³ findingnature.org.uk/2017/05/10/beyond-knowing-nature/

The Nature Classrooms⁴ initiative has the following suggestions for age-appropriate approaches to nature education for primary school children, summarised in the table below. This can be used as a guide by nature educators to design different engagements depending on the age group of children they are interacting with.

Nature Learning Framework

Age group

Goals

4-6 years
(UKG + Preschool)

To develop and create opportunities for children to experience wonder, love, curiosity and fun in nature

6-8 years
(Standard 1-3)

To provide opportunities for nature learning and engagement, develop and facilitate observation skills and encourage emotional bonds, asking simple questions and making comparisons between different phenomena in nature

9-10 years
(Standard 4-5)

To help students make connections, develop skills of compare/contrast reasoning, asking and answering simple 'why' questions, deeper learning about nature and engage with family/community and cultural experiences

⁴ ncf-india.org/education-and-public-engagement/a-nature-learning-framework-for-schools



Approach

Using play, stories, songs, pictures, enactments, art/craft and immersion/exposure in nature and local experiences

Using experiential and sensorial activities, fascinating facts, stories, teacher-led demos and experiments, class discussions, and sharing personal anecdotes about nature

Using audiovisual material, fascinating facts/processes (“Did You Know?”), conversations and discussions, independent and group projects, local case studies, stories, interviews, and local action

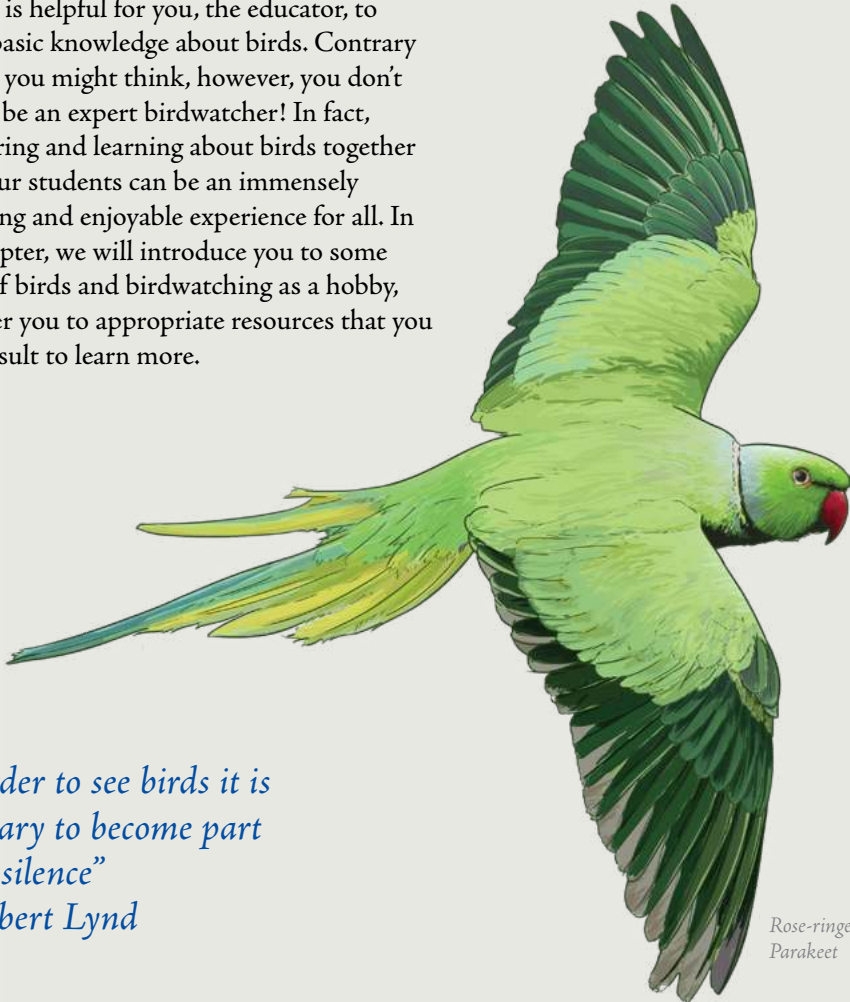
For older children (perhaps 10 and older), the educator can encourage critical thinking and make connections with the current state of the environment. They can also be directed towards projects and actions that address some of the problems at a local level, for example, helping to create a nice habitat for birds on the school campus. You can find examples of such projects in the last chapter.



Chapter 1

Learning about Birds

In order to be able to introduce children to birds, it is helpful for you, the educator, to have a basic knowledge about birds. Contrary to what you might think, however, you don't need to be an expert birdwatcher! In fact, discovering and learning about birds together with your students can be an immensely rewarding and enjoyable experience for all. In this chapter, we will introduce you to some basics of birds and birdwatching as a hobby, and refer you to appropriate resources that you can consult to learn more.



*Rose-ringed
Parakeet*

*“In order to see birds it is
necessary to become part
of the silence”
— Robert Lynd*

Getting Started

India is incredibly rich in bird life, with around 13% of the world's bird species being found here. This abundance is thanks to the remarkable variety of habitats and climatic conditions that occur in our country. From the highest mountains to deep oceans, from deserts and grasslands to dense tropical rainforests, each of these diverse habitats is host to different kinds of bird life. However, to see and enjoy birds one need not travel very far, as there are invariably birds to be found no matter where we live, even in the middle of crowded cities. The ubiquity of birds is one of the reasons why birdwatching is a very popular hobby, enjoyed by millions of people worldwide. To get started with this hobby you don't need much equipment, although a pair of binoculars can greatly enhance the experience. All you need is to attune your eyes and ears to the avian sights and sounds around you, and a lot of patience and curiosity to decipher the secret life of birds!

When beginning this journey of enjoying birds, many people start with bird identification and unfortunately often don't make the effort to learn more about birds beyond their name. But there is so much more to learn and understand - observing bird behaviour and natural history, the connections of birds to culture and art, and creative and hands-on activities related to birds. It is not

“You can know the name of a bird in all the languages of the world, but when you're finished, you'll know absolutely nothing whatever about the bird... So let's look at the bird and see what it's doing — that's what counts. I learned very early the difference between knowing the name of something and knowing something.”

— Richard Feynman

necessary to know the names of birds to enjoy these. In fact a focus on identification can often discourage beginner birders, and make the activity overwhelming and confusing, rather than being a source of joy.

As a bird educator, it is very useful to be familiar with the common birds of India, their natural history, and any cultural references that may particularly resonate with those new to birds. A broad familiarity with these aspects will allow you to be flexible in your education work, adjusting what you talk about depending on what your audience seems most interested in. For example, if a child asks you about the intelligence of crows, you might recall the

Panchatantra story about the crow and the pitcher of water (incidentally, recent scientific research on crow problem-solving abilities tells a similar story).

Once a beginner gets interested in watching birds and becomes curious about their lives, learning the names of birds and learning to identify them will come naturally as a second step. Indeed, it is also true that we are able to relate and connect better to animals when we know their names and are able to assign a unique identity to them. Then a bulbul with its own set of characteristics is distinct from a robin, rather than both being lumped together into a single overarching label of 'bird'.

Natural History

Understanding the natural history of birds can go a long way in increasing one's enjoyment and understanding of the avian world. The connections between birds and their habitats, and their behaviours and adaptations to find food, rear young and thrive in their chosen environment is what makes natural history fascinating.

Biogeography & Habitat are perhaps the most important factors that influence the evolution of different families and species of birds. India is lucky to have diverse habitats - from high mountains to oceans and coastal areas, from deserts to fertile plains and dense forests. These different habitats host different sets of species. Some birds can be called habitat generalists as they are adapted to a range of habitats, but many birds prefer specific habitats and thrive in those environments alone. For example, the birds seen in dense forests are very different from those in the desert, and



from the birds that occupy water bodies and urban habitats. There can be further specialisation as well. For example, among waterbirds, some species prefer deep water while others prefer shallow water, and yet others like marshy, swampy areas.

The diversity of species in India is also linked to its location at the intersection of several important biogeographical realms. Thus we have a number of regions which are biodiversity hotspots - like the Andaman & Nicobar Islands, the Western Ghats, the eastern Himalayas and the forests in northeast India. These contain several species found nowhere else in the world (referred to as 'endemics'). Different geographical regions also host different species of birds. For example, a forest in the Assam plains will contain very different species compared to a forest in Karnataka. If this seems all too confusing, don't despair! The best place to start observing birds is often your own backyard, where you will become familiar with the common birds of your area.

Food Birds feed on a wide variety of food, from bees and insects to berries and fruit, from fish and frogs to rotting flesh, reptiles and smaller birds, from seeds, grains and nectar to shoots of aquatic plants. As we would expect, a bird's diet is closely related to its preferred habitat. The shape of a bird's bill also gives us clues about its diet, as it is adapted to the kind of food it eats. Seed-



Barn
Swallow

eating birds have thick, conical bills while insectivores usually have thin bills. Those ducks that feed on the water surface generally have broad, flat bills which help to filter plankton and small organisms that they feed on, while birds of prey have sharp, hooked bills to tear into flesh. Crows and mynas are omnivores and their bills are suited for a variety of foods. Although each species has its own preferred set of food, usually birds feed their young a more protein-rich diet, which is required for the rapid growth of chicks. Thus, fruit-eating birds like bulbuls feed insects to their young. Through their feeding behaviour, birds perform a number of important ecological functions such as pest control (insectivores and birds of prey), seed dispersal



(frugivores), pollination (nectar-feeding birds) and scavenging (carrion-feeders).

Breeding of birds involves a number of fascinating behaviours. In some species, males establish a territory and try to attract a partner. In many birds, the male is brightly coloured (or takes on brighter colours in the breeding season, referred to as 'breeding plumage') while the females are relatively dull in colour. The reason for this is that it is the female who lays the eggs and performs much of the incubation duties, and therefore has a greater need for camouflage. Sometimes the breeding roles are reversed, and in such species, colours may be reversed too (as in the Greater Painted-Snipe). Courtship in different species takes on different forms: some birds don extravagant colours and plumes, some have rituals like dancing and display of their feathers, some offer gifts like berries or insects, while others have a repertoire of songs to impress their partner. Nest building itself is part of the courtship ritual in some species like Baya Weavers,

where males compete for the attention of the female by constructing elaborate nests out of grass. Several ground birds don't build nests at all but lay their eggs in a small depression in soil or pebbles.

After a period of incubation (around 2 weeks for most birds), the eggs hatch and the nestlings are looked after by the parents until they are ready to survive on their own. In some (mostly ground-nesting) birds (called precocial species), chicks hatch fully feathered and with eyes open, and they leave the nest almost immediately. By contrast, other species (called altricial) have chicks that hatch blind and naked and remain in the nest for a few further weeks until they are able to leave. Different species breed at different times of the year to optimize the availability of food for the offspring. Thus in India, many birds breed just before the monsoon months, so that insects are available in plenty when the young emerge.

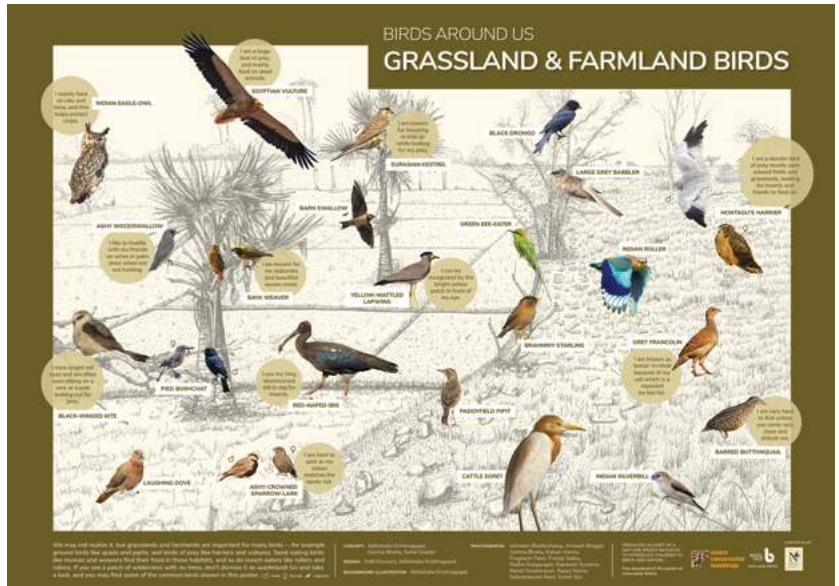


Bar-headed Goose

Migration is a feat that many species of birds undertake twice a year. There are many long-distance migrants, which visit the Indian subcontinent in the winter every year from colder places in central Asia and Europe. These include waterfowl like ducks and geese which flock to our inland lakes and waterbodies, dozens of species of shorebirds which visit our coastlines, and also smaller birds like wagtails, warblers and starlings. Several birds also migrate within the country, from the Himalaya down to the plains or from central India to the south in the winter months. In all cases, migration is driven by climatic conditions and the search for favourable habitats and food sources. Birds visiting the Indian plains in winter do not breed here but return to their breeding grounds in March-April once the harsh winter there is over. Scientists are yet to fully unravel all the secrets of how birds navigate over such long distances and in many cases, return to the exact same patch year after year. It is generally understood that they use multiple cues, including landmarks like mountains, rivers and coastlines, and navigate by the sun (during the day), the stars and moon (at night), and the magnetic field of the earth!

BIRD POSTERS

This is one of a set of 5 posters of birds found in different habitats. They are meant for classroom display and can be freely downloaded from Early Bird's website.



BIRD MATCHING GAME

This game provides a simple illustration of the fact that birds' bills are adapted to the food they eat.

MATCH THE BILL WITH THE FOOD!

















<p>1  Nectar feeding</p> <p>2  Raptor-like</p> <p>3  Grain eating</p> <p>4  Probing</p>	<p>5  Generalist</p> <p>6  Chiseling</p> <p>7  Fruit eating</p> <p>8  Aerial fishing</p>	<p>a   e</p> <p>b   f</p> <p>c   g</p> <p>d   h</p>
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Illustration: L. Shyamal/Wikimedia *Illustration: Early Bird flashcards*

Bird Groups

Like other animals, birds too are classified into orders, families, genera and species. This classification is referred to as taxonomy. Each species (the word is both singular and plural), has a unique scientific name, consisting of two parts: the genus and the species. For example, the House Crow is called *Corvus splendens*, indicating that this is the *splendens* species of the genus *Corvus*, which also contains its cousin, the Large-billed Crow, *Corvus macrorhynchos*. However, a knowledge of scientific names is by no means essential, and familiarity with the common names (in this case, House Crow and Large-billed Crow) is enough for most amateur birders. Closely related genera (the plural of genus) are grouped into families (for crows, it is the family Corvidae), and families are in turn grouped into Orders (Corvidae falls in the Order Passeriformes, or perching birds).

In this section we will introduce you to some of the major groups of common birds in India, which will hopefully help you to broaden your understanding of bird taxonomy. Different groups of birds tend to have different body structure, size, shape and behaviour, all of which provide important pointers for species identification.

Below is a legend for the following pages, showing the kind of food that is prominent in the diet of that bird family.



Animals. Land vertebrates, including reptiles, small mammals, birds.



Plants. Soft plant parts, such as leaves; sometimes roots.



Omnivore. Varied, including garbage, dead animals, grain and fruits.



Fish/ Aquatic animals like snails, frogs.



Seeds. Grain of different kinds.



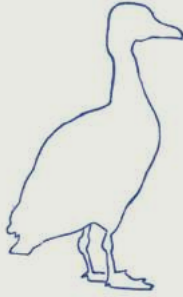
Fruit. Seeds may either pass through the gut or be regurgitated.



Insects and other invertebrates.



Nectar sipped directly from flowers.



Ducks and geese migrate in flocks, sometimes reaching great heights. Bar-headed Geese have been recorded at heights of more than 7000m!

Ducks & Geese



A diverse group of web-footed waterbirds that are mostly seen around inland lakes and ponds. Most of the ducks in our region are migratory and can be seen only in the winter months, but we have several beautiful resident species too. Males and females look different in most species.



Some species take on colourful plumages during the breeding season (Cattle Egrets grow orange plumes on the head and Pond-Herons get a maroon back).

Egrets & Herons



Medium- to large-sized waterbirds with long legs and necks, and a sharp dagger-like bill. Most egrets are completely white, while herons are more colourful. They feed in shallow waters and marshy areas.



Darters are also called 'snakebird' because of their S-shaped neck, which is seen sticking out of the water when the birds are swimming partially submerged.

Cormorants & Darters



Completely black waterbirds with webbed feet. They are expert swimmers and divers. They are often seen perched at the water's edge or on an exposed rock with wings outstretched. In many languages, their name translates to 'water crow'.

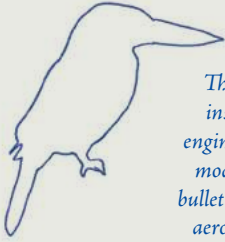


The record for the longest nonstop flight is held by a Bar-tailed Godwit, which flew from Alaska to New Zealand (a distance of nearly 12,000 km) in 9 days!

Waders



A group of shorebirds that forage in mud and marshy areas for food. Most have long legs and some have long curved bills. Many migratory species like sandpipers, plovers, and stints visit our coasts and inland wetlands each winter.



The kingfisher's bill inspired a Japanese engineer to make design modifications to their bullet train to improve its aerodynamic features.

Kingfishers



Brightly coloured birds with a large head, short legs and a large, sharp and strong bill. Most are seen only near water bodies but some feed on insects and reptiles in addition to fish, and these can be seen far away from water as well.



Males and females look alike, but the female is slightly larger than the male. This size difference, with females being larger, is a common feature among birds of prey.

Kites



Our most common birds of prey (also called 'raptors'), and are seen in cities and towns across India. They are scavengers and can be found swooping and diving wherever there is food to be found.



Owls can rotate their head nearly all the way back. Contrary to popular belief, they can see very well during the day too.

Owls



Birds of prey that are mostly active at night (i.e., they are nocturnal), though some are active during the day too. They have excellent eyesight and hearing, and a practically noiseless flight, which makes them formidable hunters of rodents, snakes and even other birds.



Pigeons can suck water through their bills like a straw, unlike most other birds, which need to tilt their heads back to swallow.

Pigeons & Doves



Stout birds with short necks and short legs. They are often seen walking and feeding on the ground, and take to flight with an explosive flutter of wings when disturbed. They have soft cooing calls. They feed on seeds and grains.



Parakeets are often illegally kept as cage birds in India, perhaps due to their ability to mimic human speech when trained.

Parakeets



Large-headed birds with a strong, hooked bill, short neck and very long tail. They are primarily green in colour and flocks of them are often seen flying at dawn and dusk, with a shrill screaming call. Males and females look slightly different in many species.



Eggs laid by females of some cuckoos are similar in colour and pattern to that of the host species, to fool the foster parents.

Koels & other Cuckoos



Medium to large birds with long tails. Many of them are brood parasites, laying their eggs in the nest of another species, which then brings up the young as its own offspring. Their repetitive melodious calls are common in the breeding season.



They can eat several times their body weight in berries every day, and are partial to fruiting ficus (fig) trees like banyan and peepal.

Barbets



Plump birds with heavy beaks that can be seen hopping around in the tree canopy. They are mostly green with patches of bright colours, and they blend into the foliage of trees. They nest in tree hollows which they excavate, like woodpeckers.



They catch bees and wasps in flight, and remove the sting by repeatedly biting the insect against a hard surface like a branch.

Bee-eaters



Slender birds with long, downcurved bills, often seen perched in small groups on bare branches or overhead wires, making graceful sallies to catch insects. They have trilling calls uttered constantly while in flight.



Drongos are very bold and often attack larger birds that enter their territory. For this reason, other small birds like to build their nests near a drongo's nest, for protection.

Drongos



Medium-sized, largely black birds with long tails that are usually forked. They perch upright on tree branches and wires, and are skilled at catching insects in flight. Most drongos are mimics and can imitate the calls of other species.



They have been known to use tools and recognize human faces. Perhaps that's the reason that in some cultures, crows are said to represent our ancestors.

Crows



Large black birds known for their intelligence. They are common around human habitation and around garbage dumps in cities as they are omnivores and scavengers.



There are around 140 species of bulbuls in the world, spread between Africa and southern Asia.

Bulbuls



Medium-sized birds with short bills and cheerful bubbling calls. Some of them have a prominent crest. They live in groups and are usually seen in shrubs and trees around gardens in towns and cities.



Feeding groups often have a designated 'sentinel' who keeps a watch and raises an alarm at the slightest sign of danger.

Babblers



A diverse family of birds that are usually shy and skulking and live in small groups. They feed on the ground and retreat to the safety of a bush when threatened. They prefer scrubby or forest habitats and some species may be seen around cities.



Migratory species, like Rosy Starlings, are known to gather in huge flocks in spectacular flight formations called murmurations.

Mynas & Starlings



Medium-sized noisy birds that have a sleek, smart appearance, a relatively upright stance and a rather jaunty walk. They usually feed and roost in flocks and make a variety of squawking, squealing and chattering sounds. They are omnivores.



Sunbirds are often confused for hummingbirds as they exhibit some of the same behaviours, but hummingbirds are found only in North and South America.

Sunbirds



Small birds with long, thin, curved bills which they dip into flowers to feed on nectar. Males are brightly coloured while females are mostly brown and yellow.



*The scientific name of the White-browed Wagtail (*Motacilla maderaspatensis*) is derived from the city of Chennai (then Madras).*

Wagtails



Slender birds found near wetlands or in open habitats. They feed on insects and are often seen walking on the ground with tail wagging up and down (or sideways in one species, the Forest Wagtail).



The House Sparrow is believed to have lived alongside humans since the Stone Age, and is an example of a human commensal species.

Sparrows and Munias



These are small, lively birds often seen feeding on the ground and roosting in noisy flocks. They are primarily seed-eaters, with thick, conical bills and are common around cities and farmlands, where grain is plentiful.

Birdwatching Etiquette

When out watching birds let's remember that we are sharing their space and might unwittingly cause them harm. So it helps to always be conscious of any disturbance that we might cause, and take steps to minimize it. We list below a set of guidelines for respectful, thoughtful, and yet enjoyable birding.

“Everyone who enjoys birds and birding must always respect wildlife, its environment, and the rights of others. In any conflict of interest between birds and birders, the welfare of the birds and their environment comes first.”

— American Birding Association



Respect the habitat

Birds know no boundaries, and as birders we often find ourselves watching birds in open fields, around villages, or while driving in the countryside. Let's be respectful of the surroundings and not harm the habitat, whether in a protected area or outside. For example, driving off-road in grassy areas could damage nests and eggs of ground-nesting birds and is best avoided.

Keep a distance



It is important to keep a safe distance from birds, especially during the breeding season when birds are at their most vulnerable. If observing a nest, make sure you are far enough away or hidden behind a tree, bush or artificial hide. Don't spend too much time near the nest as it may attract the attention of predators and cause undue stress to the birds. In extreme situations, birds are known to abandon nests if disturbed.

