Nature Classrooms
Connecting Learning to the Natural World

Nature Learning Checklist

For teachers and nature educators

These points will help you plan and create effective nature learning experiences within the primary school EVS curriculum. Once you have decided on the topic you are discussing with your students, use this checklist to design your lesson.

1. Is the lesson relatable to students' lived experiences?

At the outset, the lesson's overall structure and framework should include familiar, relatable examples, questions and information drawn from students' lived experiences. In this way, learning is based on familiar and existing knowledge, skills and experiences of students gradually introducing and assimilating unfamiliar, new concepts.

For example…

When learning about **animals,** the topic is usually introduced through examples of animals given in the textbook. However, in many cases students may not have heard of or seen these animals. Instead, we can ask them "What different kinds of animals do you see around you?" and begin a discussion on the topic through the examples of familiar animals that arise. These could be animals from the neighbourhood, birds outside the window or insects on nearby plants. Using these examples as a basis for conversation, in later lessons we can introduce new animals such as ones seen in other parts of the state, country and world.

2. Can the lesson be linked to nature?

Lessons in primary school EVS textbooks tend to focus and emphasise the human, utilitarian experience and relationship with our environment. Notice this in statements and questions that ask, "How are animals useful to people?" or "Importance of plants for us".However, nature learning lessons should showcase and emphasise that all organisms that are part of this world - plants, animals and humans have multidirectional, complex relationships.

From our experience most topics can be linked to nature by asking "How does this happen in the natural world?" This engages children, creating valuable and memorable classroom experiences and builds empathy for nature.

For example…

When studying **modes of transportation,** it can be linked to nature by asking questions that prompt students to think of the ways in which plants and animals travel from place to place. For example, by asking "We travel from place to place in different ways, how do you think animals or plants do this?"Alternatively, we can also spark conversation through a story of transport in nature - for example, how birds fly long distances for migration, or how certain seeds propagate in areas far away from their parent plant by sticking to the fur of moving animals.

3. Does the lesson have local/context specific examples of plants and animals?

In an effort to encourage children to engage more deeply with their surroundings and immediate environment, it is important to integrate more local and contextual examples. This is an opportunity to highlight local names of plants and animals of a particular region. Curating information from libraries, online resources or better still- speaking to local people like community elders, ecologists and others living and working in the area will allow teachers access to local natural history stories and examples. These can take the form of various resources from photographs, newspaper cuttings, stories and sayings about the natural world.

For example…

When learning about **animals and their food,** the topic is often introduced by giving examples of large animals such as lions, zebras and giraffes. However, this is a wonderful opportunity to connect students with their local biodiversity by selecting animals that they may have seen around them. We can introduce this topic by asking the question, “Have you ever seen an animal eat? Which animal? What do they eat and how?”

The students may mimic the sounds and actions of animals they have seen. We can also take them for a walk near the learning space and observe animals eating - it may be a small animal like a bird in a tree or a caterpillar on a leaf.

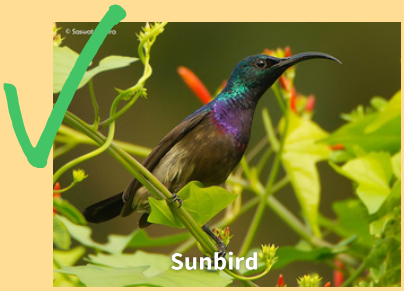
4. Has the information within the lesson been fact checked?

Whether we are sourcing information from the internet, books, or other sources, it is important to make sure that we are giving our students information that’s based on reliable research. This also applies for photographs of any animals and plants included in the lesson.

Try and cross reference using at least two/three (educational) sources. You can start by looking at Wikipedia or other encyclopaedias, and verify information on sites like Discovery, National Geographic, Kiddle or cross check with local subject experts when possible. Whenever in doubt, cross-check with other colleagues or subject experts where possible and be tentative in your claims. We constantly learn new things about the natural world - be open to learning alongside your students and saying, ‘I don’t know for sure, let’s find out together!’

For example…

When studying **types of animals,** the lesson may be introduced by showing children pictures of animals found in the surrounding area which you may have observed. Before showing these pictures to students, cross-check the names of the animals and any information you are sharing with the class on the internet, from books or from a subject expert. Pictures on the internet may often be mislabeled or depict animals that are foreign. For example, these are a few animals that are commonly mistaken for others:



On doing a fact check, you would find that the first image is that of a Sunbird (Hummingbirds are not found in India) but labelled wrong, and the second is an image of an African elephant rather than Indian elephant. Be careful while selecting photographs for your lessons and verify details like location and date of photo.

5. Is the content age-appropriate?

For children to retain and analyse information to the best of their abilities, it is important that they are learning concepts that correspond to their learning level. If the lesson is too simplistic, they may become restless and discouraged. If the level is relatively too high, they may not be able to grasp the concept.

6. Is the lesson inquiry based?

Inquiry Based Learning encourages students to ask questions, learn from their surroundings and experiences, and encourages teachers to tailor classroom experiences to learn through students' questions.

For example…

From Class 1-5, there are a lot of subtopics under **"Plants"** to be introduced to students. For example, after students learn basic information such as plant parts and functions, they may be introduced to more complex topics like photosynthesis. It is important to give our students the introductory information first, so that they may build