Respect local people

Birding often attracts the attention of local people who may be suspicious of strangers looking through binoculars. Sometimes it helps to explain what you're doing and offer a peek through the binoculars, especially if there are any curious children around. While birding, be careful not to trespass onto private property, or seek permission first.

Feeding and attracting birds

Feeding of wild birds, though well-intentioned, is not generally needed in the tropics where natural food sources are abundant year-round. Large amounts of artificial feeding can create an imbalance in bird populations, especially in cities, as pigeons or crows are often the ones that benefit. However, if you wish to help birds, do put out water bowls in the hot summers when water sources are hard to find. Keep the bowl near a leafy bush and not in the open. When travelling to far-off places to watch birds, birders or their guides sometimes use playback (broadcasting the call or song) to attract birds into the open. It's best not to use playback, as it might disrupt breeding behaviour or attract predators. Any playback that is carried out should be minimal, and done with utmost sensitivity to the welfare of the birds.



Chapter 2

Activities

*“Adopt the pace of nature; her
secret is patience.”
— Ralph Waldo Emerson*

In this chapter we will go over some indoor and outdoor activities that can be used to introduce children to birds and nature. These range from common activities like taking children on a bird walk, or giving a talk or presentation to children about birds, to under-utilized techniques, including using art, craft, games and other creative ways of engaging children. Most seasoned birdwatchers who get involved in outreach often focus only on the first category and ignore the second, perhaps because they themselves may not be comfortable with those mediums of art, craft and performance.

This chapter is divided into four sections, describing bird walks, talks and presentations, creative activities, and games. An actual engagement with children would most effectively draw from each of these sections with different elements combined together into a single session. For example, a bird walk with a sketching session, or a talk interspersed with games or story-telling would keep the audience engaged and interested. Feel free to mix and match the activities listed here when designing your own programmes.



Indian Grey Hornbill

2.1

Bird Walks

Watching birds in nature around us can be a great source of joy, instill peace and calm into our daily lives, and teach skills of patience and observation. By conducting a bird walk you get the opportunity to share your passion and knowledge with others, and get them to experience first hand the joy of birding. Introducing children to this hobby through a bird walk can be satisfying and challenging at the same time! How do you communicate the wonder of nature and hold their attention, while trying to make them think and also form an emotional bond with the birds around them? In this section, we share the basics of conducting a bird walk for a group of beginners, and will discuss some answers to these questions.



Two broad types of situations may arise -

One is where a school or nature club asks you to conduct a bird walk for their students. You should be able to ask details about the participants (how many, what age, and so on) to better plan the session.

The other may be a bird walk that you conduct at a public location (like a neighbourhood park or lake) on a specific date or occasion (eg. to commemorate Salim Ali's birthday, or celebrate a global birding event like the Great Backyard Bird Count, or as part of a celebration or festival at that public location). This situation can be more unpredictable compared with the first. For a public bird walk the audience will usually be a mix of adults and children, and children will usually be accompanied by a parent or other adult. The suggestions below are applicable to any bird walk for beginners (child or adult).



Venue

The choice of venue for the bird walk may be something that is pre-decided for you (e.g. if a school wants you to conduct a bird or nature walk on their school premises, or at a specific park or lake close to their school) or it may be a choice that is left to you (e.g. if you are conducting a public bird walk).

If the choice is yours, it is important that you choose the venue keeping the audience in mind. For beginner birders, it is best to introduce them to birding at a lake rather than a forest, since wetland birds (like egrets, herons, ducks, storks, etc) are generally larger, less mobile and easier to spot than woodland birds. Experienced birders know that birding is an unpredictable pursuit - a wooded patch may yield fantastic birding on one morning, and on another day may be very disappointing! But to a beginner it is important to see birds well, and large numbers of birds generate further excitement (eg. hundreds of wintering ducks, or a group of Painted Storks flying overhead, or pelicans fishing in a lake).



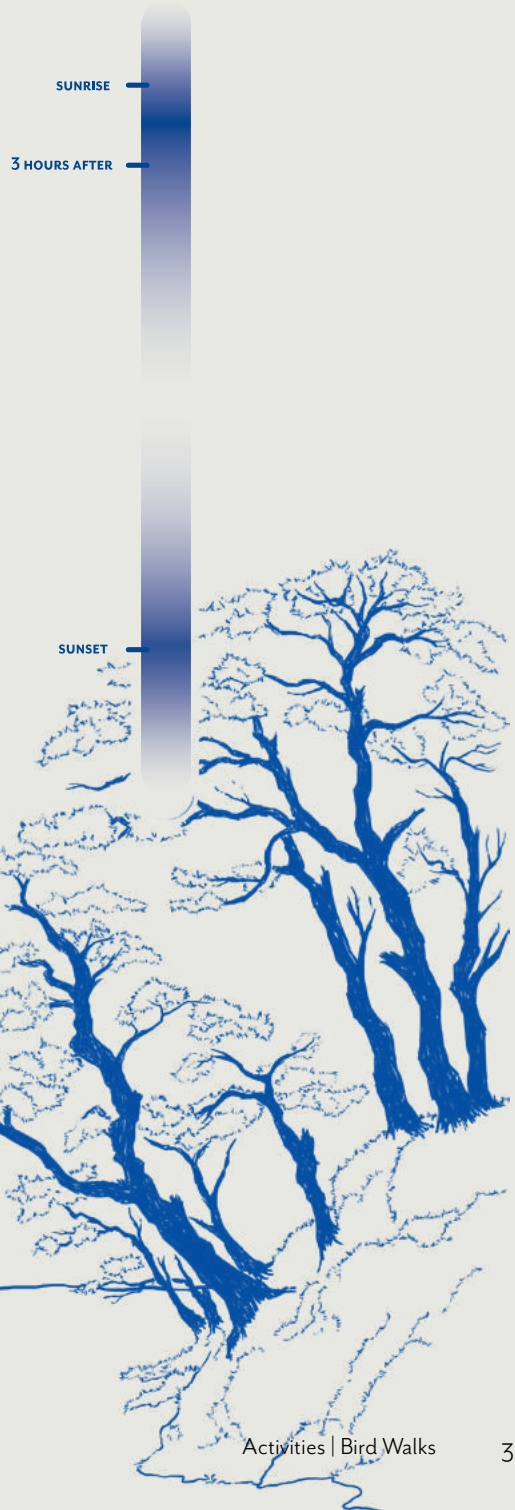
A walk in a wooded area may be disappointing for a beginner, as they might hear a lot of birds, but be unable to see much.

If your participants already have some birding experience and have previously visited waterbodies, then you could consider taking them to other habitats. Grasslands, scrublands, woodlands or parks, and forests present increasing challenges for birding, with typically briefer glimpses and a greater reliance on sound. If the venue of the bird walk is pre-decided for you, you can plan the logistics and activities by visiting the venue beforehand, and finding out how old the participants are (see subsequent sections).



Timing

Birds are most active around dawn and dusk. However, for beginners, getting up very early may be a difficult proposition and may act as an entry barrier for them to take up this hobby. For a school, logistics might be difficult for a very early walk (organizing pickup of the students, getting teachers and parents to show up early, etc). In such cases, it may be fine to start the walk later than usual (say 8am instead of 6am), especially if you are conducting it at a waterbody, since waterbirds will still be visible. At a lake you could even conduct an evening walk, ending before sunset. In most terrestrial habitats, however, the best time for observing birds is usually early morning.

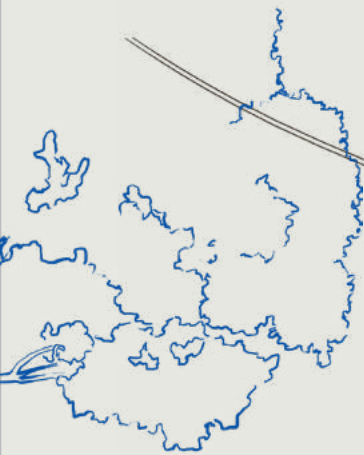


Preparation (for you)

Visit the venue a few days before the walk, to get an idea of the bird life there and familiarize yourself with the habitat. This is especially important if you have not birded at that location before, and will also allow you to plan your route and the amount of time it will take to cover it.

Even if you are a veteran birder with years of experience, a recce of the birding location is a great help!





*Chestnut-headed
Bee-eater*

Things to keep in mind:



Is there a well marked trail at the venue? How long is the trail? Is the track paved or not? Might young children or elderly people find it difficult to walk on?



Make a note of different habitats around so you can guide the participants accordingly. For example, an urban lake may have buildings on one side, a wooded patch on another, and a marshy area at the back, which are different habitats with different species that you can point out.



Is there a particular spot from where birds are more easily seen? This could be a spot with a view of nesting colonies of waterbirds, a fruiting tree, a roosting tree where flocks of birds congregate, or simply a place from where bird-rich areas of the lake are clearly seen.



Is there a suitable spot to sit and conduct a few activities? It may be difficult to hold the attention of children (particularly young children) for long, so some games and activities (refer to section 2.4) coupled with a short bird walk may be most effective.



Make a list of 10 or 20 common birds that you expect to see or hear during the walk. Familiarize yourself with their calls, their food, behavior and migratory status. You could use the Early Bird flashcards for this or refer to online resources. In the absence of flashcards, you could choose to take print-outs of good quality photos of these species that you find online, which can be passed around to the participants.

Age Group & Size

If it is possible, find out in advance what number and age group of children will attend your bird walk. For younger children (say 7 and younger) indoor games may work better than a bird walk. Or if you do conduct a walk for such children, keep it brief, ensure that they will easily see large birds, and follow this up with games or other activities. Children 8 years and above will have the necessary attention span and cognitive skills to appreciate a bird walk.

It is a good practice to have at least one facilitator for every five children. If the group size is large, try to rope in your birding friends or find some volunteers to help out. If the bird walk is being conducted for a school, their teachers would likely be there too (it is best to insist that teachers be present), and while you can get their help in controlling the children and keeping the group together, they may not be able to offer much help in identifying birds or conducting the walk. For a public bird walk, try and get people to register in advance so you can get an idea of the attendance, and plan volunteer support accordingly. In case the turnout for your walk is larger than expected, consider splitting the groups into 3 or 4 smaller groups, each with a facilitator (or two), and get them to cover different portions of the venue (if the venue is large enough), or plan for different parallel activities (say 20 minutes each) that the groups could do by rotation. For example, one group could watch birds, while another group plays bird bingo or flashcard games, and a third group sits in one spot sketching or doing some creative nature activities (refer to section 2.3).

Tips & Tricks

Guiding older children : If you get a child or group of children who have been birding before and seem to rattle off names of birds (correctly or otherwise), or demand that you promptly identify each species, try and get them to learn on their own rather than providing the information directly. Ask them to observe the bird in question, its physical characteristics (is the neck long or short, is the beak small or pointed or thick, are the legs long), its behavior (is it feeding on nectar or berries or seeds or fish) and try and get them to find it themselves in the Early Bird pocket guide.



Coppersmith
Barbet



Material

Being prepared with printed material and (if possible) optical equipment can be very useful, especially for sessions with beginners, who are unlikely to have their own birding equipment.

Optical equipment: There is nothing like seeing a bird up close! Binoculars are essential equipment and do bring along any extra binoculars you can gather. A spotting scope can be a huge attraction for beginner birders, especially at a water body where you can station it at a good location so that passersby can also take a look. If you are in a big city which has stores that sell binoculars (or a branch of a company that makes binoculars, like Zeiss), try contacting them to find out if they are willing to send 5-6 pairs of binoculars or a spotting scope to be passed around

during the walk. It's free publicity for them, and often they are happy to be associated with local birdwatchers' groups.

Field guides/identification aids: For beginner birders, you can pass around a few of the appropriate Early Bird pocket guides, which list the common birds of the region and are handy to carry around. Early Bird flashcards can also be used as identification aids during the walk, or photos of birds that you have printed out. Keep a more comprehensive field guide with you as a back-up.

Activities: If the group is anticipated to be large or consisting of young children, it may be a good idea to carry print-outs of games (like Bird Bingo) or art activities (see section 2.3).

Preparation

(for the participants)

As the facilitator, you should inform participants (or school administrators) a few days in advance about what to expect on the walk. This should include the start time, expected duration, meeting point, what they should carry (water bottle, notebook, pencil, binoculars, insect repellent) and what to wear (comfortable shoes, dull coloured clothing, cap, rain gear as appropriate). If the walk is scheduled in the morning, it is a good idea to ask participants to carry some snacks or bananas with them, especially if there will be children. Alternatively, ask the school authorities to provide a packed breakfast for the children. A hungry child will not be interested in seeing birds!



Dull coloured clothing, Cap



Rain gear in case of rain



Water bottle



Snacks, Bananas



Insect repellent



Binoculars



Notebook, Pencil

Conducting the walk

Before the walk: Before starting the bird walk, give a brief (5 min or so) introduction about birds (e.g. what is fascinating about birds, why we watch birds) and a brief introduction to the location (e.g. is it a lake maintained by neighbourhood residents etc). If at a public walk, ask participants if they have any experience of birding, and perhaps to name one favourite bird that they know of.

During the walk: For beginners, and especially for children, simply pointing out a bird and stating its name or some identification features may not be enough to hold their attention. Providing interesting information on commonly seen species is a good way of keeping them engaged, especially if there is a lull in the walk (nothing in sight, or no new birds seen). For example: magpie-robins have a varied song and are known to mimic other birds; grebes have webbed feet and spend their entire life in water (they are unable to walk well on land), pigeons and doves can drink water by using their beak like a straw, unlike other birds which have to tilt their head back to swallow. You could also make things interesting by asking quiz questions (eg. which neighbouring country of India has Oriental Magpie-Robin as its national bird?) or telling a bird story or playing a game.

Identification: If the participants are first-time birdwatchers, and especially if they are children, don't worry about the full name of the species (eg. just magpie-robin is sufficient, rather than Oriental Magpie-Robin) as it may intimidate or confuse them. Use your discretion in this, for example, you may need to differentiate Grey Heron from Purple Heron. However, warblers and sandpipers are difficult for beginners to identify, so you may want to leave the ID as just 'sandpiper' or 'warbler' as appropriate. For migratory birds, do mention how far they may have traveled as that is one of the wonders of the avian world. If the participants are very young children, an interesting game to play would be to ask them to use their imagination and name the birds they see during the walk, based on their appearance or behaviour.

Answering questions: Don't be afraid to say that you don't know! In fact even if you do know the answers, it may be more effective to say "let's try and find out" especially if the question is related to something that can be observed during the walk.




Purple Heron


Tips & Tricks


Look for birds that are doing something interesting, eg, a pond-heron stalking a fish, or a coot being protective of its chicks, or a juvenile begging from its parent. Ask participants to observe the bills of the birds they see, and try to correlate them with their food (eg, sunbirds have long, pointed bills to sip nectar). If there is time and opportunity, the children could sit at a quiet spot to observe and draw some birds in their notebook.


Activity-

DRAWING WETLAND BIRDS


 *Sketching*

 *7+ years*

 *Individual or Group*

 *1.5 hours*

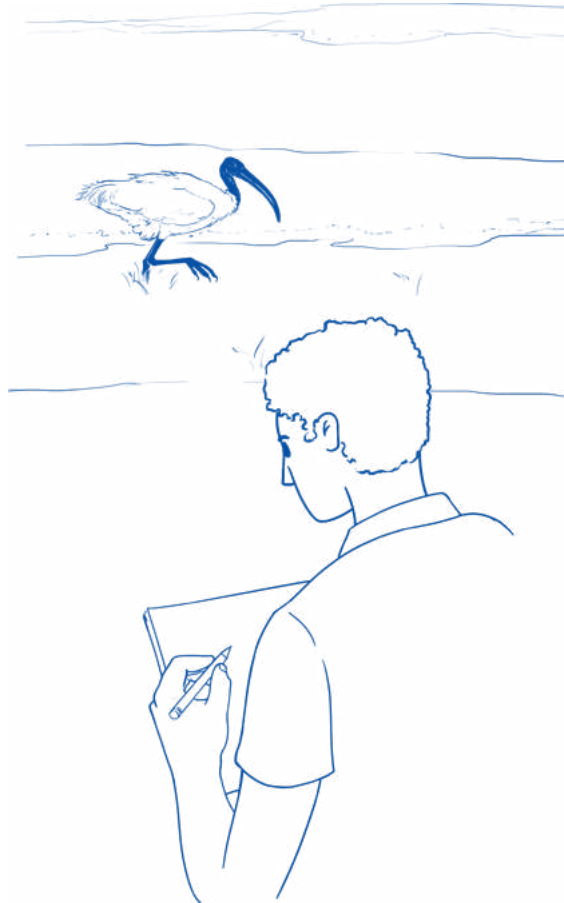
 *Outdoors*

 *Paper and pencil or pen*

Take children to a waterbody where larger birds such as egrets, herons, storks, ducks or swamphens can be easily seen from close. Ask them to spend the first few minutes quietly observing the birds, following which they will proceed to sketch at least five birds of different species. Drawing can be simple, with just circles and lines (see 'How to Draw' on page 61). Children should make notes of the colour and size - head, bill and legs, breast, back, wings and tail. Additional information such as where the bird was seen (land, water, shrub, air, etc) and what it was doing (feeding, preening, nesting) can be added as notes next to the sketch.

If there is sufficient time and the birds continue to stay around, children can colour their drawings trying to match the colours as closely to that of the bird as possible.

Later, gather the children around and encourage them to identify the birds they have sketched using the resources available (like a pocket guide or a poster). Ask the children to share their observations made during sketching. As each child identifies his or her bird, the facilitator could share something interesting about that species.



Early Bird: Nature Detectives Bingo

Go to a park, lake or garden near your home and find four in a row for BINGO!

 <p>Call of a bird</p>	 <p>Bird in flight</p>	 <p>Bird with long tail</p>	 <p>Feather</p>
 <p>Bird with food</p>	 <p>Two birds together</p>	 <p>Mostly black bird</p>	 <p>Colourful bird</p>
 <p>Bird with long legs</p>	 <p>Bird on the ground</p>	 <p>Bird home</p>	 <p>Mostly white bird</p>
 <p>Bird food</p>	 <p>Bird on branch</p>	 <p>Bird on wire</p>	 <p>Bird dropping</p>

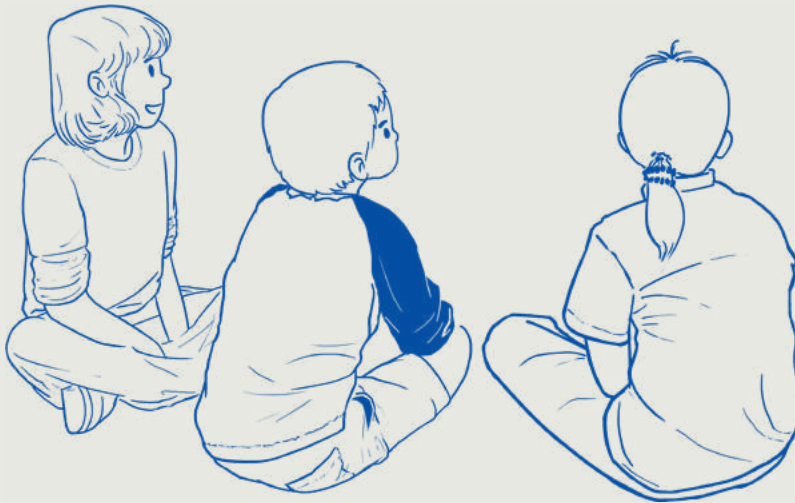
Illustrations by Smitta Kauschik

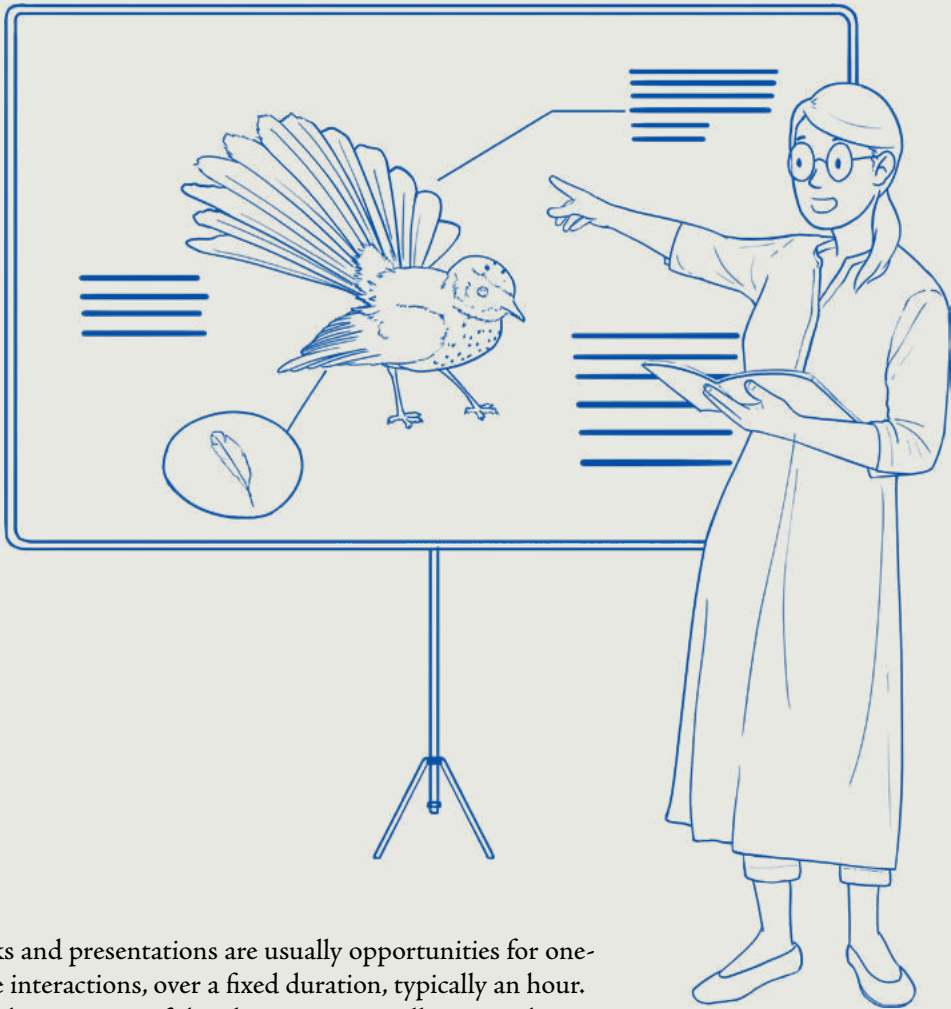
Game-
BIRD BINGO

2.2

Talks and Presentations

One of the most common requests birdwatchers get from their friends and acquaintances is to give a talk or a slideshow for children at a school, or for specific interest groups of adults. Nowadays webinars are gaining popularity as well, and there are often requests to give online talks about birds and birdwatching, to an audience of adults or children who are completely new to birding. Such sessions, in person or online, allow us to reach a large group of people, but whether the audience consists of children or adults, effort is needed to make the session engaging and interesting. In this section we will discuss these situations, suggest approaches and tips, and list resources you can refer to for content.







Talks and presentations are usually opportunities for one-time interactions, over a fixed duration, typically an hour. For the purposes of this discussion we will assume that the facilitator will be making a presentation on a computer which will be either projected indoors in the classroom or auditorium, or conducted over the internet using video conferencing. There are several commonalities between these two different modes of engagement, and also some important differences to keep in mind.


Preparation

Giving a talk to children requires special preparation to make it interesting, so that they don't regard it as yet another boring lesson that they must pay attention to!

A little bit of prior information can help you be better prepared with material that is relevant to your audience.

 If possible, visit the venue (e.g. school campus) a few days before your session, to check the habitat and to note the common birds that may be seen on campus. Then you can use this information in your session, and introduce participants to the birds that they are likely to see around them.

 Get information from the school or your contact about the number of children who will attend the talk, their age groups and any prior exposure to birds and birdwatching. For the interaction to be effective, ideally there should be no more than 30-40 children in the session.

 Find out if the classroom where the talk will be held offers an opportunity to see or hear birds while indoors. Alternatively, try to schedule a small session outdoors before or after your talk. Even a fifteen minute outdoor activity can deepen the impact of your talk.

Content

Depending on which age group of children will be attending your session, you can choose to make it completely activity-based (recommended for <8 year olds), a mix of information and activities (8-12 year olds) or purely information-based, making connections with science (>12 year olds). In some cases, you may have the opportunity to interact repeatedly with the same group of children over a period of time, perhaps as part of the school's eco club. You can then create a series of hour-long interactions which will gradually introduce them to different aspects of birds. Here we list some ideas and suggestions for classroom presentations (for 8 year olds and above) that you can incorporate as appropriate into your plan:

1



Introduction to birds: You can talk about the diversity of birds in India, with references

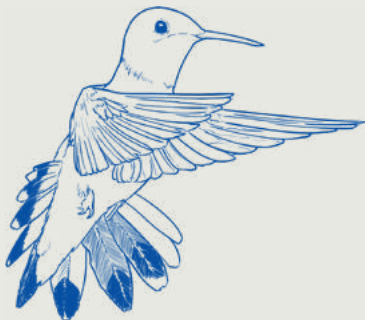
to culture, folk tales, art, and a discussion of common birds that the children may be familiar with. You can touch upon what are some of the fascinating aspects of birds, perhaps through a simple 'Fact or fiction' game that you could play with them.

2



About bird song: Start with a discussion about why birds sing, some of the fascinating songsters from around the world (e.g. lyrebird), and closer home, some birds with beautiful and melodious songs. You could play the calls of birds seen in the neighbourhood, and get the children to write down what the sound reminds them of.

3



Feathers and flight: Start by asking them about the different functions of feathers, and elaborate on each aspect (flight, display, camouflage, etc). Carry a few feathers with you to illustrate the unique design of feathers. You can refer to online resources (e.g. from the Cornell Lab of Ornithology. academy.allaboutbirds.org/features/all-about-feathers/) that present information in an interesting manner.

4



Food and habitat: Discuss the diversity of foods that birds eat, and the variety of habitats they live in, and make the connection to different features of birds that are adapted to their environment (bills, feet). You can play the 'Memory game' using the Early Bird

flashcards (refer to the instructional video at bit.ly/flashcard-games)

5



Sight, hearing, smell: Talk about what it is like to be a bird, and have a discussion on the different senses in birds, including sight, hearing and smell. Birds have amazing eyesight, which could be the main focus of this session.

6



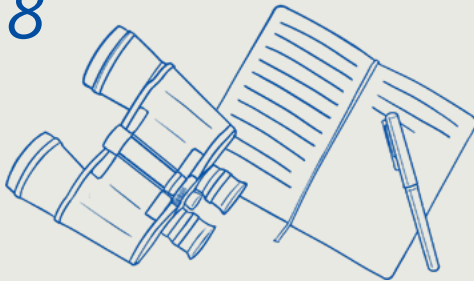
Life cycle of birds: Talk about the different stages in the life cycle of birds, from establishing a territory, finding a partner, nesting and bringing up the young. You could play the 'Bird survivor' game (needs a large indoor or outdoor space) for children to appreciate how hard it is to be a bird.

7



Migration: You could talk about the fantastic feats of endurance undertaken by many species of birds and the reasons that birds migrate. For older children you can also include examples of scientific studies on bird migration and ringing, or show them migration maps of species that come to India (birdcount.in/migration-maps-home/)

8



Beyond birdwatching: Older children who have developed an interest in watching birds can be introduced to citizen science projects (ebird.org/india) and the benefits of keeping careful records. You could share conservation success stories and encourage them to take up simple projects of their own, around their campus.

For more ideas, visit the Early Bird Youtube channel (youtube.com/earlybirdindia), which carries webinars on many of these topics. Write to team@early-bird.in to request a set of presentations for bird educators.

Game:

FACT OR FICTION

This is a game adapted for classroom and online usage from the Cornell Lab of Ornithology's BirdSleuth programme. The 'active' version of this game would ideally be played outdoors or in a large empty room, but it can be played in a classroom or in an online session too.

Instructions:

1. Establish 'fact' and 'fiction' sides of the room or outdoor space - at one extreme is the 'fact' side, and at the other, the 'fiction' side.
2. As you read each of the statements (see facing page) aloud, ask participants to quickly run to one side or the other depending on whether they think the statement is true (fact) or false (fiction). They should decide for themselves and not just follow the herd! In case they are unsure, they should guess and pick any side.
3. Once everyone has chosen, encourage each side to explain their reasons for picking true or false.
4. Finally, reveal the answer and the explanation (given in brackets following each statement), before moving on to the next statement.

Classroom version: If it is challenging to have the children running around, a variation of this activity could be played with the children inside the classroom - 'fact' could be denoted by standing and 'fiction' by staying seated.

Online version: This game is easily converted to an online version, depending on the conferencing software you are using. In Zoom, there is a 'reactions' feature where participants can hit the Yes or No buttons, and a 'polls' feature which the host sets up in advance. The 'reactions' feature allows you to see each participant's response (which is useful if you want to pick a few participants to explain their answers), while 'polls' gives only the total number of responses and the individual answers are not available.

Here is a set of statements which you can use. Feel free to create your own!

1. *All birds can fly.* (Fiction! There are many flightless birds, including penguins.)
2. *All birds have feathers* (Fact! Feathers fulfil multiple functions, not just that of flight. E.g. display, insulation, waterproofing. Baby birds have fewer feathers than adults, though.)
3. *Every flying animal is a bird.* (Fiction! Many insects, like butterflies, can fly. Bats fly - they are mammals not birds.)
4. *All birds build nests.* ((Fiction! Some birds don't build a nest, for example, Koels lay their eggs in the nests of other birds. Many birds don't build a nest but use a hollow in the ground for nesting.)
5. *All species of birds lay eggs.* (Fact! All species lay eggs, but of course male birds don't — only females do!)
6. *Most birds live in their nests year-round.* (Fiction! Nests are mainly for laying eggs and raising young. They are usually not used after the breeding season is over.)
7. *Most baby birds are fed seeds and berries by their parents.* (Fiction! Most birds, even those which largely eat berries, are fed insects by their parents—insects are high in the protein that they need to grow.)
8. *Egg shells are made of the same material as chalk.* (Fact! Both are made primarily of calcium carbonate.)
9. *The egg yolk (yellow part) grows into a baby bird.* (Fiction! The yolk provides food for the growing baby bird. It's the tiny embryo that grows into the bird.)
10. *Some birds feed milk to their babies* (Fact! Pigeons and doves grind up seeds/grains and feed the pre-digested 'milk' to their babies as a source of protein, but of course this is not the same as mammalian milk.)
11. *Humans can see colours that birds can't see* (Fiction! Actually birds can see in the ultra-violet ranges, so they see more colours than us!)
12. *Baby birds are born knowing how to sing* (Fiction! Baby birds learn their song from their parents in many species, especially in the group called songbirds or passerines.)
13. *The Bee Hummingbird is the smallest bird in India* (Fiction! There are no hummingbirds in India. The smallest bird species in India belong to a group called flowerpeckers.)
14. *Birds are the closest living relatives of dinosaurs* (Fact! Fossils have confirmed that birds have evolved from a family of meat-eating dinosaurs called theropods.)
15. *If you find a baby bird, you should try to feed it.* (Fiction! If you find a tiny nestling, try to put it back in the nest as soon as possible! Its parents may be nearby and still helping the chick. If you find a fledgling, you should put it back in its nest or leave it alone.)

Preparing your content

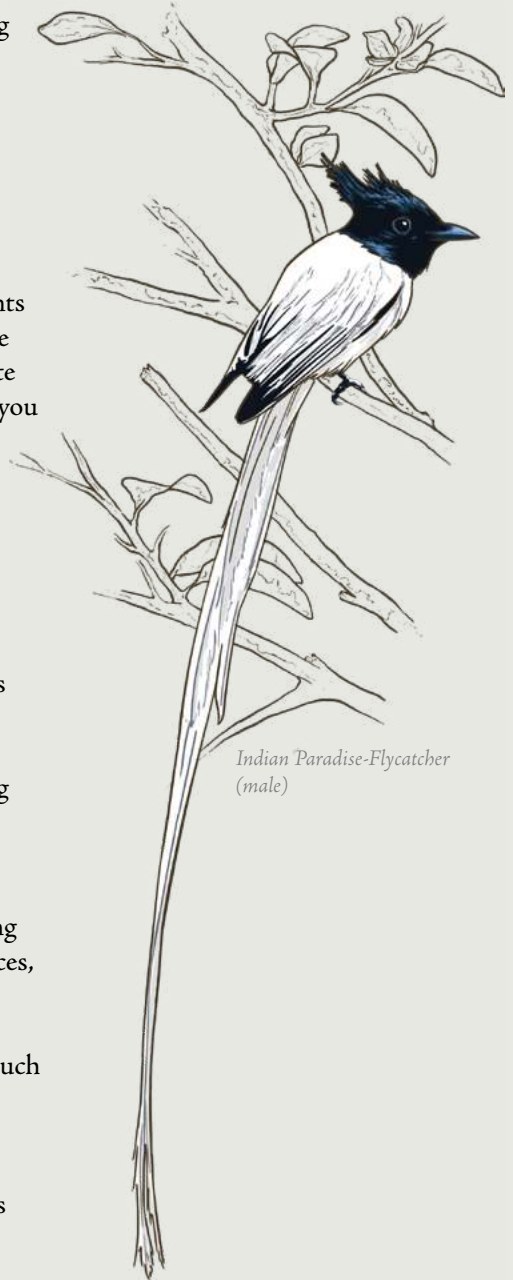
There are a number of points to consider when preparing slides. Some of them are common to any presentation — whether in person or remote. Here are some suggestions for making your content engaging:

✈ Include a lot of audio-visual content into your presentation, and minimise text. When showing photographs of birds, add their calls as an audio clip. Use video clips to illustrate significant themes or points in your presentation (e.g. use of a clip about Peregrine Falcons to illustrate flight or a clip on owls to illustrate vision). There are a number of wonderful video clips you can find on YouTube, but be sure to give appropriate credits if you are using material off the internet.

✈ It is likely that most children in your audience will be beginners to birdwatching (unless you have information otherwise). Prepare your material for a beginner and assume that your audience has little or no prior knowledge about birds. However, it is always a good idea to throw in some challenging questions or points to ponder, so that any children in the audience who do have some exposure to birdwatching also remain engaged.

✈ If you are going to have internet access during the session, you can include interactive games and learning activities that are available from different online sources, and use them to break the monotony.

✈ Incorporate stories and anecdotes into your talk as much as possible, to keep children interested and engaged. For example, you could include stories from folklore or present scientific facts (about bird migration, bird journeys and so on) in the form of a story. Sometimes



*Indian Paradise-Flycatcher
(male)*

a single amazing fact can be the springboard to further exploration, thought and wonder. For example, the fact that Bar-headed Geese sometimes fly as high as 8000m above sea level when migrating over the Himalaya, can lead to an exploration of biology and the adaptations needed in their blood vessels and lung capacity.



(female)

If you are doing an online session, there are some additional points to keep in mind while preparing and conducting the sessions. Here is a document put together by our team, which describes these in some detail: bit.ly/webinar-tips-epe

- ✈ Use of interactive techniques to break the monotony of a 'lecture' is also a good idea. Encourage the children to pitch in with their own experiences and questions (e.g. you could ask if they have a favourite bird, and the reason why they like that bird).
- ✈ You could intersperse your presentation with quizzes, art activities or even games, depending on the size of the group you are addressing and the time available. Instead of giving information, encourage them to think by framing the subject in the form of a question through the fact or fiction game, or a quiz.
- ✈ If you are showing photographs of common birds, make sure to include some interesting facts about them, anecdotes or behavioural aspects that may be worth pointing out (children will not remember the name for very long!).
- ✈ Make it personal and make sure to elaborate on aspects of birdwatching that excite you. Tell them why you like birds, and why you think birds are exciting and fun to watch.
- ✈ Leave them with a take-home game, project, or activity that they can do later at home or in a neighbourhood park or garden, so that the information provided in the session can persist a little longer (refer to section 4.2).

2.3

Creative Activities

Connecting children with nature requires understanding young minds and identifying creative ways to make learning fun. When it comes to learning about the natural world, using art can work wonders. Art stimulates children to observe, think, feel, and become more sensitive while allowing them to use their senses amply - whether from actively observing and listening or engaging in tactile experiences. It opens up their mind to a vast canvas of ideas and vivid feelings and helps them retain ideas and information. Thus, various art forms — drawing, theatre, dance, music and poetry — can be used as means to help children feel a sense of wonder and connection to birds.







Using art to teach about birds requires us, as facilitators, to develop our own sensitivity, creativity and playfulness. This section explores ways in which art can make the process of teaching and learning about birds fun and enjoyable.

“Art, through engaging the senses, can be a unique catalyst in developing a ‘sense of wonder’ about nature.”

— Jan van Boeckel

Activity- 1

BIRDS AROUND YOU

-  Sketching
-  7+ years
-  Individual or Group
-  1.5 hours
-  Outdoors
-  Paper or book, pencil or pen, bird guide

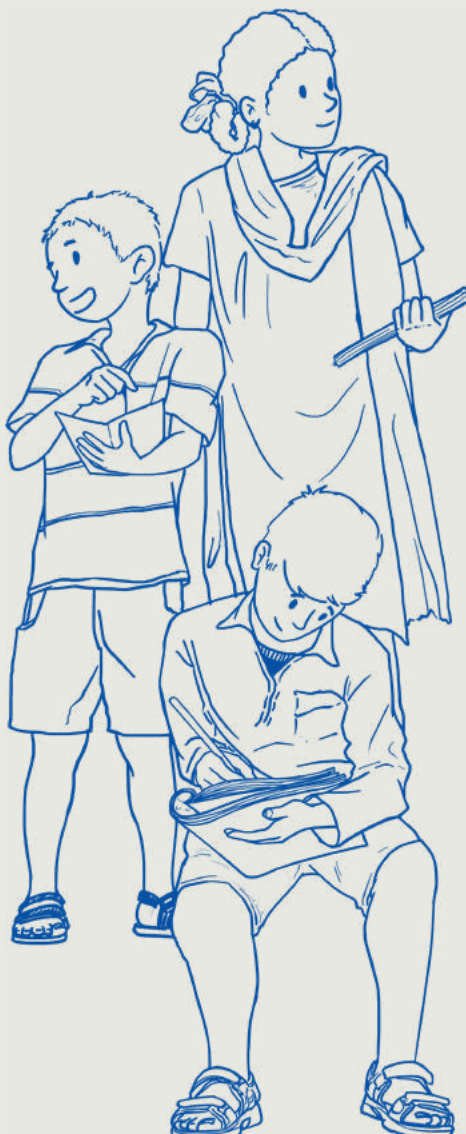
Adapted from: *Joy of Learning*⁵

Take the children to a park, waterbody or any green space. Form groups of four or five each and ask them to settle down in different places. The children close their eyes and sit quietly for five minutes trying to listen to any bird sounds from their surroundings. They then attempt to trace each call to the bird making the sound.

Once all groups have located at least one bird, each group should carefully observe the habits of one particular bird in detail. Then the group members sketch their bird and make a detailed documentation of the bird's behaviour. Refer to page 61 to learn how to sketch birds.

Later on, gathering around (or perhaps after returning to a classroom), each group presents their observations to everyone else, and various aspects of the bird, including their names, are discussed.







Having started this exercise with a few birds, the children can maintain a diary of regular observations of those species, adding new ones throughout the year.

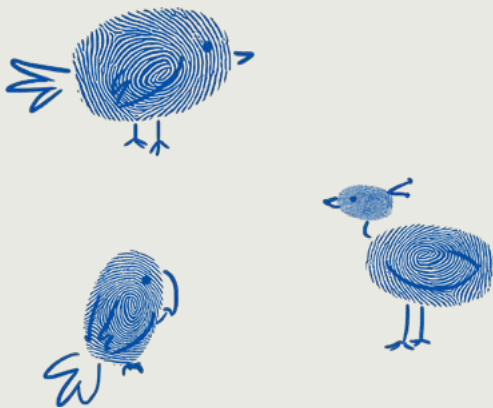


⁵ *Joy of Learning - Handbook of Environmental Education Activities*, NCERT. Developed by Centre for Environment Education (CEE) & Vikram A. Sarabhai Community Science Centre (CSC)

Activity- 2

THUMB BIRDS







-  Sketching
-  5+ years
-  Individual
-  15 minutes
-  Indoors
-  Paper, water colours or ink pad



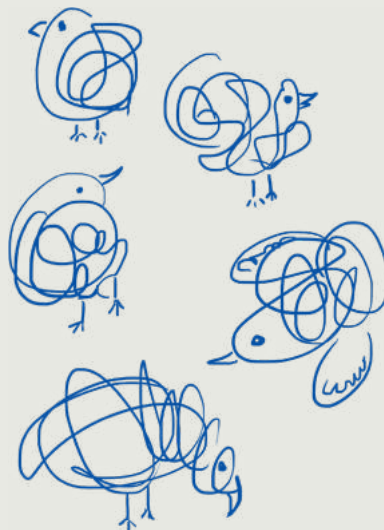
1. Provide paper and colours or ink pad to the children. The children then dip their thumb in the colour or inkp pad and make a thumb impression on the paper.
2. Taking the thumb impression as the main part of the bird, they then draw details to create a bird they are familiar with. Encourage children to think of birds they see around them to make the thumb art bird.

Activity- 3

SQUIGGLE BIRDS

-  Sketching
-  7+ years
-  Individual
-  5 minutes
-  Indoors
-  Paper, pencil or pen







1. Get children to scribble on a paper for a minute, filling the page with squiggles.
2. Then ask them to turn the squiggles into birds by adding a bill, tail, eyes and legs.



Watch this video to see a demo-
[youtube.com/watch?v=vK3yQBouzs](https://www.youtube.com/watch?v=vK3yQBouzs)

Activity- 4

BIRD FEATHERS

-  Sketching
-  8+ years
-  Individual
-  30 minutes
-  Indoors
-  Bird feathers, sketch book, pencil, colours









1. Instruct children to collect and bring bird feathers (wild or otherwise). In the session, the children should start with observing the difference in size, colour and structure of the feathers.
2. Now ask them to sketch the feathers, carefully adding the softness in the down feathers or the hard flight feathers while they draw. Discuss the different types of feathers, their role and moult in birds (Refer to this online tutorial- academy.allaboutbirds.org/features/all-about-feathers).

Add a fun touch by trying to identify the bird through its feathers.

Activity- 5

CREATE YOUR OWN BIRD

-  Sketching
-  10+ years
-  5-10
-  5-30 minutes
-  Indoors
-  Board, chalk/marker pen







Concept: Ashish Kothari, Shyamal L



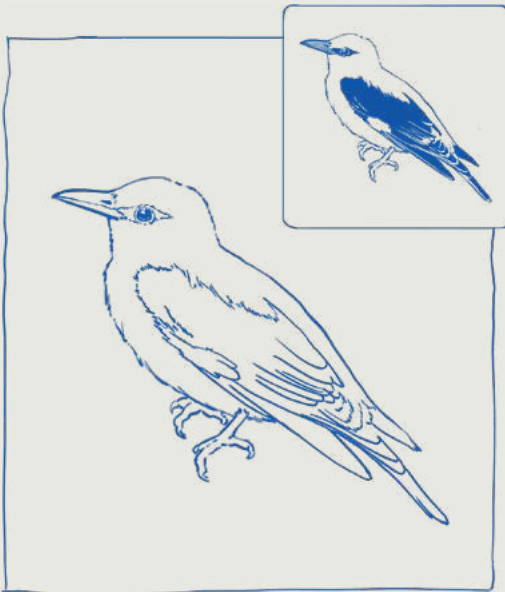
1. Each participant should draw a 'body part' of any bird on a large board while the rest of the group watches. This allows participants to try and recollect the birds they are familiar with and think about the different parts of the bird like bill shape, leg length, feet design, etc.
2. Once the bird drawing is completed, the imaginary bird is given a made-up name by the participants. This activity is to encourage free creative expressions amongst the participants while having fun.

Activity- 6

INTRODUCE BIRDS THROUGH COLORING







-  *Painting*
-  *5+ years*
-  *Individual*
-  *20-30 minutes*
-  *Indoors*
-  *Bird colouring pages, colours*

1. Hand out copies of the Early Bird colouring pages to children. Ask them to colour their copies. They could use the Early Bird flashcards for reference.
2. Older children could first spend time examining the photo of the bird species provided, and then colour the pages from memory.

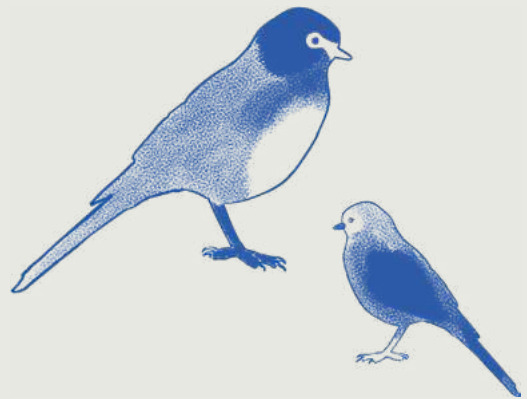


Activity- 7

BIRD CUT-OUTS

-  *Painting*
-  *7+ years*
-  *Individual or group*
-  *30 min or longer*
-  *Indoors*
-  *Chart paper, scissors, pencil, colours*







1. Draw the outline of common birds on cards or chart paper and cut these out.
2. Ask the children to paint the birds. These can be used as wall hangings or to create a mural. As an extension to the task, ask the group to paint backgrounds around each of the cut-outs to illustrate their habitats. Thus a permanent bird poster is created.



During this activity, the facilitator could discuss various birds found in the vicinity thus encouraging the group to start observing birds around them.

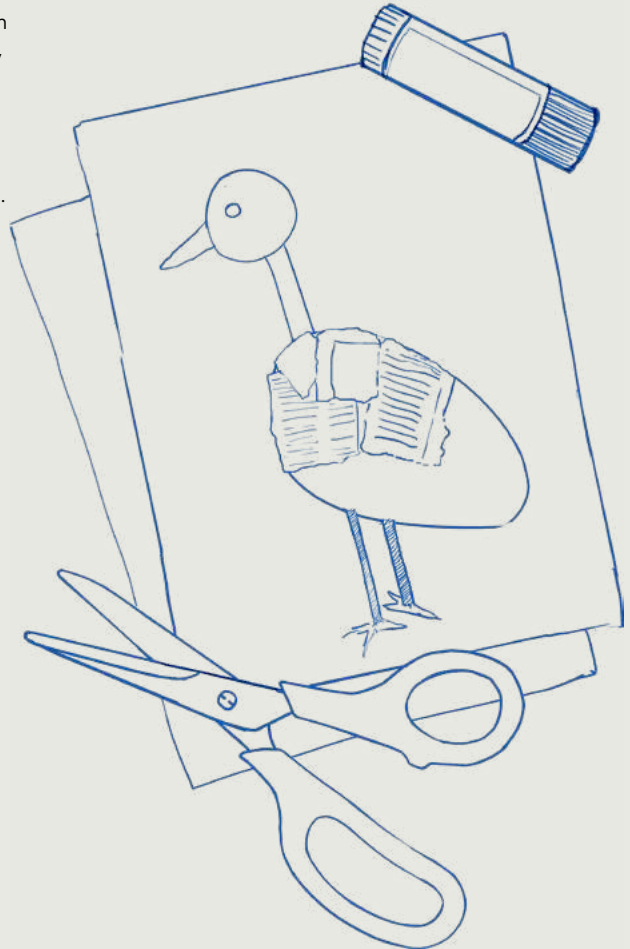
Activity- 8

PAPER COLLAGE

-  Collage
-  8+ years
-  Individual
-  1 hour
-  Indoors
-  Chart paper, newspapers, magazine papers or coloured paper, glue, scissors



1. Ask children to recall birds they are familiar with and the habitat they are generally seen in. Draw an outline of a common bird on the board.
2. Provide a sheet of chart paper and instruct the children to copy the outline drawing of the bird.
3. Newspapers, old magazines or coloured paper can be cut into tiny pieces or long strips.
4. Apply glue inside the outline of the bird. Fill in the details of the bird by sticking the paper pieces or strips.









This activity can be done using materials like wool, cloth, sand and so on.

Note: The size of the drawing has to be big enough to have sufficient space within the outline to stick papers. Discuss some interesting facts about the bird of which the collage has been made.

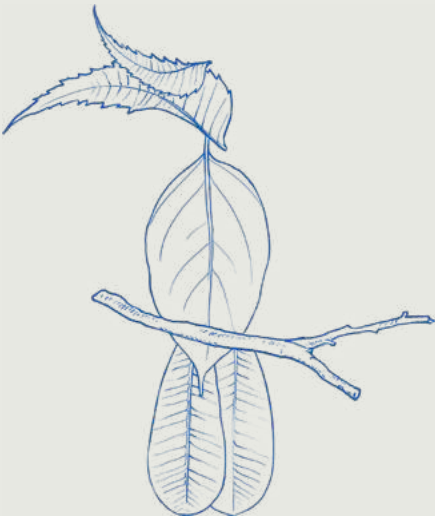
Activity- 9

LEAF ART

-  Craft
-  7+ years
-  Individual
-  1- 2 hours
-  Indoors
-  Leaves, scissors, chart paper, glue







1. Ask children to collect leaves from their neighbourhood.
2. Provide them with chart paper, scissors and glue.
3. Get them to create a variety of bird species they are familiar with using the leaves. Children can also be encouraged to create a bird with habitat.

Later ask the children to explain their artwork in more detail. This activity not only helps children learn about birds but also to explore plants around them.



Activity- 10

NATURE – INSPIRED BIRD ART







-  Installation
-  7+ years
-  Individual
-  1- 3 hours
-  Outdoors
-  Natural materials found outdoors
– leaves, stones, mud, sticks,
flowers, etc.

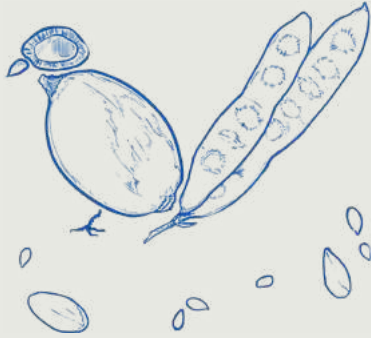


Ask children to collect material from their natural surroundings to create a bird-themed art work. This opens them to all that nature can offer – from mud and stones, to leaves, seeds, fruits and broken pieces of wood, dried grass, dead insects and whatnot! They suddenly discover new things in nature that they had never bothered to look at before. They also get an opportunity to feel these objects with their hands. Since these works of art are ephemeral by nature, they are recycled into the earth, and the children take back the experience with them, learning to look at nature in a new way. This is just one enjoyable way of encouraging children to develop or improve their relationship with the natural world.

Activity- 11

SEED ART

-  Craft
-  8+ years
-  Individual
-  1- 3 hours
-  Indoors or Outdoors
-  Seeds, chart paper, glue









1. Get children to first collect seeds of all sorts of shapes, sizes and colour from their surroundings.
2. Draw an outline of a favourite bird. Apply some glue inside the bird shape. Fill the shape using small seeds.

Older children can use large sized seeds to make bird sculptures by sticking appropriately shaped seeds to make the body, head, bill, eyes, legs and so on. They can also try their hand at designing bird-themed wind chimes or mobiles using larger seeds (this will require use of a hole-drilling tool to drill holes into the hard seeds and metal wire to string the seeds together).

This activity encourages children to work with natural materials and not limit themselves to using pencils, papers and colours. They also learn to explore the various colours and textures in nature.

Activity- 12

CLAY BIRDS

-  Sculpture
-  10+ years
-  Individual
-  1 hour
-  Indoors
-  Potters or terracotta clay

Children enjoy working with mud, sand and water. Clay is a versatile material, suitable for any age group. It can be rolled, moulded, stretched, carved, cut and then rolled back into a lump all over again.



Provide children with well-kneaded clay. Get them to make balls out of this clay first and then press the clay with their finger tips to make bird models. This activity will initiate children to closely observe the anatomy of the bird. They can refer to photographs of birds to model their bird.

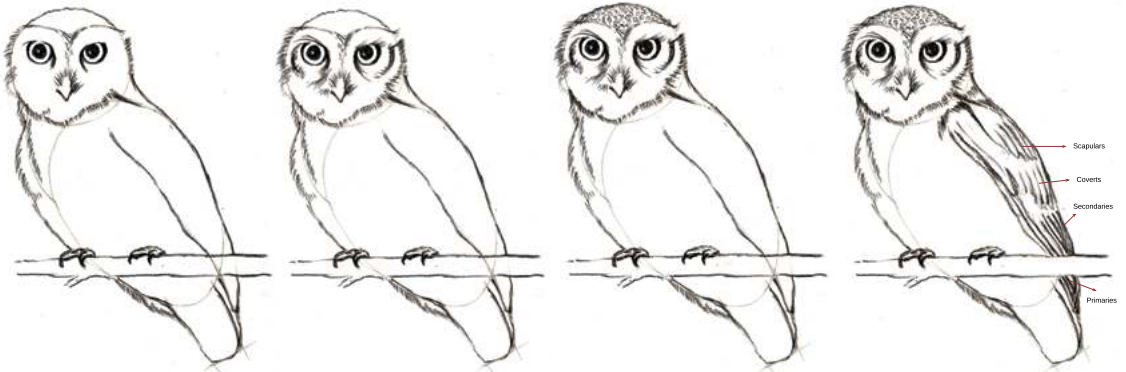
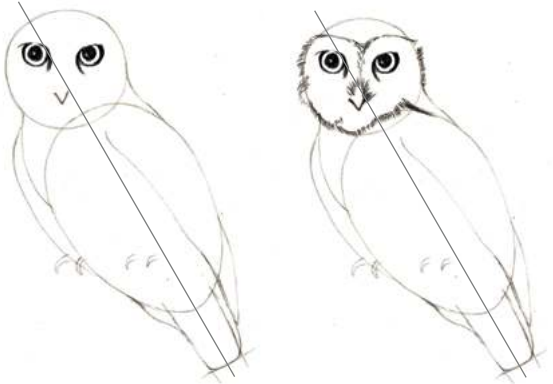
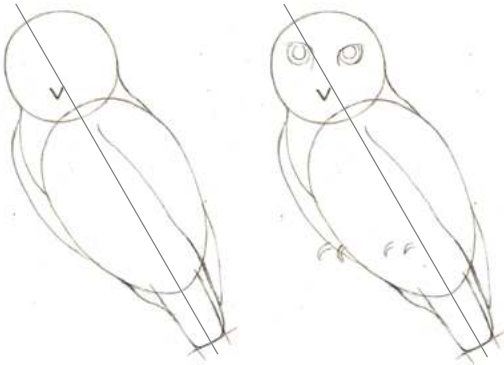
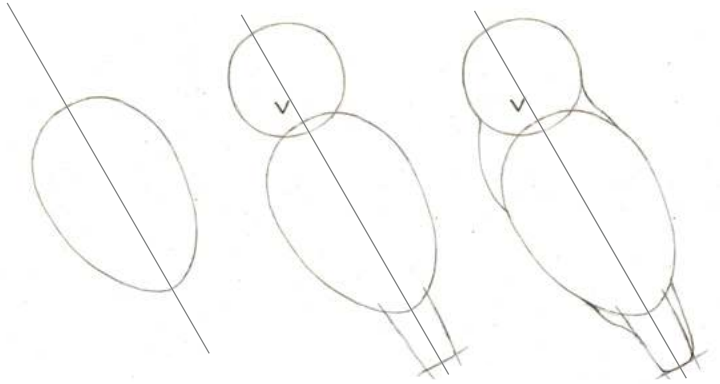


Learn to
**Draw an
Owl**

Illustration: Abhisheka Krishnagopal
Adapted from 'Draw a Bird: Step by step' by John Muir Laws

HOW TO DRAW SERIES

by Abhisheka Krishnagopal. Adapted from
'Draw a Bird: Step by step' by John Muir Laws.
Scan the code to see a YouTube video.

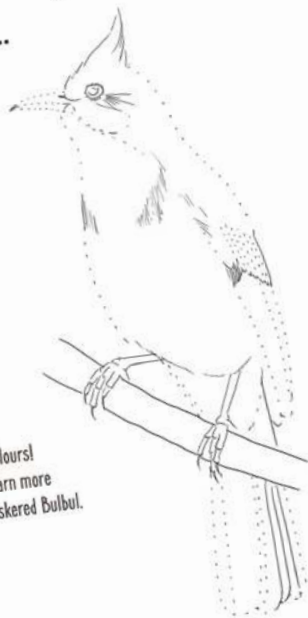


Let your pencil
follow the path...

early
bird
early-bird.in

nature
conservation
foundation

N
NORBERT
MILLER
KARNI



...and fill in some colours!
Turn the page to learn more
about the Red-whiskered Bulbul.

JOIN THE DOTS

Visit early-bird.in to download
this and more art activities.

Answer the questions below:

Q) Which phrase best describes its beak?

- Like a small cone
- Large and hooked
- Curved and long

Q) How do you think its feet are? Why?

- Small and scaly – to hold onto tree twigs
- Webbed – to swim in water
- Big and powerful – to catch mice and other prey

Q) Did you notice its red whiskers?
Can you point them out? Draw a circle around them.

Q) Have you seen this bird before?
If yes, where?

- Yes, I saw it _____
- No

Q) Draw the shape of its beak here:









Red-whiskered Bulbul
Pycnonotus jocosus



Activity- 13

UNDERSTANDING BIRD HOMES

-  Craft
-  10+ years
-  Individual
-  2 hours
-  Indoors and Outdoors
-  Natural material like grass, leaves, climbers, etc.







The nests of birds are vital to their persistence. Yet bird nests are sometimes directly targeted by people (e.g. through hunting) or are indirectly destroyed when tree branches are cut or entire trees brought down. This activity involves children trying to build a bird nest on their own, so that they start noticing different kinds of nests, and begin to appreciate the hard work involved in nest building.



Children collect natural materials like grass and leaves that they think the birds use to build nests. Then, using these materials in any way they choose, they construct nests that could hold eggs. The resultant nests should be strong and intact.

Activity- 14

HOME FOR A BIRD

-  Craft
-  12+ years
-  Individual or group
-  About one month
-  Indoors and Outdoors
-  An old earthen pot (small) or a used cardboard box or any other suitable container

Adapted from: Joy of Learning

This activity gets children to attract birds to nest around their homes and schools; and to observe how birds make their nests and rear their young.

1. Let the children experiment with different types of nest-boxes to try and attract birds to nest in them. An earthen pot could be used by covering the mouth to prevent cats from entering. Make a small hole on one side of the pot about 5-6 cm in diameter. If a cardboard box is being used, it should have only one small opening. The earthen pot or the box should be hung near the ceiling of a balcony or other open space. It should be protected from the rain, and should be affixed such that it doesn't swing in the wind.
2. If a sparrow, munia or other bird (e.g. a magpie-robin) is attracted to the pot or box, and begins building the nest, children should observe carefully and make notes on the following:
 - Does the male or the female make the nest?
 - What materials does the bird use to make the nest?



- Where does it bring these materials from?
- How many times in an hour does the bird visit the nest?
- How long does the bird take to complete its nest?
- Can the child guess the day on which the bird laid its first egg?
- How many days after the completion of the nest was the cheeping of the chicks heard?
- What is the difference between the chick's cheep and the parent bird's call?

- Who takes more care of the chicks, the mother or the father?
- What do the parents feed the chicks with?
- How many times in an hour do they feed the chicks?
- Where do they get this food from?
- After how many days do the chicks start flying?
- How do they learn to fly?
- Once they leave the nest, do the parents and the chicks come back to the nest?
- How long does it take for the full nesting cycle: from the time the birds start building the nest till the chicks fly out of it?







3. Once the children are sure that the birds are not coming back, they could take out all the nest materials and examine them. Let them find out what materials were used, and in what quantities.

While the eggs and the babies are in the nest, care should be taken not to disturb them. Explain to the children why they should maintain a distance from the nest.

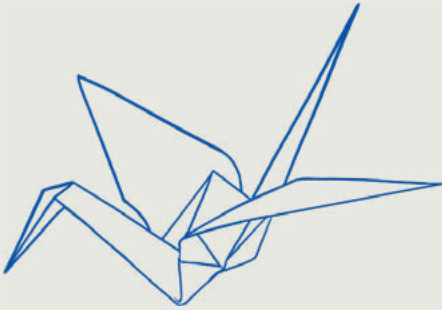
If the children are successful in attracting small birds like sparrows and munias they could try this activity to attract larger birds such as Barn Owls, using wooden boxes.

Activity- 15

ORIGAMI

-  Craft
-  8+ years
-  Individual
-  30 min or longer
-  Indoors
-  Squares of thin, strong paper

Origami, the ancient Japanese art of paper folding, is a wonderful way to create a three-dimensional art project on the theme of birds. Paper folding can be enjoyed by everyone and materials are cheap. Instructions can be found in a variety of books and online tutorials.









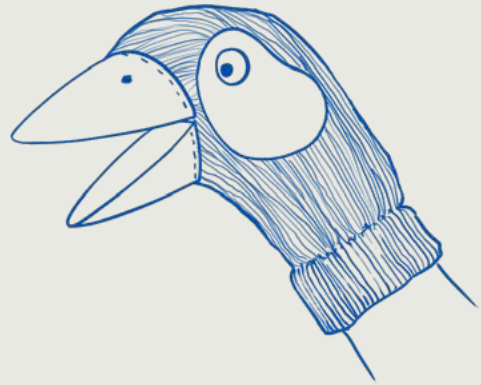
Apart from coloured sheets, newspapers could be used for origami or even white sheets of paper which will allow the children to colour the birds too. This activity will help them understand the shape of a bird's body.

Try making birds with natural materials like coconut and palmyra leaves

Activity- 16

BIRD PUPPETS

-  Craft
-  8+ years
-  Individual
-  2+ hours
-  Indoors
-  Paper or cloth or cardboard, pen or pencil, scissors, string, glue or sticky tape, colour pencils or paint, basic sewing supplies (optional)









Invite an expert to teach children to make puppets or check out YouTube videos to learn to make puppets out of paper or cloth.

When creating puppets, let children choose which birds they want to make. Ask them to talk about why they chose that particular species.

Here's a [series of videos](#) giving you more information on activities 15, 16 and 17.

Activity- 17

BIRD MASK

-  Craft
-  10+ years
-  Individual
-  2+ hours
-  Indoors
-  Chart paper, pen or pencil, scissors, glue, colour pencils or paint

Create paper masks of different birds that are commonly seen in the area, or of birds that are threatened. Children can tell a story or enact a skit while wearing the masks they have created. A procession can also be organised in the school or the neighbourhood to celebrate local bird species and bring their presence into the community.









The masks can be supplemented by other costume elements (body, tail, feet) in the activities described above. A parade could form the centrepiece of a bird festival, designed to bring together the larger community to understand and protect birds and nature.

Some tips on making bird costumes can be found here:

makeit-loveit.com/sew-easy-parrot-costume/

Activity- 18

PAPIER-MACHÉ BIRDS







-  Sculpture
-  12+ years
-  Individual
-  1-2 days
-  Indoors or Outdoors
-  Old newspaper, binding wire of different thickness, cutter, Plaster of Paris (PoP) powder, colours

1. Papier-Mâché is prepared by soaking newspaper in water for a day and grinding it into a paste.
2. Ask children to make an outline drawing of a bird of their choice as a reference to their sculpture. The skeleton of the bird can be built with metal wires (the facilitator could help a bit with this).
3. Begin to cover the wire structure with Papier-Mâché until it gets the form of the bird chosen. Optionally, PoP powder can be mixed with the Papier-Mâché to bind well. Apply more Papier-Mâché paste for the finishing. This has to be dried well in the sun and then painted.



Activity- 19

WALL MURAL

-  Mural
-  10+ years
-  Group
-  1-3 days or more based on the size of the mural
-  Outdoors
-  Paper and pencil to draw, tracing sheets, chalk, paints (acrylic colours or enamel paints or weather resistant coloured emulsion), brushes and other stationery







Wall murals are known to inspire people to share stories. Working on a mural will encourage children to coordinate and work together to bring in awareness about birds, while getting non-participants to notice the subject if it is created at a public space (compound wall of the school or a wall of a public building).

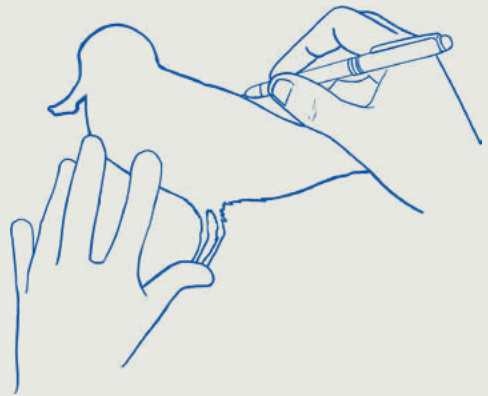
Choose a large area with high visibility, like the external wall of a classroom or the compound wall of the school. Provide coloured chalk for children to work on. You may want to start this project by having a facilitator begin the mural with a few outlines or sketches of birds for children to colour. Then get the children to fill in the colours while discussing which bird they are colouring and why they are using those particular colours.

A wall mural inspired by folk arts, for example Chittara, Gond, Madhubani, Kalamkari or Warli, or even an indigenous Australian or African art style art. Teach children a few simple patterns used in folk art that consist of lines, curves and dots. Draw the outline of the bird on the wall and then ask the children to fill in the bird shape with colours and patterns of their choice.

Activity- 20

STENCIL CUT MURAL







-  Mural
-  10+ years
-  Individual or group
-  1-3 days or more based on the number of birds and the size of the wall
-  Indoors or Outdoors
-  Ivory paper or chart paper, pencils, scissors, sticky tape, paint, paint brushes, reference bird images



1. Choose a theme (eg, neighbourhood birds, rare birds). Refer to books and photographs to draw different species on thick sheets of paper (like ivory paper or chart paper).
2. Cut along the outline of the drawing to make stencil cuts. Stick these stencils on the wall and draw the outline around the cut-outs. Have the children paint in the outline with a single colour, to form a silhouette. Details can be added if required.

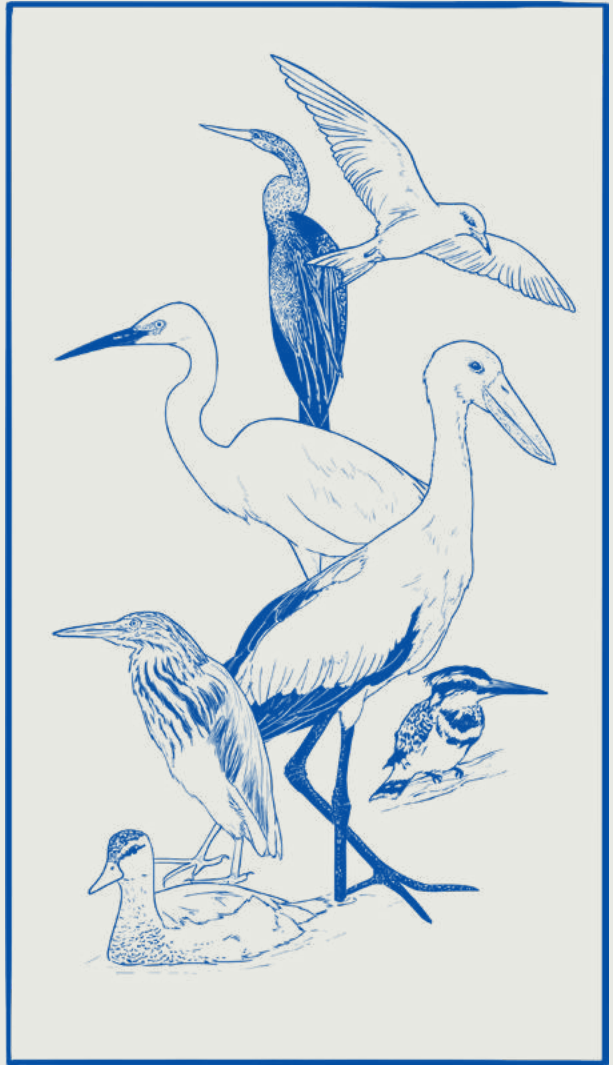
Activity- 21

PAPER MURAL

-  Mural
-  12+ years
-  Group
-  1-3 days or more based on the size of the mural
-  Indoors or Outdoors
-  Large pieces of mural paper (handmade paper, cartridge paper, chart paper or brown paper), paints, paint brushes, pencils, markers, and crayons, tape, wall space or a large table for mural design, and images of birds from posters or books

Adapted from: *Flying wild* (flyingwild.org/secure/documents/208-209.pdf)

1. For this project, children create an original bird art mural to build a feeling of cooperation and community. They can look at pictures or posters of birds for inspiration.
2. You may want to provide a theme to work with, such as 'wetland birds' or 'birds in my neighbourhood'. Have several large pieces of mural paper; as one piece gets full, you can replace it with a blank piece.
3. Secure the chart paper with tape to a large table or wall. If painting, provide items for clean-up on a separate table. Display the finished murals at an event, such as a festival.





Activity- 13
UNDERSTANDING BIRD HOMES

Activity- 16
BIRD PUPPETS by Vishakha Chanchani



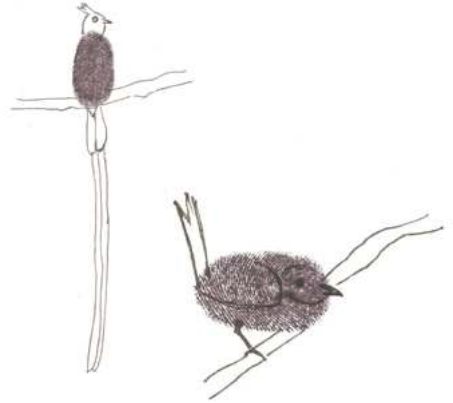
Activity- 22
TRASH BIRDS by Abhisheka Krishnagopal



Activity- 15
ORIGAMI by Nalini Jayaram



Activity-2
THUMB BIRDS





BIRD RANGOLIS by Vidhya Sundar


Activity- 22


TRASH BIRDS


 Craft

 8+ years

 Individual

 2+ hours

 Indoors

 Any waste material, craft glue or fevicol, scissors and cutter, marker pens, acrylic colours and paint brushes (optional)


1. Get children to collect material considered trash at home, like carton boxes, plastic bottles, discarded wooden pieces, pieces of fabric, newspaper, old magazines, CDs, etc.
2. Ask the children to paint or decorate these items by using their creative and artistic skills. They may use birds as their subject and draw cartoons or create attractive designs. Either permanent marker pens or acrylic colours can be used to do so. They could even stick pieces of fabric or paper to decorate them.
3. These repurposed waste items can be converted into useful products, including pen holders, cutlery holders, soap holders, stationery holding containers, fridge magnets and so on.





Activity- 23


CASTING BIRD FEET


 Craft

 9+ years

 Individual or group

 45 min or longer depending on the time it takes to find bird footprints.

 Outdoors (wetlands)

 Plaster of Paris (PoP), water in the required ratio for the particular kind of PoP you have (usually 1:1 or 1:2), containers for mixing the plaster, an old measuring cup, sticks to stir, old chart paper or any thick paper, paper and a marker pen, containers with lid to collect and preserve the cast until they harden (24 hours). PoP is available at most arts and crafts shops, as well as hardware stores.

Casting footprints of birds is like going on a scavenger hunt. This will encourage kids to become more observant and curious about their surrounding environment and understand how feet of different species of birds are shaped. It is a creative way of bridging fun and learning.

1. Ask the children to explore the area around a waterbody or at any wet patch of mud, and scout for footprints of birds. Once found, mix the Plaster of Paris (PoP) with water. To do this, first add one cup of water to a mixing container. Then add a cup of PoP by pouring slowly into the water and stir to make sure there are no lumps or air bubbles. When the plaster becomes a thick paste you are ready to pour.
2. Cut out a strip of thick paper, like chart paper, and glue the ends together to create a circle. This acts as a mould around the footprint. Pour









the mixture into this mould from one side so it slowly flows and seeps into the hollow ground made by the bird feet. Let the plaster set for 30 minutes.

3. Later dig the cast out carefully as it is still delicate. Place it in a container to transport. Label the name of the bird if you are able to identify it, and note down the location and date. The plaster takes 24 hours to fully harden.

Through this activity the school can build an eclectic collection of bird feet casts. Using these casts the facilitator can discuss with children the functions of different types of bird feet.

Activity- 24

BROKEN TILES BIRD MURAL







-  Mural
-  12+ years
-  Individual or group
-  Two or more days
-  Outdoors
-  Broken tiles and terracotta pieces, hammer, cement

1. Collect tiles and and terracotta pots, and break them into small pieces.
2. Draw a bird outline on the wall.
3. Stick the broken pieces within the outline using ready mix cement or wall adhesives. You can similarly include the habitat in the background, by sticking pieces of a different colour.



Activity- 25

BIRD POETRY

-  Poetry
-  10+ years
-  Individual
-  15 min
-  Indoors
-  Paper and pencil or pen

Adapted from: *Joy of Learning*

This activity enables children to identify themselves with a bird and express themselves in writing.

Ask each child to choose a bird which they feel close to, because it reflects their own personality or qualities. Children may then be asked to speak on how the chosen bird reflects their personality. The children then take up their papers and pencils and compose their poem in the following manner:

First line: write the name of the chosen bird
(subject / noun)

Second line: write two words describing its qualities (adjectives)

Third line: write three words describing what the bird does






Fourth line: write four words describing how they feel about the bird (a phrase, sentence or expression)

Fifth and last line: write a word to replace the first noun (synonym).

Give the children 5 minutes to make any refinements, and then ask them to read what they have written in poem or song form. This exercise can be done in any language.

Activity- 26

BIRD SONGS

-  Performance (music), Poetry
-  10+ years
-  Individual or group
-  30 min or longer
-  Indoors

Songs are a fun way of introducing children to various birds and their characteristics.








Find poems or songs about nature that can be taught to children. Or find local poets, who can write songs about birds or nature, compose simple tunes and teach children to sing. Tunes can be taken from a popular rhyme or song.

Older children can write their own short poems about their favourite birds, composed as lyrics for a tune they know. They then sing the song for the group.

Children can be encouraged to listen to bird calls around them and include these sounds in the songs.

Activity- 27

DANCING BIRDS






-  Performance (dance)
-  12+ years
-  Group
-  2+ hours
-  Indoors and outdoors

To express the ecological interaction or behaviour of birds through movement and dance encourages children to think and feel. The physical manifestation makes the subject come alive. Dance provides ways for children to be able to express their emotions.

Collaborate with a dancer (for any style: folk, classical or contemporary) to develop a performance based on a bird theme. Get the choreographer and the children who will perform to understand the ecology and behaviour of birds, so that the resultant performance is a symbiotic interaction between art and science. The choreographer can get children to spend time outdoors observing birds and embody the behaviour of the birds. The kids can be taught some basic dance moves and then given a task to come up with one bird movement individually from their observation of the birds. Then gather the children together in a circle and ask each child to teach their bird movement to the entire group. Then the facilitator can stitch together all the movements to create a short dance sequence. This could further be developed into a dance piece. This way, children will not only learn about birds outside of their books but also develop an emotional bond with the birds they observe. Perform the piece at school and outside as part of other events to spread the love for birds to a larger audience.

Activity- 28

SKIT/ROLE-PLAY

-  Performance (theatre)
-  12+ years
-  Group
-  3-5 hours
-  Indoors


Develop scenarios on various bird-related themes such as migration, role of birds in pollination and seed dispersal, impact of development on birds, or effects of using pesticides. These scenarios can also be about dramatizing some aspects of a bird's life, including finding food, hiding from danger, raising babies, and so on. Children need not shy away from attributing emotions, intentions and speech to the birds! Divide children in groups and give them one theme per group and explain the scenario.


Children then use role play to expand on these scenarios, extending this into a skit or play that can be performed in school or in other contexts (such as a street play).




Activity- 29

NATURE ZINE

 *Sketching, Writing*

 *10+ years*

 *Individual*

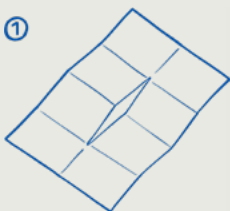
 *1 hours*

 *Outdoors*

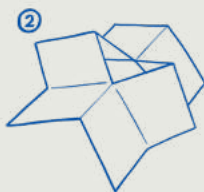
 *A4 size paper, pencil or pen*

This is an activity where an A4 size sheet of blank paper is folded into a booklet with eight sides by making a cut in the middle (the opened out booklet is shown here). Each side of the booklet is marked with 7 symbols as follows - eye (sight), ear (sound), nose (smell), tongue (taste), hand (touch), brain (thoughts or memories), heart (feelings), and the 8th side is blank. The instructions to the participant are to go out and explore nature using all their senses, and record on the zine under the appropriate headings, through words, drawings or any other method they wish to.

①



②



③




④





Activity- 30

BIRD MAP


 *Sketching*

 *10+ years*

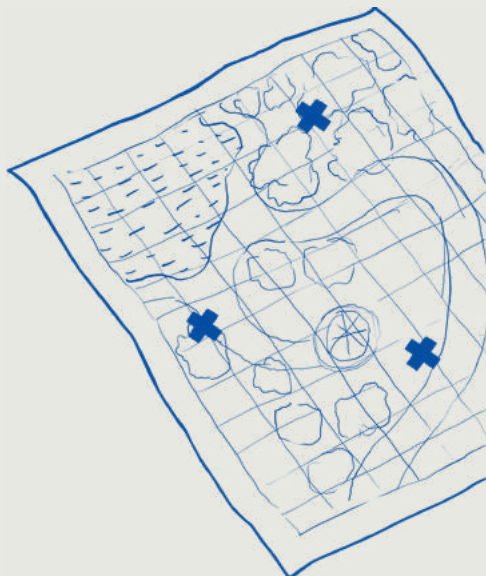
 *Individual or team of two*

 *1-2 hours*

 *Outdoors*







 *Printed map of the locality, pen, pencils, colours*

1. Distribute printed maps of the neighbourhood, school or park to the children.
2. Ask the children to explore the area quietly. Whenever they see a bird, stop and mark the location on the map.
3. The children then sketch the bird as well as make notes of the habitat and include other details such as how many individuals were seen, what they were doing, and any other details they find interesting.

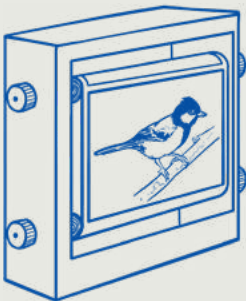


Activity- 31

BIRD STORY THROUGH PAINTED SCROLL

-  *Painting, Craft, Story-telling*
-  *10+ years*
-  *Individual or group*
-  *Full day*
-  *Indoors*
-  *Handmade paper or canvas cloth, large wooden box or cardboard carton, wooded or plastic rods, paints*

1. Choose or create a story with a bird theme, trying to bring in various aspects, including the landscape, habitat, and so on.
2. Ask each child to paint a scene from this story. Stitch or stick the paintings together vertically to make a long scroll. Note: As an alternative a long white cloth (painted with emulsion) or a ready-to-paint canvas cloth can be used.
3. Wrap the top and bottom of the scroll around a wooden rod or a rounded stick or pipe. Take a big carton or wooden box, make holes on either side of the box big enough to insert the rod both at the top and bottom. Insert the scroll into these holes to create a miniature film roll. The scroll can now be manually operated by the educator or the child while narrating the story.



Activity- 32

BIRD STORIES

Storytelling is an excellent way to engage kids. You can pick up existing stories from books, use a folk story, or come up with your own story. Watching birds everyday from your home may inspire you to create a story, based on your own bird observations.



DESIGN YOUR OWN ART RELATED GAMES & ACTIVITIES

Once you have explored some of the ideas described here, do feel free to invent your own methods to bring children closer to nature. Some of these may be straightforward, for example a bird kolam (rangoli). Others might be more elaborate, for example artist Erica Fielder's Bird feeder hat - a wide-brimmed bushy hat covered with seeds. One wears it sitting silent and still to feel the birds moving on the hat. Local art forms can provide a rich source of inspiration when designing your own activity for children.

2.4

Bird Games

Bird games are a great way to introduce children to birds in an engaging and fun way. They come in various forms to suit the needs of the situation and place. Games can be used to teach bird identification as well as key ecological and behavioural concepts such as migration, camouflage, reproduction, communication and so on. Playing nature games develops a positive attitude towards all living beings and children are able to channelize their energy in a meaningful way.

In general, games get children to be mentally and physically active, and help them develop their social skills. Because educators and their children may be constrained in what kinds of spaces they have access to, in this section we categorise the various games described as those suitable for indoor spaces, outdoor spaces, and those that can be played either indoors or outdoors. Similarly, some games are suitable for solitary play, and others are played in a group, and this is specified as well.



*Flashcard games being played at a nature education session in Goa
(photo courtesy Pooja Rani Bhatia/Khojaa Adventures)*




Indoor Games

'What's That Bird?' is a set of 40 flashcards on common birds found almost everywhere in India. Designed as an educational game, the cards feature photographs on one side and information on the other, with icons for habitat and food, and a quiz section as well. Games 1 to 4 are based on the set of flashcards.



Game- 1

MEMORY GAME

-  5+ years
-  Individual or Team Game
-  Set of flashcards

Level of difficulty: Easy

Reading skill: Not required

Knowledge of birds: Not required



All the cards are spread out on a table or on the floor, photo side up.

Team 1 picks any two cards, one at a time, turning them over and placing them on the table to show the back of the cards to both teams.

If the habitat OR food icons match, as above, Team 1 gets to keep those cards.

If they don't match, they replace the cards as they were and the turn passes to Team 2.




Team 2 can now pick two cards, one at a time, trying to select cards in which the habitat or food will match.

The game continues until all the cards are removed from the table, or no further matches are possible.

The team with the most cards wins.

Game-2

DRAWING GAME

-  8+ years
-  Team Game
-  Set of flashcards, paper, colour pencils or crayons

Level of difficulty: Moderate

Reading skill: Not required

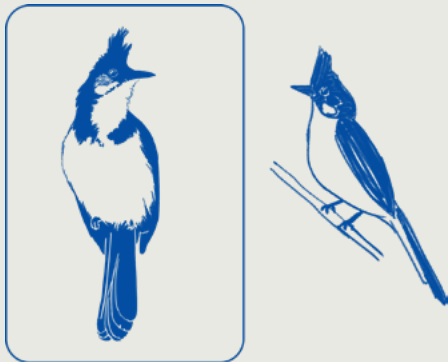
Knowledge of birds: Not required

The facilitator picks a card at random. One person from Team 1 is called to the front of the classroom and shown the main photo on the chosen card. The rest of the team members should not see the card.

The chosen person now has to provide clues about the colour, size, shape of the bill, length of the tail, and any other distinctive features of the bird, and the other team members have to draw the bird from the description.




After the clues are done, and the drawing is made, compare the photo with the drawing made by the group, and provide a score out of 10.

The game continues with Team 2 getting their turn, and so on.



Game-3

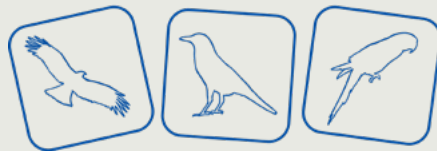
BIRDS AND THEIR CALLS

-  8+ years
-  Team Game
-  Set of flashcards, phone with Merlin installed, or laptop with bird calls available (refer to the 'Resources' section on page 137)

Level of difficulty: Moderate

Reading skill: Not required

Knowledge of birds: Not required



The facilitator selects 10 flashcards from the set: House Crow, Black Kite, Common Myna, Rock Pigeon, Common Tailorbird, Red-whiskered Bulbul, White-throated Kingfisher, House Sparrow, Rose-ringed Parakeet, Asian Koel.




The facilitator plays a bird call and shows Team 1 any three of the flashcards (which should also include the correct answer).

Team 1 needs to guess the bird whose call it is. They get 2 points for a correct answer. If they guess incorrectly, the question passes to Team 2, which gets 1 point for the right answer.

Next question goes to Team 2 and so on. The team with the most points wins the game.

Game- 4

FUN FACTS GAME

-  5+ years
-  Team Game
-  Set of flashcards, dice

Level of difficulty: Moderate
Reading skill: Required
Knowledge of birds: Required

The players sit in a circle. The flashcards are shuffled and placed in a stack in the center, photo side up.

Player 1 holds up the top card, showing the player on the right (Player 2) the photo of the bird.

Player 2 rolls the dice and Player 1 takes the action below based on the number on the dice.

- 1- Read fun fact #1 to Player 2 and ask Player 2 to guess True/False
- 2- Read fun fact #2 to Player 2 and ask Player 2 to guess True/False
- 3- Read fun fact #3 to Player 2 and ask Player 2 to guess True/False
- 4- Player 2 must give the correct common name of the bird
- 5- Player 2 must guess the food of the bird
- 6- Player 2 must guess the habitat of the bird

Player 2 gets 1 point for the correct answer and the card is placed at the bottom of the stack. The game continues with Player 2 picking the next card and so on. If any question gets repeated, that card then gets removed from the stack. The player with the most points wins the game.

Game- 5

BIRD PUZZLE



Create your own puzzle

Materials- A4 or A3 size paper, A4 or A3 size cardboard (thinner cardboard is preferable as it is easy to cut), scissors, glue, access to color printer

1. Choose a photograph or painting of a bird or birds in a habitat and print it out on paper.
2. Paste the image onto the cardboard. Once the glue has dried, cut the image into pieces of different size and shape.
3. Mix up all the pieces, and the puzzle is ready.

If you do not have access to a printer draw a simple image and colour it in. If you don't wish you make your own puzzle, you can purchase a readymade puzzle with migratory birds at early-bird.in



Depicted here are Caspian Tern, Northern Shoveler, Red-crested Pochard, Northern Pintail and Little Stint, which are some of the species of migratory water birds that can be seen in India from September to March. Enjoy putting together this puzzle of migratory birds that visit us from the north of the Himalayas. Artwork by Abhisheka Krishnagopal.

Celebrating Migratory Birds

Game- 6

BIRD SURVIVOR GAME

(Download and print the game, with instructions, from early-bird.in/resources)



All in a Bird's Life

Bird Survivor and Life Cycle Game

This game can be played anywhere with children who are able to read. It teaches them about the different challenges (natural and man-made) faced by birds in their life in order to survive. The attached sheets contain cards for the 6 rounds - each round corresponding to a stage in a bird's life in the sequence below:

Incubate eggs

Both you and your partner are able to find enough food and take turns on the nest.

Fly around the room & take 2 steps forward

(Illustration of a bird on a nest)

Migrate



Round 1
5 cards

Find & defend a territory



Round 2
5 cards

Find a partner



Round 3
4 cards

Find & defend a territory

The forest you nested in last year has become fragmented & there are predators everywhere!

Hop 2 steps back

(Illustration of a bird on a nest with paw prints around it)

Build a nest



Round 4
4 cards

Incubate eggs



Round 5
3 cards

Feed & raise chicks



Round 6
3 cards

Produced as part of a not-for-profit initiative to introduce children to birds and nature.

Learn more about us and buy our products at www.early-bird.in





How to play: This game needs 4 or more players and a facilitator



Divide the group into 4 teams. Make them stand in 4 corners in the play area. Encourage them to adopt the name of a bird as their team name.



Each team designates one player to be the "bird". The 4 birds from the teams move to the centre of the play area and stand side by side in a horizontal line. (The instructions here are written keeping teams in mind. However, if there are only 4 players, they can all be the "bird" with no other team member standing at the corners)



In each round, the facilitator takes the deck of cards of that round to the rest of the team members and gets them to pick one card at random. The card that they pick remains with them until the game is over.



The team reads out the text on the card to their "bird" standing in the centre of the room. The "bird" has to carry out the action written in red text at the bottom of the card (eg. jump forward, step back, etc).



Each team gets a chance to pick one card in each round. The winner is the team whose "bird" is the farthest ahead at the end of the 6 rounds.

Note: Print the attached sheets in colour (take a double-sided/back-to-back print of pages 3-10) and cut to obtain 24 cards. Write the corresponding round number at the back of each card to organize the cards in order. The different rounds contain differing number of cards to give participants some choice, and also because some teams will have to drop out after round 4!

Illustrated by Smita Kaushik
Inspired by Bird Sleuth from the Cornell Lab of Ornithology







Indoor or Outdoor Games

(reading skill not required)

Game- 7

HERON AND SNIPE

-  7+ years
-  2 or more children
-  10 min or longer
-  None

Level of difficulty: Easy





Knowledge of birds: Not required

Ask the children to think of two birds - a heron and a snipe. When the facilitator calls 'heron', the children must hold their hands close to their sides and walk very slowly, step by step, moving their neck forward and backward. When the name 'snipe' is called out, everyone squats and stays very still. This can be made into a fun contest, as described in Game 8. Once a round is over, explain the basis of this game by describing how a heron moves slowly in search of prey, while a snipe freezes when it senses danger.



Game- 8

MIGRATORY AND RESIDENT BIRDS

-  7+ years
-  2 or more children
-  10 min or longer
-  None

Level of difficulty: Easy





Knowledge of birds: Not required



Introduce the words Migratory and Resident and explain their meanings. When you shout the word 'Migratory', the group should move around the room, with their arms flapping like wings. After a short while, when you shout out the word 'Resident', the group must stand still in their place and act like they are feeding or preening. You can play this like a contest, where participants who are slow to respond, or who respond incorrectly, are 'out'. Repeat the game several times.

Game- 9

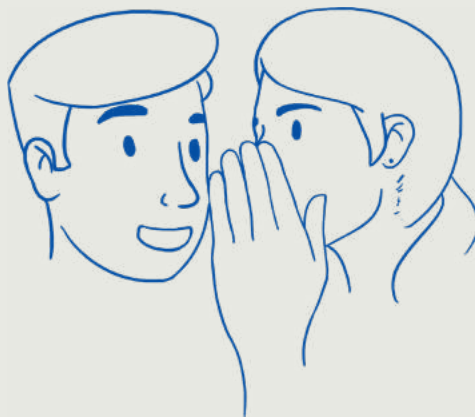
BIRD WHISPERS

-  7+ years
-  5 or more children
-  15 - 30 min
-  None

Level of difficulty: Easy





Knowledge of birds: Not required

Sometimes called 'Telephone', this is a popular game in which children stand in a circle. The first child is taken aside and given the name of a bird by the educator. The child whispers the name to the next child on the right, and the name is passed on through whispers in this way until it reaches the last child in the circle, who then says the name out aloud. This is a very enjoyable game, as the name may have completely transformed by the time it reaches the last child, especially if it is slightly complicated or obscure.



Game- 10

BIRD CHARADES

-  8+ years
-  2 or more children
-  5 - 15 min
-  None

Level of difficulty: Easy





Knowledge of birds: Required

Each participant picks a favourite bird or picks up a bird name from a bowl. They then come up one by one and enact the name without speaking, while others try to guess the name. Once guessed the bird name is appended to the participant's name, e.g., Kavita Kingfisher.



Game- 11

20 QUESTIONS (BIRD VERSION)

-  8+ years
-  2 or more children
-  15 min or longer
-  None

Level of difficulty: Moderate to difficult





Knowledge of birds: Required



This is a twist on the regular '20 questions' many of us have grown up playing, where one person thinks of a celebrity, and the others have to guess the name of the celebrity by asking a series of (upto 20) questions which can only be answered in "Yes or No". A birdie twist on it involves thinking of a bird, and the others trying to guess the name of the species by asking appropriate questions (e.g. "Is it resident in India?", "Is it a bird of prey?", "Does it feed on insects" etc. This can be a lot of fun, but you really need to know a lot about the bird you think of!

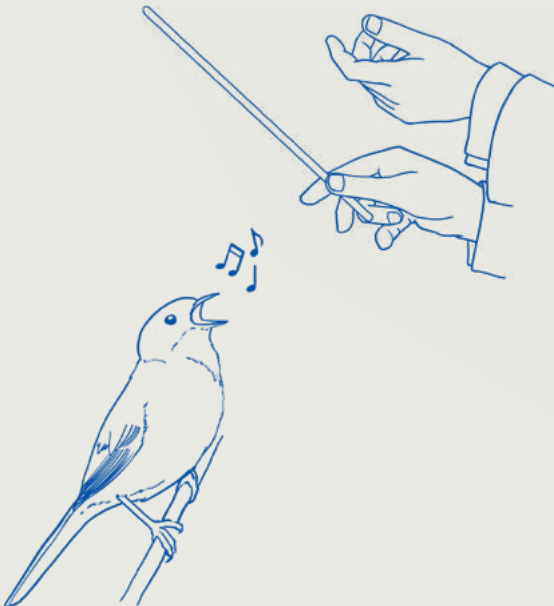
Game- 12

BIRD ORCHESTRA

-  10+ years
-  8 or more children
-  15 min or longer
-  None





Level of difficulty: Moderate to difficult
Knowledge of birds: Required

The group is divided into 4 or 5 teams. Each team thinks of the call of a bird that they are able to sing themselves. One of the participants acts as the conductor of the orchestra. When the conductor points at a team, that team sings the bird call that they had chosen. The conductor can designate both start and stop gestures, and by gesturing at different groups in turn, can create a 'symphony' of bird songs. Participants take it in turn to act as the conductor.



Game- 13

OWL HUNTING GAME

-  10+ years
-  3 or more children
-  15 min or longer
-  None

Level of difficulty: Easy
Knowledge of birds: Not required

The owl is played by one of the children, who is carefully blindfolded to represent a completely dark night. A few (say 2-3) other children are designated as mice. They must stay within a wide circle (say 3m in radius) that is drawn on the ground. Some pebbles or crumpled pieces of paper are placed within the circle to represent the grains that mice eat. Each mouse while making squeaking sounds must gather 5 food items without getting caught by the owl, who will be listening intently. Any mouse who finds the full quota of food can exit the circle; a mouse who gets caught becomes the next owl.







Outdoor Games

Adapted from- *Joy of Learning - Handbook of Environmental Education Activities*, NCERT.
Developed by CEE & Vikram A. Sarabhai
CSC



Game- 14

CAMOUFLAGE ME

-  8+ years
-  4 or more children
-  15 min or longer
-  Strips of paper c. 6×3 cm and colour pencils or wax crayons

Level of difficulty: Easy to moderate

Knowledge of birds: Not required





Divide the children into two teams, 'Pipits' and 'Larks'. While you work with the Pipits, the Larks should go elsewhere and occupy themselves with another game or activity. Give each child a strip of paper and have them wander around to find a place to place the paper. They then colour the paper in such a way that it either merges with the background or looks similar to other objects nearby.

For example, a child may want to place her strip on the bark of a mango tree. How would she colour the paper so that it is hard to find? The children place their strips in the locations they have chosen; the paper must be in plain sight, but still hard to distinguish. Now the Larks return, and their task is to find as many strips of paper as they can. If they can't find them all, give them some hints. Next, the roles are reversed, and it is the turn of the Larks to colour and hide their strips for the Pipits to find.

Follow up this game by discussing how various kinds of animals, including birds, use this principle of camouflage to hide themselves.

Game- 15

SWOOP-IN

-  10+ years
-  2 or more children
-  15 min or longer
-  None

Level of difficulty: Moderate

Knowledge of birds: Not required



It is easy to pick up things or catch objects when one is stationary, but much more difficult if one is moving fast and even more difficult if the object is also moving. Yet this is the standard way in which many birds catch their prey. Birds of prey often swoop down to catch insects or small mammals and birds. Bee-eaters, drongos and flycatchers dart swiftly out from their perch to catch flying insects in the air.





For this activity, ask the children to pick up a small pebble. They can do this easily. Now get them to come running as fast they can, pick up the same pebble without stopping, and run on. This is not as easy! One can take a ball and roll it on the ground or throw it up in the air for the child to catch while running. This is a standard practice exercise for cricket, and children will have fun doing it. You can give points for each level of increasing difficulty to give this game a competitive flavour.

Try and find a bee-eater or drongo for the children to see how skillfully it catches its prey.



Game- 16

FOOD FOR LIFE

-  10+ years
-  20 children
-  30 min
-  Matchsticks, ribbons of two colours

Level of difficulty: Moderate to difficult
Knowledge of birds: Not required





This game communicates the concept of predator and prey, and to show how predators can sometimes become prey for other species.

Make two groups of at least 10 children each. Group membership is denoted by tying ribbons of two different colours around their wrists. Draw two lines 50m apart and let each group stand, side by side behind each line. In the centre is a feeding circle of about 5m diameter. 50 matchsticks (5 matchsticks per child) are scattered in this circle. Children of one group are designated frogs, while children of the other are snakes. At the first call or whistle, the frogs run to feed on the matchsticks. Each frog must collect as many insects (matchsticks) as possible. After 15 seconds or so, the second call or whistle releases the snakes to hunt their food (frogs). The frogs try to escape back to the safety of their 'home' behind their line. Any frog caught on the way is out; any physical contact counts for this. Blow the whistle again after 15 seconds. Frogs with less than three matchstick insects die of hunger and are 'out.' Snakes who have not caught any frogs are 'out.' Continue the game for one more round. Now form a third team of eagles from members who are 'out.' (Eagles can stand on the same side of the frogs). Start the game with the frogs feeding. Release the snakes after 15 seconds to catch the frogs. Then after another 15 seconds release the eagles who will have to try and catch the snakes.



Game- 17

FOOD FIND

-  10+ years
-  4 or more children
-  30 min
-  400 small sticks (toothpicks or matchsticks), poster paints of 5 different colours, paper and pen or pencil

Level of difficulty: Moderate

Knowledge of birds: Not required

Colour a large number of sticks in five different colours: red, brown, green, blue and yellow. Select a grassy open area. Count out four sticks of each colour per child, i.e., 20 sticks per child. Mix and sprinkle these over a marked area of 10m x 10m. Divide the children into two groups: 'A' and 'B.' The children are birds, and the sticks are insects of different colours spread out in the grass. Show samples of different coloured 'insects' to the children. Each team member must pick up five insects in a short time period allotted, else she/he is 'dead' and is out of the game. There will be four rounds for each team.

When you blow the whistle, group A runs into the marked area and starts picking up 'insects', stopping at 5. Within 15 seconds, blow the whistle again. Group A returns and carefully places their insects in a pile. Anyone with fewer than 5 insects is out and sits down. Blow the whistle for group B to go in. Continue till 3-4 rounds are over and you have 6-8 heaps of captured insects. Count the number of insects of each colour collected by students in each round and write the numbers in a table like this one:

On the basis of the table, discuss the following:





- Were insects of particular colours more (or less) vulnerable to being picked up in the first round and in subsequent rounds? Why?
- How might this game reflect what happens in the living world?
- In what other ways might colour be important in the natural world?

To play the game indoors, select a table or floor of suitable dimensions, create 'insects' out of any material available (eg cardboard) such that some match the background well and others are conspicuous against the background.

	Round 1		Round 2		Round 3		Total	
	A	B	A	B	A	B	A	B
Red insects								
Brown insects								
Green insects								
Blue insects								
Yellow insects								
No. of birds alive								

Game- 18

GO AND TOUCH

-  7+ years
-  4 or more children
-  15 min
-  None

Level of difficulty: Easy to moderate

Knowledge of birds: Not required

Make teams of not more than 5 children each (ie, if there are 20 children, make four teams). Draw a circle on the ground; one member from each team enters the circle. The instructor calls “GO AND TOUCH [OBJECT]”, where the object is something in the environs. Upon hearing this, the children in the circle rush out to find the object, touch it, and return. Whoever returns to the circle first earns a point for their team, the others earn zero. Now another set of children (one from each team) enter the circle, and the game continues until all children have had a turn. The team with the most points wins.

To make this into a nature education game, the instructor chooses objects from the natural world, ideally something that requires the children to keenly observe and identify. For example: a red stone, an insect, a mango (or other) tree, a dry leaf, a fruit, something that pollutes, a living thing that doesn't make its own food, and so on. The game can start easy, and then move on to objects that require keen understanding and observation. Team members are not allowed to help!



Introductions and Ice-breakers

Game- 19

SIMPLE INTRO

Divide your group of children into pairs, give them some time to get to know each other - the two can introduce each other with their name, what they are studying, where they are from, their interest or hobbies and so on. Then gather all the children in a circle and ask each member of a pair to introduce the other.

Game- 20

INTRO IN 3 ROUNDS

(active game, needs open space)

Ask the children to wander around the room, and when you clap (or blow a whistle) each child must find a partner who they don't know (or someone they know the least in the group) and the two introduce each other with their name and class or school. When the whistle is blown again the children move around again, each child finding a new partner (whom they know least) and introducing themselves with their name and their favourite bird. In the third round they again find a new partner and this time the pair tell each other their name, their favourite bird and they mimic the call of this bird. Then everyone gathers in a circle facing inwards, and each person has to introduce their last partner (including the bird call mimicry) to the entire group. Through this game, each child gets to make friends with three new people.

Game- 21

INTRO + BIRD NAME

Another simple activity is to get children to introduce themselves using a bird name + their name. Eg. 'Sparrow Suresh' and 'Parakeet Priya'. If they accompany this with one fact about themselves and one fact about the bird they have chosen, their hybrid names will become that much more memorable.

Game- 22

INTRO + BIRD NAME + ACTION

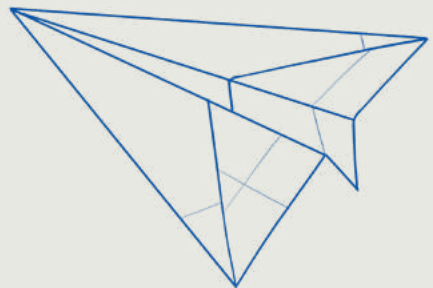
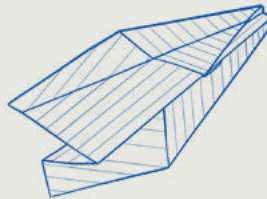
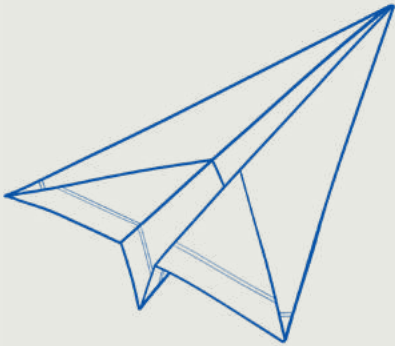
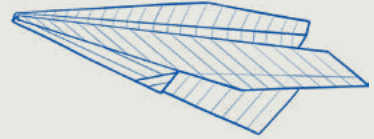
(active game, needs open space)

Ask children to gather in a circle and introduce themselves using an animal name + their name AND make an action associated with that animal (e.g., a woodpecker hammering away at a tree trunk, a praying mantis rubbing its forelegs together, a fish swimming vigorously). Once everyone is done, call out the name of one of the animals. The child associated with that animal comes to the center of the circle, makes the accompanying action, and leads the other children in a winding line around the room until the next animal name is called out. The child associated with that name runs to the start of the line and everyone follows him/her while making the accompanying action. The game continues till everyone's animal name is called out. To make this more fun (and chaotic), get children to make a sound that accompanies their animal's action.

Game- 23

INTRO THROUGH PAPER PLANES

If the children know each other, each one writes on a piece of paper something about themselves that not many others know, like their favorite bird, or food or anything else. They fold their sheet of paper into a plane, and everyone throws their planes across the room. Each child picks up a plane, reads what is written, and tries to match it with its owner. The clue can also be an animal whose name starts with the same letter as the child. If children are strangers to each other, the clue can just be their names and others try to put a face to the name.



Game- 24

NAME GAME

Part 1:

Children stand in a circle. They then take turns to say their name out aloud (a variation can be to add a bird name, call, or action as well).

Part 2:

The game begins with one of the children pointing to and calling out the name of another member in the circle and exchanging positions with them. The turn then goes to the child whose name was called. That child then calls out the name of someone else, and exchanges positions with them. The game continues with children calling out names and exchanging positions. The idea is to memorise everyone's name. If a child fails to remember anyone's name, he/she leaves the circle. In this way, the circle keeps getting smaller and smaller, until everyone in the circles knows each others' names, and the game stops. To make the game non-competitive, no-one leaves the circle if they can't remember a name; rather they simply skip a turn.

Game- 25

BODY WRITING

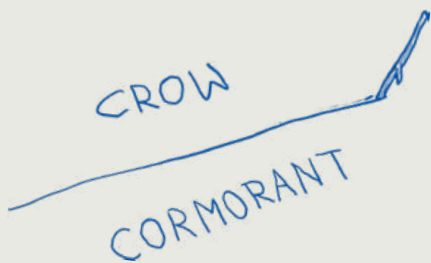
Form small groups of 2-4 children per group. Each group has to think of a bird name. Once they have decided their bird name the groups have to use their bodies to spell the letters. They can use different parts of their body to write the name. For example: tracing the name in the air with their fingers, legs, neck or using the entire body to spell the letters. Other groups have to figure out what the name is.



Game- 26

CROW AND CORMORANT

Draw a line representing the bank of a river and get children to stand behind the line. When you shout, “cormorant!”, everyone jumps forward over the line into the ‘water’. When you shout “crow!”, everyone jumps backwards across the line, back onto land. Shout the names in quick succession, sometimes calling the same name repeatedly to try and fool children. Children who incorrectly jump or stay still (depending on which bird is called out) are out of the game.



Game- 27

WHAT HAS CHANGED?

*Adapted from: The Sahyadri Freshwater Biodiversity Conservation Teaching Guide*⁶

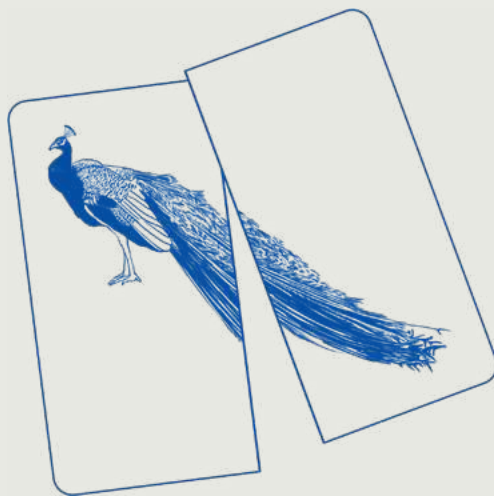
Children form pairs. Partners observe one another closely in order to memorize the appearance of each other. Then one turns their back while the other makes three changes to their appearance; for example, switching their watch to the other wrist, removing the earrings, and rolling up their sleeves. The other player then turns around and tries to spot the three changes. The players then switch roles.

Game- 28

INTRODUCE YOUR MISSING HALF

Adapted from: ‘10 fun ways of Nature Learning’ by Peeyush Sekhsaria

Collect images of common birds and cut the pictures of these individual birds into two pieces. There should be as many halves as there are participants. The half-pieces are scattered on a table. Each child picks up one of the pieces and must then find the person with the complementary piece. Once the children are paired up in this way they first get to know each other and then each introduces their partner to the gathering.



More energizer activities: 15 Fun classroom energizers for students.

bookwidgets.com/blog/2016/10/15-fun-classroom-energizers-for-students

⁶ B.A. Daniel, Sanjay Molur and Sally R. Walker (2013). *The Sahyadri Freshwater Biodiversity Conservation Teaching Guide*. Zoo Outreach Organization, Coimbatore

Quizzes

Quizzes are an excellent means of engaging children in a fun activity. They can be played online or in person, and indoors (e.g., within a classroom) or outdoors (like during a bird walk). They are a good way to break up an extended session (e.g., a slide show) into shorter segments. The questions can be designed for any age group or language. A major advantage of quizzes is that they can be played with a large number of participants while keeping them fully engaged. Quizzes are a fun way to challenge children's knowledge about the natural world, and to stimulate their curiosity. Building an element of competition into a quiz can help engage even the most bored or uninterested children.

The quiz programme can be structured in different ways, including multiple choice questions, True/False questions and open-ended questions. For some ideas on quiz questions, take a look at the 'fun facts' section of the Early Bird flashcards. Following are some examples of possible quiz formats:

MULTIPLE CHOICE

Example 1: Which of the following features is unique to birds?

- A. Birds are warm-blooded
- B. They sing to attract their mate
- C. They have feathers
- D. All of the above

Answer: C (All birds have feathers and no other animal does)

Example 2: What is an 'Endemic' bird?

- A. One which does not fly
- B. One which is restricted to a certain area
- C. One which does not migrate
- D. One which is found in India

Answer: B

Example 3: What is a flock of owls called?

- A. Parliament
- B. Murder
- C. Gaggle
- D. Murmuration

Answer: A

TRUE OR FALSE

Example 1: Hummingbirds are found in some parts of India

Answer: False. Hummingbirds are restricted to the Americas.

Example 2: Coppersmith Barbet can eat up to 3 times its body weight in berries every day

Answer: True. They are hungry little birds!

Example 3: Baya Weaver nests are made only by female birds

Answer: False. Baya Weaver nests are in fact made only by males.

GUESS THE BIRD

Each question provides two clues about a bird. The first clue is the bird's call, played through a computer or phone. The second clue is a description or some fact about the bird.

Example 1:

Clue 1: Call

Clue 2: I am called a 'secondary cavity nester'. In the breeding season, the female of my species enters a hole in a tree and seals it with mud, leaving only a tiny space for her bill to pass through. The male then looks for food and feeds the female while she lays and incubates the eggs.

Answer: Hornbill

Example 2:

Clue 1: Call

Clue 2: I am sometimes called the 'whistling schoolboy' because my whistling calls have a very human-like quality. I live in the Western Ghats.

Answer: Malabar Whistling-Thrush

Example 3:

Clue 1: Call

Clue 2: I eat fish, rodents, insects, and smallbirds. I build my nest in a mud tunnel. I can be found far away from water, and am also at home in urban habitats.

Answer: White-throated Kingfisher

CHOOSE THE ODD BIRD OUT

Show names, images or flashcards of four birds and ask the children to choose the odd one out. The birds can be matched (and mismatched) based on their habitat, behaviour, food, migratory status, endemism, and so on. Bonus points could be given if children can explain why that bird is the odd one out.

Example 1:

- A. Coppersmith Barbet
- B. Great Hornbill
- C. Blue-tailed Bee-eater
- D. Rose-ringed Parakeet

Answer: C. Blue-tailed Bee-eater (This is an insectivore and nests in holes in riverbanks; the others are predominantly frugivores and make their nests in tree holes)

Example 2:

- A. Red-necked Falcon
- B. Shikra
- C. Crested Serpent Eagle
- D. Indian Vulture

Answer: D. Indian Vulture (This is a scavenger; the others hunt their prey)

Example 3:

- A. Nilgiri Wood Pigeon
- B. Spotted Dove
- C. Laughing Dove
- D. Asian Emerald Dove

Answer: A. Nilgiri Wood Pigeon (This is endemic to the Western Ghats of India; the others are widespread in India and beyond)

PICTO-BIRD!

Children guess the bird's name through clues provided by pictures or drawings. To play this, they will require some basic knowledge of bird names.

Example 1:



Answer: Treepie

Example 2:



Answer: Nighthjar

Example 3:



Answer: Forktail



Chapter 3

Feedback and Evaluation

“Assessment is an essential means of learning and learning how to learn”
— Morris Gibbons

The previous chapters spoke about different ways of designing and implementing bird education programmes that are engaging and fun, while helping build sensitivity in children towards nature. In addition to conducting these programmes, gathering feedback from participants, and more generally, evaluating the success of your programme, is essential. Doing this can show how to improve the quality of the programme while helping identify problems and barriers.

Feedback is what is communicated by the participants about the educator and the programme. Evaluation is done mostly by the educator to assess changes in knowledge, awareness and attitude of the participants towards nature. For the successful implementation of bird education programmes both feedback and evaluation are useful; some would say necessary. Feedback and evaluation may be for the programme as a whole, without any person (like the educator) necessarily being the focus.

Feedback

Feedback by participants is crucial to understand how they perceive the programme, and to double-check your perception of how engaging and valuable it was to them. Feedback allows you to assess the needs and expectations of participants with regards to programme content, structure, schedule, and so on. Through the feedback, the educator might want to gather information on such important points as how satisfied the participants were, how much they felt they learnt, and their thoughts on the structure and execution of the programme.

When working with children younger than 10 years, feedback is often sought from teachers or parents. But direct feedback can sometimes be gathered from young children by asking them to give a shout or to raise their hands if they enjoyed the activity. For older audiences, here are several ways to garner feedback from participants.

Formal feedback

This mostly takes the shape of a post-programme feedback form (printed or online). The simplest kind of question is one for which the answer is chosen from multiple options. It is useful to ask participants what their original expectations or goals were, for example, 'to learn to identify birds', 'to learn to save birds', 'to learn why birds are important' and so on. These can be chosen from among several

pre-specified choices, with the option to add further points not already on the list. An additional set of questions is usually designed to understand the quality of different aspects of the programme. The answers to these can be dichotomous (Yes/No, Agree/Disagree, Excellent/Poor), or on a 3-point or 5-point scale (eg Good-Fair-Poor or Excellent-Very Good-Good-Fair-Poor). In our experience, although the answers to multiple-choice questions are useful, the most insight comes from open-ended questions that seek descriptive and experiential responses; these often bring out nuance and understanding that cannot be gathered from multiple-choice questions or from simple ratings.

Finally, a wonderful feedback form is of little use if participants do not fill it in, or do not devote enough time and thought to the answers. For this reason it helps to keep the form as simple and brief as possible, which means thinking very carefully about which questions are absolutely vital and which could be removed or made optional. And a further crucial point: explicitly budget time towards the end of the programme for participants to fill in feedback forms, and do not leave it for later, after the programme has ended. In our experience, doing this ensures that valuable feedback is received from all or most participants; while leaving it for later results in us fruitlessly begging participants to send in their forms after they have gone home!



Example 1: Feedback form handed over to parents accompanying the children on a bird walk.

- Did you feel that the educator spent enough time with the children, explaining facts about birds to them?
- Did you feel that the group size was just right, or was it too large?
- Was the distance covered just right?
- Which did you enjoy more: the scientific facts or the anecdotes and stories about birds?
- Were you satisfied with the facilities (resting time, washroom opportunities)? Is there anything that needs improvement?

Note: Each of these questions could ask for either a written answer, or provide a scale of options to choose among.

Example 2: A semi-structured feedback questionnaire for teachers.

- Did the students enjoy the programme?
- Do you think the bird education programme was beneficial to the students?
- Which part of the programme did you like the most and which the least? Why?
- Rate each session of the programme using this scale: Excellent–Very Good–Good–Fair–Poor. (A similar rating feedback could be requested for other aspects of the programme like timings, facilities, materials used.)
- Would you like to get involved in continuing such a programme in your school?
- Do you have any recommendations to improve the programme?

Note: The questionnaire should be filled by the teachers after they have had a chance to talk to the students. Teachers should be asked to set aside time for this.

Informal feedback

Informal feedback is communicated separately from formal feedback. This could be ongoing and not necessarily only at the end of the programme. It opens the door to meaningful conversations between educators and children that foster reflection and growth in teaching practices. Here are two possible informal methods to use:

Reflection & sharing: Towards the end of a session or programme, children spend time thinking about what they learnt and experienced, and express themselves orally or in writing. This could include what they liked or disliked about the programme, what touched them the most, and personal anecdotes. You could form small groups to allow children to discuss among themselves and then share their thoughts with the larger group. You can also set aside some quiet time towards the end of the session where children can individually reflect and later share their thoughts.

Nature journal: For longer programmes, encourage students to maintain a journal that they can fill in at the end of the day. Children not only write and draw about what they have seen or learnt but also include their feelings towards the educator and the activities, the process, and their own engagement in the programme.



Peer Feedback

While engaging with older children, apart from obtaining their feedback about the programme, it is also useful to encourage them to examine their own learning among themselves. Peer feedback is particularly helpful within groups that are formed as part of the activity. It teaches children the skill of giving constructive comments to fellow participants of the programme in a respectful manner, and of taking responsibility for their own learning by receiving similar comments and reflecting upon them. Educators who have the opportunity to engage with children for a longer duration should try and involve the children in designing these methods.

Peer feedback can be carried out in class or outside, in pairs or small groups. Children can be asked to give feedback to each other on an activity they are engaged with during the programme, or about an assignment or project they are involved with. They should be encouraged to see the strengths and flaws in each other's projects and suggest ideas to improve one another's work in a gentle way. While working on an assignment they can remind each other of the assignment goals and criteria. This could even encourage students to spend time together outdoors observing nature without the support of a facilitator.

Peer feedback can also be attempted towards the end of the programme by asking one group of students to critically review the project presented by another group. It is useful mainly to highlight strengths that only peers can see or to help throw light on aspects missed by the teachers or bird educators.

While engaging with older children, apart from obtaining their feedback about the programme, it is also useful to encourage them to examine their own learning among themselves.



SAMPLE FEEDBACK FORM-

Post programme feedback questionnaire for students aged 15 years who participated in a three week Vacation Training Programme on Bioresources conducted by the Ashoka Trust for Research in Ecology & the Environment (ATREE), Bangalore.

This evaluation form is an attempt to evaluate, from your perspective, the Vacation-Training Program on Bioresources that you have been attending. We would appreciate some feedback from each of you. Please fill out this form. You need not write your name on the form. We require you to be as honest as possible in answering the questions. Your answers will have no bearing on your performance in the course, but they will help us to improve the course in the future.

1. Now that you have almost completed the course, how does the course compare with your expectations?

About as hard as expected Harder Easier Had no particular expectations

2. Did you have any information on bioresources before participating in this training? If yes, please mention.

3. In your opinion, how do you assess the objectives of this program?

4. Which topic/demonstration has impressed you the most? Why?

5. Have you learnt any new scientific concept? Specify.

6. List out ten best lectures

7. Which lectures did you find hard to understand? Please specify module or session

8. According to you, how could those lectures be improved?

9. Regardless of your original expectations, do you think the level of difficulty of the course material is:

About Right Too Hard Too Easy

10. Did you get enough opportunities to interact with the faculty at ATREE?

Plenty Limited None

11. What are your feelings about the lectures from visiting faculty?

Essential Inspiring Waste of Time

12. What is your feeling about the types of projects that you did or were asked to do

Too Intensive Too short Too easy

13. Which field trip did you enjoy the most and why? (Tick any one)

- a. XXX
- b. XXX
- c. XXX

14. Which institutional visit did you enjoy the most? (Tick any one)

- a. XXX
- b. XXX

15. Would a longer field course be more useful?

Probably Yes Not at all

16. Do the field projects complement what was learnt in the classes at Bangalore?

Completely More or less Not at all

17. Does keeping a journal stimulate you to think on what you have learnt?

18. Was the course schedule convenient for you to attend the course? If not, specify when it could be held.

19. Do you think the arrangements at Bangalore and in the field were adequate for the course?

Adequate Not Adequate Could be improved

20. How did you find the following? Please write your comments against the question

- + Accommodation
- + Food
- + Transportation
- + The quality of information supplied
- + The instructions given by the coordinators/ volunteers/ organizers

21. What did you think about the relevance of your itinerary or your course schedule?

22. Did the course inspire you to look at nature and try to understand how it works?

23. Do you plan to meet up with your friends and discuss about bioresources after the course is finally over?

24. Will you major in the field of natural sciences in future?

25. As a student, how can you contribute towards conservation of bioresources?

26. How do you rate the facilities given on a scale of 1-5 (1 being the best and 5 the worst). Specify comments if any.

27. How do you rate the overall program on a scale of 1-5(1 being the best, 5 the worst). Specify comments if any.

Please use the rest of this sheet or an extra sheet to expand on your answers to the preceding questions or to relay any other comments you care to make.

Evaluation

Evaluation is about assessing the extent to which a programme has met its goals. Depending on those goals, you might want to uncover both surface-level changes in participants (e.g. in their knowledge, attitude, skills and enjoyment), and deeper changes (e.g. factual knowledge vs conceptual understanding; knowing the right thing to say vs actually feeling it).

Begin by identifying the overall goal (higher level objective) of your bird education programme, which could be a) Creating champions for birds and nature or b) Building children's resilience by tackling 'nature deficit disorder', and so on. Once you decide on your goal(s), come up with specific objectives which are to be achieved to reach the goal of your programme.

For example, the goal of 'Creating champions for birds and nature' might be fulfilled by achieving the following objectives-

- ✦ Learn to recognize different birds.
- ✦ Watch birds regularly.
- ✦ Know and appreciate their natural history.
- ✦ Love birds.
- ✦ Learn how to be a voice for birds and nature.

These objectives can then be measured through different metrics (i.e., possible

ways of measuring). Different methods of evaluation work in different situations depending on the duration of the engagement and the age group of the participants. You might use a single method, or a mix of multiple methods of evaluation to measure the impact of your programme. Here are some popular assessment methods used by nature educators.

Formal Methods

✦ Pre- and post-programme questionnaires to assess changes in knowledge and attitude of the participants: These questionnaires can be oral, on printed sheets, or online. They can contain multiple choice questions, ratings on a scale, open-ended answers, or a mix, as described in Feedback, above. Participants can use these questionnaires to assess their own learning as well.

✦ Non-competitive quiz, conducted before and again after the programme: This can be conducted orally or on printed sheets handed over to each individual.

✦ Project presentations, in which children make presentations (individually or in groups) about what they learnt overall or on a particular theme.

Example 1: Pre- and post-programme 'structured' questionnaire to assess participants' experience with birds, and knowledge of and attitudes towards birds.

Before beginning the programme, hand over printed questionnaires to the children. The educators should inform the children that this is not a test or an exam. The answers must be completed independently by the children, but with supervision from adults. For children with limited reading and writing skills, oral interviews can be conducted. Keep the questionnaire short, such that it can be completed within 5 minutes. You could cover the following aspects in the pre-programme questionnaire-

- The participant's personal background and experience with nature, if they have access to the outdoors at home or school, and whether or not they see birds from their homes or schools (this part is needed only in the pre-programme session).
- A section to assess their attitude and feelings towards birds
- A section on their knowledge about birds, for example by including photographs or playing sounds of some common birds, and asking the children to identify them.

To measure changes in knowledge of and attitude towards birds, get participants to complete a similar (but separate) questionnaire at the end of the programme. This can include questions about how they felt about birds after the workshop, and if they are interested in watching birds in the future. A post-programme questionnaire can contain elements that serve the purposes of both feedback and evaluation. Do note that apart from understanding the factual knowledge gained by children it is essential to assess the attitudinal change: in other words, not just what they know about birds, but also how they feel about them.

Example 2: *Assessing the knowledge and interest of participants during a bird walk.*

Before beginning the bird walk, hand out a sheet of paper and ask each of the participants to list the names of birds they know: this helps in assessing their existing knowledge about birds. Instruct the participants to fill in the names of birds they spot during the walk in a second column. Keep aside spare time after the walk to have a discussion on what the participants have learnt during the walk. You can begin by asking the participants to check their new list, count the number of new birds they saw and name the birds seen during the walk. Discuss various aspects of these species – their size, behaviour, and associations with habitats or other species. Comparison between the two lists (before and after) will help in assessing the knowledge gained by the participants during the walk. The number of participants who are able to provide factual information about the birds they saw during the walk, will help you assess what fraction of participants were interested in the walk and in the information you provided during the walk.

Pre- and post-programme questionnaires should contain questions only about material that is covered in the programme, not aspects

(especially facts) that are not covered. It would be ideal if the formal questionnaire allows adequate space for open-ended comments apart from a focus on the core issues and questions. The latter helps provide quantitative data while open-ended questions allow space for information that was not anticipated. For example, questions with multiple choice answers like “Did the programme meet your expectations?” (Yes, fully – Mostly – To some extent – Very little) or “Overall, how satisfied are you with this programme?” (Very satisfied – Satisfied – Dissatisfied – Very dissatisfied) can provide you with quantitative data. For example, you will be able to calculate what percentage of participants reported being “Very satisfied”. On the other hand, open-ended questions like “What were the most effective parts of the programme and why?”, or “Do you have any suggestions to improve the programme?” allows space for unstructured and detailed feedback. Another useful tool, both during the programme and after, is to get participants to say what they intend to do as a follow up to the programme. (Instructors can also suggest next steps: see chapter 4.)

Informal Methods

Aside from the more formal and structured methods (like questionnaires and quizzes), there are also other ways of evaluating how successful your programme has been.

✈ Craft or art produced as part of a session can indicate the level of understanding and interpretation about the subject.

✈ Children writing bird-related stories or creating art for local newspapers, school magazines or student forums can reveal the degree of engagement with the subject matter.

✈ To wrap up the bird education programme, you could suggest a topic covered during your programme and ask the children to put together a skit or an exhibition. This allows you to interact with the children during the planning stage as well as post-



Common Kingfisher

performance. Through this interaction you can get an understanding of the knowledge gained by the participants.

✈ The number of children joining the school nature club and getting involved in nature-based activities can be used as another yardstick.

SAMPLE EVALUATION FORM-

Project evaluation and long term followup questionnaire for participating teachers in Bird Buddies, an urban environmental education project in the United Kingdom⁷. Note: This questionnaire contains some items that are related to feedback and others related to evaluation. In order to distinguish between the two, we have marked the questions as E (Evaluation) or/and F (Feedback)

Q1: What was your (school's) motivation for getting involved in this project? Type answer below

Q2 (F): For each of the statements below please highlight the response that best characterises how you feel about it with regards to this project.

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
Information for teachers (e.g. project instruction booklet and weekly emails) were comprehensive	5	4	3	2	1
I felt prepared and confident running the project with my class	5	4	3	2	1
Engagement workshop was well delivered and enjoyed by class	5	4	3	2	1
Project resources provided were age-appropriate	5	4	3	2	1
Class learned about birds from this project	5	4	3	2	1
Class enhanced their science skills from this project	5	4	3	2	1
Class wants to continue bird feeding/watching	5	4	3	2	1
Class used the educational materials frequently during project	5	4	3	2	1
The project was time consuming	5	4	3	2	1
I would recommend this workshop to other teachers	5	4	3	2	1

Q3 (F): For each of the statements below please highlight the response that best characterises how you feel about it with regards to this project.

	Excellent	Good	Average	Disappointing	Poor
Pupil enjoyment/interest level	5	4	3	2	1
Project organisation	5	4	3	2	1
Quality of resources and equipment provided	5	4	3	2	1

Q4 (F&E): Please comment on pupil's enjoyment of project and what they have gained from it. Type answer below

Q5 (E): Please add any anecdotal evidence/quotes from children to illustrate their engagement in the project. If parents have commented on their children's involvement, please tell us how here. Type answer below.

Q6 (E): What do you see as the long term benefits of the project to the school/children? Type answer below.

Q7 (F&E): Which aspects of the project did you like least and why? If you have any changes you would recommend if you were to duplicate this project, please tell us here. Type answer below.

Q8 (F): Which aspects of the project did you like most and why? Type answer below.

Q9 (F): Would you be interested in participating in a similar project in the autumn/winter? Type answer below.

⁷ White RL, Eberstein K, Scott DM (2018) *Birds in the playground: Evaluating the effectiveness of an urban environmental education project in enhancing school children's awareness, knowledge and attitudes towards local wildlife*. *PLoS ONE* 13(3): e0193993. doi.org/10.1371/journal.pone.0193993

Feedback & Evaluation For Longer Programmes

For longer programmes, feedback and evaluation is best conducted throughout the course of the programme. Just as teachers do during the course of a school year, you could design a schedule of feedback (any difficulties they face, or methods that work best) and evaluation (assessing what they have learnt). Doing this also exposes participants to the larger process of feedback and evaluation, such that it becomes a natural

part of the programme and does not need special emphasis. When feedback is sought solely at the end of a long-term programme, participants may react in response to their recent experiences as they may not remember all the details from the initial stages of the programme. Feedback that is spread out periodically throughout the programme reduces such recollection biases.

Long term follow-up

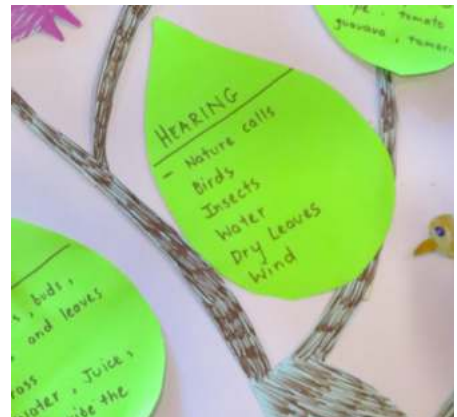
Evaluating a programme immediately after its completion gives us an idea about its short-term impact. However, we often cannot tell whether these short-term effects last for longer than a few days or weeks. Following up with participants after a few months tells us about their continued interest in birds and nature, and allows an evaluation of the long-term impacts of the programme. If you have conducted programmes in schools, you could ask teachers to administer a short questionnaire six months or a year later to assess how involved participants continue to be with activities related to birds or nature, including birdwatching, joining a nature club,

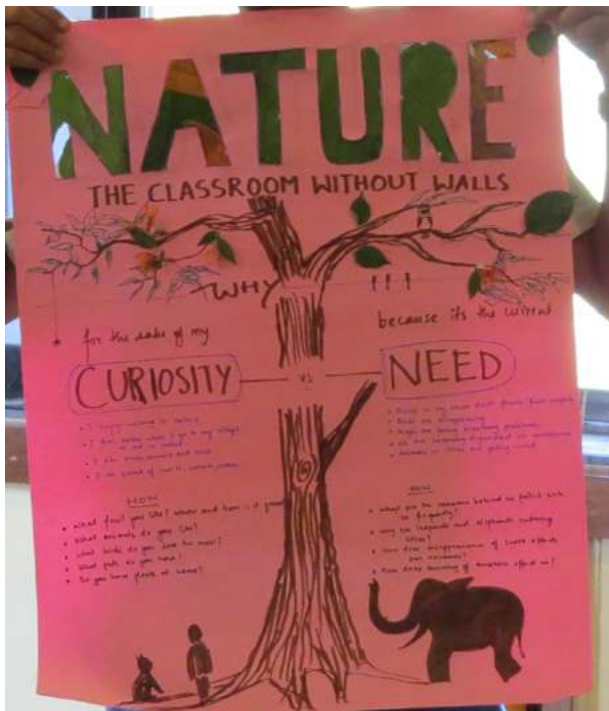
being involved in environmental issues, and so on.

You may find that only a few children have been deeply affected by your programme, and have followed up on their new interest. This is natural, as it is very unlikely that a single programme (especially a short one) will have a profound effect on all (or even the majority) of participants. Your long-term follow-up will help to identify which children are ready to be guided or mentored to grow their interest further — see the next chapter for some tips on this.

CHARTS PREPARED IN TEACHER WORKSHOPS

Posters designed by teachers from Akanksha Foundation (Pune), during the Birding Buddy workshop conducted by Early Bird.





Conclusion

Feedback from participants (and, in the case of younger children, from parents and teachers) is useful to understand how our programmes can be made more enjoyable and satisfying. Evaluation tells us how well we are achieving our goals of building knowledge, skill, empathy and attachment. Meaningful evaluation can be difficult, especially if we are interested in the long-term impact of our programmes, and not just the immediate effects. Long-term follow-up is therefore very useful. For example, positive impacts of our programmes could manifest in children expressing their understanding and ideas through writing and debates, contributing to citizen science programmes, documenting through photography and sketching, and participating in biodiversity monitoring or environmental activism. Further down the line, it can be useful to track whether these children go on to join nature-based organisations, pursue higher studies in subjects related to nature and wildlife, or apply their love and concern for nature in whichever profession they chose. Following up for many years to understand these long-term impacts can be very difficult, but, at the same time, is very rewarding.



Chapter 4

Making an Impact

In this chapter we discuss some important aspects of working with children, including suggestions on getting started, working with special audiences, language and communication, behavioural guidelines, and safety considerations. Those of our readers who are educators by profession may be already using these good practices in their daily work with children. However, we cover these here for others who may not have had any formal training in conducting events and programmes for children.

The chapter also contains ideas for longer term engagement and projects to help children sustain their interest in nature. These projects can also be useful for teachers running nature clubs, or for parents interested in engaging children in a productive vacation activity.

“The best teachers are those who show you where to look but don’t tell you what to see.”
— Alexandra K. Trenfor

4.1

Working with Children

Apart from learning about birds through books, films and websites, it is important for you as an educator to practise watching birds in the field. Most cities in India have formal or informal birdwatching clubs that welcome new birders and have a schedule of walks that they conduct on weekends. If you are an educator who is a beginner birder, you will benefit greatly from joining one of these groups to develop your skills and become part of a growing community of amateur birders. You will get to interact with like-minded people and benefit from the mentorship of more experienced birders. You can then call upon members of the group to conduct sessions at your school, or find volunteers to help you out if you are planning to take your students on a bird walk.

If you are an experienced birder but new to nature education, it might seem like a daunting task to approach schools and organize sessions for groups of children. Perhaps you are not sure if the school will react favourably to your idea, or perhaps you are not confident about your skill in handling groups of children. In this case we suggest starting small and slowly building up your

skills and confidence. You could start with children from your network of family and friends, and try to get them interested in birds by playing games. You could then organize a bird walk at a nearby lake for a known set of people, like children and adults in the community where you live, or volunteer to give a talk about birds for your colleagues at work. These small events will give you the experience you need to be able to approach schools or other audiences, and offer your services to introduce children to birds.

*“Hope’ is the thing with feathers -
That perches in the soul
And sings the tune without the words -
And never stops - at all -”
— Emily Dickinson*

Special Audiences

Sometimes you may get requests to conduct nature education activities for special audiences like visually challenged children. These situations require innovative thinking to be successful, since enjoyment of birds and nature often tends to be heavily dependent on the use of one sense (eyesight) to the exclusion of others. When conducting a session for an audience like this, keep in mind that usually the loss of one of our senses leads to the other senses becoming stronger.



Thus hearing-impaired children might have better eyesight, visually challenged children might have excellent hearing and tactile memory, and so on. Your programme could then be designed taking this into account. For example, an indoor session for visually challenged children might focus on touching different kinds of feathers or life-sized models of birds (if available), listening to the sounds of different birds, and storytelling. An outdoor session at a park or a neighbourhood lake, if possible to organize, would be extremely enriching since nature activities which make use of different senses could be introduced; for example, touching tree bark, smelling flowers, and listening for the sounds of birds and other animals. The children would get an experience of a space different from the one they are used to in their daily lives. It is important to make them feel safe and secure in this outdoor space, and such a session would necessarily have to be organized with the support of the school and its special educators.

Language and Communication

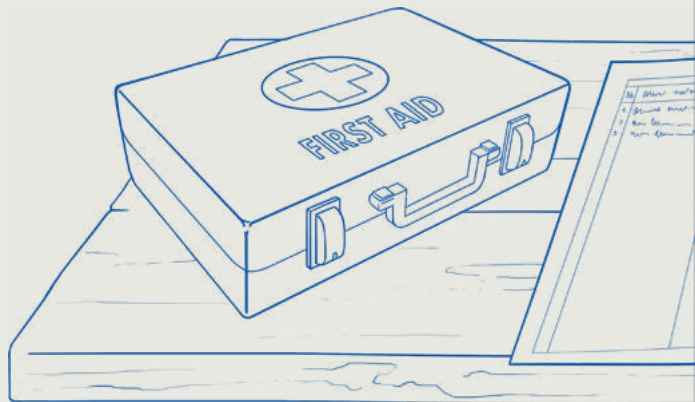
The goal of a nature educator is to encourage the innate curiosity and enthusiasm of children, provide opportunities to explore the natural world, and guide them towards subject knowledge. An effective educator conveys their own interest and love for the subject through verbal and non-verbal communication. When working with children, it is sometimes necessary to let go of your inhibitions and become a child yourself! Especially with younger children, you may find it easier to hold their attention by imitating bird calls, enacting stories or engaging in outdoor activities involving different senses like touch and smell.

Besides using body language to your advantage, here are some general tips and guidelines on how to interact with children:

- ✦ Be warm and patient. For most children, the modules and activities we conduct with them will be a first and novel experience.
- ✦ Treat every child equally and with respect.
- ✦ Respect their privacy. Do not ask personal questions, and do not borrow their belongings without their consent.
- ✦ Encourage every child to participate and be active, but without being coercive: any reluctance should be dealt with sensitively. For example, forcing a reluctant child to pick up a millipede might have the opposite effect to what you intend.

- ✦ Use simple everyday language, without jargon. In some cases you might decide that they should learn a technical term (e.g. the technical term 'habitat' rather than the everyday term 'home'), but it is best to keep this to a minimum, especially for younger children. With older children, learning technical terms might in fact be part of their growth.
- ✦ Try and draw parallels between the lives of birds and the children's everyday experiences. For example, with parents feeding chicks, or linking camouflage to a game of hide and seek.

*“Good teaching is $\frac{1}{4}$ preparation and $\frac{3}{4}$ theatre”
— Gail Godwin*



Safety and code of conduct

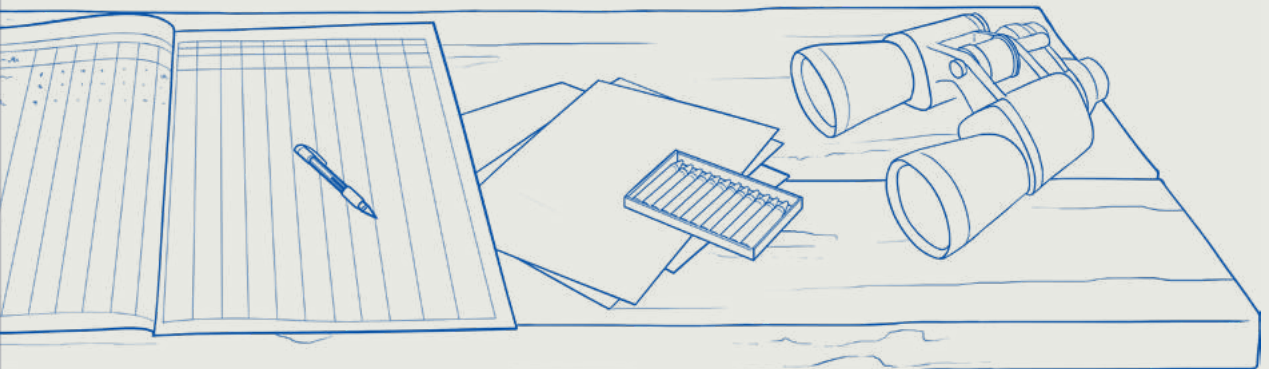
Safety is an important aspect of doing any work with children, whether indoors or outdoors. Especially if you are doing sessions for a school, they have implicitly entrusted you with the responsibility of keeping their children safe for the duration of your interaction. There is an extra legal responsibility when dealing with minors (under the age of 18), and it is important to ensure that this is well understood by everyone in your team, even those informally involved, like volunteers you may enlist for helping out with an event.

Here are a few simple guidelines to follow during any interaction with children. Please take particular care while conducting outdoor sessions that take place outside school premises.

✦ Make sure you and your team have the permissions required (e.g. by the school

authorities, or parents) before you start interacting with children. If conducting an event outside the school premises (e.g. a bird walk at a nearby lake), insist on the participation of at least a few teachers from the school. If not a school event, invite some parents to join.

- ✦ Be sensitive towards any discomfort — physical or emotional — expressed by the children. Listen carefully, and do not dismiss or belittle their discomfort.
- ✦ Any physical discomfort of the students should immediately be reported to the teacher-in-charge.
- ✦ If a female student needs help, ensure that a designated volunteer or teacher (preferably female) attends to her.
- ✦ If any child seeks your help or attention in private, inform the teacher-in-charge beforehand and follow their decision.



- ✦ Always work in an open environment, avoiding private or unobserved situations, and encouraging open communication. As far as possible, make sure the children are within eyesight of a responsible person at all times.
- ✦ Any unusual behavior or concerns, by or towards the students, should be immediately discussed with the teacher-in-charge.
- ✦ Do not allow or engage in any form of inappropriate touching or any contact that makes a child uncomfortable.
- ✦ If taking photos of children during the walk, do ask for permission from the parent or school. It is also a good practice to take group photos rather than a photo of a single child. Ask permission if planning to post photos publicly, e.g., on social media. Do not share photos with anyone else.
- ✦ Do not use abusive or aggressive language towards children, or with other instructors or volunteers.
- ✦ A child should not be punished under any circumstances. If there is a problem, bring it to the attention of the teacher in-charge.
- ✦ For an outdoor event, carry a basic first-aid kit, or ask the school to ensure that one of the teachers carries this.
- ✦ For bird walks, sort children into small groups and instruct them to be with each other at all times. Have a child:adult ratio of 5:1 or lower (adults include teachers, instructors and volunteers).
- ✦ Do not exchange phone numbers, WhatsApp messages, or images with any child during or after your interaction with them. If children (under the age of 18) want to keep in touch with you after the event, make sure this is done through their parents or another responsible adult, like a teacher.
- ✦ Make sure any volunteers who are helping out are known to you and reliable, and instruct them on the rules above. You are responsible for their conduct during the programme.

Finally, these guidelines and rules should not deter you from interacting with or mentoring a particularly interested child. For their safety as well as yours, just make sure the communication has the approval of the child's guardian and is done through the parent or the teacher.

MY BIRD ATTENDANCE SHEET

Spend time every morning and take an attendance of the birds around your house and school. Begin by writing down the date. If you see any of the birds mentioned in the list, mark ✓ in the box next to the bird name, else mark X.

Name: _____ Class: _____ Year: _____ School: _____ Location: _____ 	Bird name (English)	Bird name (Other)	Date: _____	Date: _____	Date: _____	Date: _____	Date: _____	Date: _____	
	Asian Koel								
	Common Myna								
	Black Kite								
	House Crow								
	Rose-ringed Parakeet								

BIRD ATTENDANCE REGISTER

Download and print this from early-bird.in/resources

4.2

Follow-up and Projects

A one-off session with children, even though enjoyable, might not lead to sustained interest or awareness. The importance of follow-up cannot be overemphasized! If you have conducted a bird walk for a school, try and follow up with them a few days or weeks after the walk, to see if they have noticed any interesting birds in their campus or elsewhere. You could also suggest some follow-up activities to them that they can carry out in their school premises. Here are some suggestions:

- ✈ maintaining a daily or weekly bird 'attendance register' (see Project-1 on the following page)
- ✈ collecting clippings of birds in the news and discussing it weekly or monthly
- ✈ organizing an annual bird 'festival'

When possible, repeated bird walks with the same group of participants are likely to spark interest among at least a few of them who may get hooked to watching birds. They could then be pointed to other resources to develop their skills (such as bird walks conducted by other local groups, books, web resources) and once they become comfortable with identifying common birds around them, older children could participate in citizen science by recording and documenting their observations through eBird (ebird.org/india).

“The art of teaching is the art of assisting discovery.”
— Mark van Doren

Here are some project ideas for longer term engagement of children 10 years and older. These activities should be undertaken under the guidance of a teacher or parent. The activities are written addressed to the child directly.

Project- 1

UNDERSTANDING BIRD ABUNDANCES

Concept : Afshan Hussain, 'Step by Step' school

- ✈ Watch birds from your balcony, terrace or school for 15-20 minutes every day. Use the Early Bird attendance sheet to fill in your observations or make your own attendance sheet. Write down which species you see, and how many individuals of each species.
- ✈ After a while (say a month), make a list of all the birds you have seen.
- ✈ Write the total number of individuals of each species observed, from all the lists. Arrange the birds in decreasing order of number of individuals, so that the most abundant species comes first.
- ✈ Create a bar graph with names of the bird species on the x-axis, and number of individuals observed on the y-axis. Are there many abundant species and few rare species, or the other way around?
- ✈ Repeat this activity over a period of a few months, and ideally a year, if you can manage it.
- ✈ See if there are any seasonal changes in the species you see or in their abundance. If you don't make your observations consistently at the same time of day, you can check whether time of day matters too. In general, people say that one finds more species in the early morning than at other times - does your data support this statement?
- ✈ Compare notes with friends from other parts of the city, living in different kinds of neighbourhoods (e.g. with different amounts of greenery in the vicinity). How do the bird species and their abundances differ?



Photo: Bird abundance chart prepared by children belonging to grade 1 and 2 of 'Step by Step' school, NOIDA

Project- 2

WHAT DO BIRDS EAT?

You have learnt that different species of birds eat different kinds of food. While some birds may pick up insects from the ground, others may eat fruits from a shrub or a tree. And there are those who eat live or dead animals. Have you noticed what kinds of food the birds in your neighbourhood eat, and where they find it?

- ✈ Pick a bird and follow it for as long as you can without disturbing it. Maintain a safe distance while making your observations.
- ✈ Binoculars are very helpful here!
Notice where the bird picks up the food from (ground, water, air, vegetation, etc) and fill in the table below.
- ✈ Can you see what it is picking up and swallowing (insects, fruit, grain, etc)?
- ✈ Find at least 10 individuals of the same species (this can be done over several days

or weeks) and follow them in this way.

- ✈ Summarise your observations and describe the diet of each of the species.
- ✈ Make comparisons between the diet of different species.

Through this activity, notice what kind of food resources are available for birds in your neighbourhood. Is there anything you can do to increase the bird diversity? For example growing species of plants or trees that attract birds feeding on nectar and fruits; help increase leaf litter in the garden or park to support birds feeding on insects on the ground; allowing wild grass to grow for birds dependent on small seeds; or helping to maintain a waterbody in your area to support water birds.

Date & Time	Bird species	Food picked up from	Type of Food	Other Notes
7 April 2021 8am	Asian Koel	Tree	Neem fruit	The bird chose ripe fruits and swallowed them whole. It ate about 10 fruits within 45 minutes of observation.

Project- 3

BIRDS AND FIGS



Is there a fig tree in your neighbourhood? Fig trees that are commonly found in towns and cities include the Banyan, Pipal and Cluster Fig trees. Here's a simple study you can do: Visit at least one fruiting fig tree and one fig tree that doesn't have fruits, and spend at least 30 minutes under each tree documenting birds and what they are doing. Note down the following:

<i>Species of fig: Banyan / Peepal / Cluster Fig / Other</i>		<i>Is the tree fruiting? Yes/ No</i>			
<i>Date-</i>		<i>Start time-</i>		<i>End time-</i>	
<i>Bird species</i>	<i>No. of individuals</i>	<i>Feeding on Fruits/ Insects</i>	<i>Other Observations</i>		
<i>Coppersmith Barbet</i>	<i>2</i>	<i>Fruit</i>	<i>The bird was swallowing the fruit whole</i>		

Look at the data you have collected and explore the following points:

- ✦ Was there a difference in the number of species at the fruiting versus the non-fruiting fig tree?
- ✦ Does your answer above change if you examine fruit-eating birds and non-fruit-eating birds (that feed on seeds, nectar or animal life) separately?
- ✦ If the tree had fruits of different colours, which type were eaten more? Which colour corresponds to ripe and which to unripe fruit?
- ✦ What else did you learn from your study?

Project- 4

BEHAVIOURAL RESPONSES TO THREAT

Have you observed how birds behave when they notice some kind of threat? For birds to survive they have to learn to recognise threats and have a plan for defence or escape. Birds learn to recognise a predator from the way it looks or the sound it makes. Once birds recognise the threat, they find ways to escape or in some cases they attack the predator. This depends on the type of threat: whether it is another bird, a snake, a cat or dog, or a human. The way a bird responds

may also depend on its age and experience. Once you are familiar with the birds in your neighbourhood, start to closely observe their behaviour and calls. With constant observation of a particular species, you will soon learn to differentiate between a regular call and a warning or alarm call. If you hear an alarm call, try to look for the threat. Fill in your observations in the table as below

Date and Time: 7 April 2021, 12:30 p.m.

Bird species: 

Yellow-billed Babbler




Threat:    



Cat on the wall

Behavioral observations:

A flock of 8 babblers perched in a tree above the wall, calling in alarm while flapping their wings. This continued for 5 min until the cat left.

Once you have enough observations, you can try and make some comparisons of behavioural response:

-  Behavioural response of different species of birds to the same predators. (Example: does a cat elicit the same or different response from a crow, sunbird, and tailorbird?)
-  Behavioral response of the same species to different predators. (Example: did mynas behave differently on seeing a cat, shikra, snake or human)
-  Did the response to threat change when the bird was alone compared with when it was part of a flock?

-  Did you notice any difference between the behaviour of an adult bird and a young bird towards the same predator?
-  Does the predator show any response to the bird?



Project- 5

NESTING BEHAVIOUR


If you get into the habit of observing birds in your neighbourhood regularly, you will notice birds carrying nesting material at particular times of the year. As you may know, birds use different kinds of materials to make their nests. A crow or a kite might be seen carrying sticks, while munias and sparrows prefer grass or hay. While some birds are particular about the materials required for their nest, others adapt based on what is available in the vicinity. Birds in the city are also adapting to new materials.



You might see birds carrying plastic pieces, metal or wires. If you notice nesting behaviour spend 20 or 30 min observing the bird and note down the following:

Date: 7 April 2021

Time: 08.00 a.m. to 08.20 a.m.

Bird species: 

Red-whiskered Bulbul

Material type:

(Grass, sticks, leaves, cobwebs etc.)

Coconut fibre

No. of trips made:




(carrying nesting material)

3

Other notes:

Both members of the pair visited the garden together multiple times to collect the material.

After you have sufficient observations, see if you can answer the following:

-  Was the nesting material brought by the birds rare or abundant in the vicinity? Did the materials used by the birds have any relationship with how rare or abundant the material was in the vicinity?
-  Did you notice any use of non-natural materials (i.e., of human origin, like string, cloth, plastic, wires)?
-  If you saw a pair of birds (and if it was possible to distinguish male and female of the species), how did they share the task of nest-building?

Important: Any nesting observations, including during the nest-building phase, must be made from a safe distance (safe for the birds, that is!). As a general rule, don't observe nests from closer than 3-4 metres (for small birds) or 6-10 metres (for larger birds). If the birds aren't behaving normally (e.g., they seem hesitant to approach the nest) then you are too close. Note that cats and crows may be watching you and may eat the eggs or chicks when you leave, so you need to be particularly careful not to inadvertently lead these predators to the nest.

Project-6

ROOSTING

Concept: *T Ganesb, ATREE*

Communal bird roosts (i.e., many birds sleeping at night in the same place) are common in cities and villages across our country. These are exciting places to watch birds when they return in large numbers to roost in the evenings. These also provide an opportunity to ask some basic questions like how to count the number of individuals coming to roost, whether different species roost together, and which trees they choose. As you continue to do this over months or years you can also see if the roosting is seasonal. You can then ask a broader question on why some birds roost together and not others, and read about the phenomenon to understand it better.

Some guidelines for how to study communal roosting-

- ✈ Identify a communal roost. These can be easily made out at dusk when you hear the cacophony of many birds at a place. Communal roosts are often in trees or in dense bushes, or within dense vegetation in a field.
- ✈ Position yourself at a safe (for the birds!) distance about an hour before sunset, and count the birds as they fly in to roost. If you can interest three other friends in this project, station yourselves at four cardinal directions (North, South, East, West) from the roost and do a count of birds flying in from each direction. The sum of all four

counts will give you a total count of birds at the roost. Discuss with your friends how to avoid double-counting!

- ✈ Separate the counts into species whenever possible. For example, if you find Common and Jungle Mynas roosting together, try to get a sense of the relative number. Was there one Jungle Myna for every five Common Mynas, or vice versa? Then you can roughly estimate the numbers of each species based on the total count.
- ✈ Prepare a datasheet and record your observations in it.
- ✈ Repeat this once or twice a month, if you can.
- ✈ During the day, visit the roost and identify the tree, get a GPS location with an adult's help, and count the number and species of trees or bushes used for roosting.
- ✈ Additionally, you can also talk to people who live or work nearby to ask them how long the birds have been coming there and how they feel about it.

Later, once you and your team have gained some experience, you can try to map various roost sites in your neighbourhood. You can then see how many are likely to be cut due to various reasons like road widening or other development activities. To protect these trees, you can show your research to your neighbours and community leaders, and advocate for the sites to remain undisturbed.



Project- 7

BIRD CALLS

You have learnt that different species of birds make different kinds of sounds. The sounds also vary based on the situation and what the birds are communicating. Try this activity to get an idea of how varied vocalisation from a single bird species can be.

- ✈ Pick a bird and follow it for as long as you can.
- ✈ Listen carefully to the kinds of sounds it makes.
- ✈ Try to represent the sounds in writing (e.g., 'caw' and 'krrr' are two crow sounds).
- ✈ Describe the situation in which the bird is making this sound (is there a predator around, is it preening itself, is it nesting season, etc).
- ✈ Repeat this with at least 10 individuals of the same species.
- ✈ Write down a library of sounds made by that species (scientists called this a 'repertoire').
- ✈ Remember that males and females (if you can distinguish them) may have different repertoires.
- ✈ From your observations, are different sounds made in different situations? What could they mean?

Repeat this activity with various species.

Investigate the way birds communicate with their own species and possibly with other species of birds.



Conclusion

Our home planet is caught between the multiple forces of climate change, habitat destruction, pollution, and many others. As a consequence, the Earth is likely to look very different just a few generations from now. But what will not change is the essential humanness of every one of us: to be endlessly curious about the world around us, to crave being out in nature, and to thrive best (mentally and physically) when in close contact with wild species and habitats. Nature — wild species and spaces — is necessary for us to attain our full potential.

If you have made it all the way to the end of this Handbook, you don't need to be told this — rather you probably feel the truth of it in your very bones. But of course an increasing number of children and adults are raised and live in sad disconnect with nature. Our work, and those of many like us, has been towards bridging this gap, of healing the resultant wounds. If nature is to persist, and continue to be a source of joy, wonder and solace to humanity, we must collectively re-imagine our place in this world and repair the damage we have wrought. In short, we must act as stewards of the Earth, rather than its exploiters.

This Handbook stems from a conviction that this re-imagining can come only from a feeling of love. Love comes from a sense of belonging, of connection, of familiarity, of interdependence. Accordingly we see the role of a bird and nature educator as being primarily about nurturing and building these feelings in our child or adult audiences. You will have noticed the resultant focus on stories, games, art & craft; and less of an emphasis on stand-alone facts. However, our approach is certainly not the only way; and perhaps not even the best way.

As a manual of bird education, this Handbook is a work in progress, and we rely on your ideas, comments and criticisms to make improvements in subsequent editions. (write to us at team@early-bird.in). We also invite you to join the growing community of teachers and enthusiasts who are passionate about bird and nature education. Do connect with us on email and we can add you to our discussion group for educators. Let us support each other, and work together towards a better world.

Resources

We live in an age of information overload, and this applies to information about the natural world as well. There is now a wealth of material available online on birds and nature, and it may seem daunting to narrow down useful links from this vast pool. Here are a few resources that we have found useful, and that we think will help you in your journey as a birder and nature educator.

If you are just [getting started](#) with birds, familiarize yourself with the names and calls of common Indian birds, through the interactive posters [from Early Bird](#) (5 posters available in 9 languages). To learn more about 100 common Indian birds, download this [free ebook](#) by Dr. Raju Kasambe of [BNHS](#). You could also [subscribe to 'The Flock'](#), an India-focused newsletter about birds and nature, and [listen to podcasts](#) featuring birders, birding destinations and issues. To improve your skills and learn to identify confusing species, refer to this series of [articles](#).

There are many illustrated and photographic field guides available to the intermediate birder. Do refer to Salim Ali's classic 'Book of Indian Birds' for its excellent descriptions, and [Early Bird's pocket guides](#) for region-specific lists and local bird names. You may also find these apps useful. [Merlin](#) is a global app that relies upon the [eBird](#) database to identify photos you upload, and has photos and calls of nearly all species found worldwide (download the India pack for your use). [Vannya](#) is a home-grown app focused on Indian species. Currently there is no app or website which can identify Indian bird species from a recording of its call (Merlin will have this soon), but [indianbirdsong.org](#) has a repository of Indian bird songs, based on the [xeno-canto](#) database.

Once you are familiar with identifying birds around you, do

consider signing up for a [free account on eBird](#) to document your observations. Through this, you can also freely access the [Birds of the World](#) database of all bird species and families. If you'd like to expand your knowledge about birds and ornithology, check out the series of educational videos available on [ornithology.in](#), which cover a range of topics on research and conservation.

As a science educator, you can refer to the series of [innovative textbooks](#) available for free download from HBCSE, and this [science magazine \(iWonder\)](#) brought out by Azim Premji University. Learning units on science and mathematics for Classes 8th to 10th are available through [Vigyan Pratibha](#), one of which is an activity called '[Rediscover, Describe and Draw Birds](#)'.

There are a number of wonderful games and activities available online that can be used to engage children and get them interested in birds and nature. You can explore aspects like flight, feathers & songs at [Cornell's Bird Academy](#), and download lessons and activities for different grades through the [K-12 education site](#). The [North American Association for Environmental Education](#) features a variety of resources, webinars and learning opportunities for professional growth of educators, and articles and research papers are available at the [Children and Nature Network](#).

This is just a sampling of what is available. For a more comprehensive and up-to-date listing of online and print resources to learn about birds and bird education, please visit the [Early Bird blog](#).

Glossary

Here is a brief description of technical terms used in this handbook

<i>Arboreal</i>	Living in trees.
<i>Bill</i>	Beak of a bird. The two can be used interchangeably though 'bill' is preferred by ornithologists ⁸ .
<i>Biogeography</i>	The study of species distributions and ecosystems in geographical space and through geological time.
<i>Bird of prey</i>	Bird that hunts and feeds on animals like reptiles, small mammals and other birds. See also 'Raptor' below.
<i>Brood parasite</i>	Bird that relies on another species (host) to raise its young, by laying its eggs in the nest of the host.
<i>Commensal</i>	A relationship in which one organism derives benefit from another organism, without any negative or positive effect on the other.
<i>Courtship</i>	The process by which birds signal their willingness to mate, which could include displays, songs, offering gifts of food, or preening.
<i>Diurnal</i>	Birds that are most active during the day.
<i>Endemic</i>	Distribution restricted to a given place.
<i>Family</i>	A taxonomic category that ranks above genus. For example, different types of ducks and geese are in the same taxonomic family (anatidae).
<i>Genus</i>	A taxonomic category that ranks above species and below family. Plural: genera
<i>Habitat</i>	The preferred home of a species, which provides it with food and shelter.
<i>Incubation</i>	The process by which chicks develop in the eggs.

⁸ allaboutbirds.org/news/what-is-the-difference-between-a-beak-and-a-bill

<i>Nocturnal</i>	Birds that are active only or largely at night.
<i>Omnivore</i>	Bird that feeds on a variety of food and is not restricted to any specific food group. Sometimes also referred to as a generalist.
<i>Plumage</i>	Feathers of a bird.
<i>Preening</i>	Maintenance behaviour of birds wherein they use the bill to keep their feathers clean and properly aligned. Birds also sometimes preen each other (allopreening) to strengthen social bonds.
<i>Raptor</i>	Any bird of prey, sometimes excluding owls.
<i>Scavenger</i>	Bird (e.g. vulture) that feeds on dead or decaying flesh. Some scavengers (e.g. crows and kites) are also generalists that rely on other sources of food.
<i>Species</i>	Any group of birds that can reproduce with one another and have fertile offspring. Note that this word is used both as singular and plural.
<i>Taxonomy</i>	The science of naming, describing and classifying organisms, including birds.
<i>Territory</i>	Any area defended by a bird for resources.

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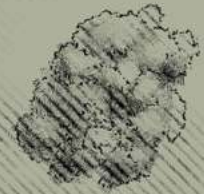
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Children have an innate curiosity and wonder about the natural world, which often gets lost while growing up. How can we nurture and develop this curiosity to build a deep and lifelong connection with nature? We at Early Bird believe that birds provide the answer, and are a wonderful starting point for nature education. This handbook is intended to be a handy reference for techniques and approaches to introduce children to birds. We hope that educators, parents and birdwatchers alike will use the ideas compiled here to spread the joy and wonder of the world of birds.

“If a child is to keep alive his inborn sense of wonder, he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in.”

— Rachel Carson



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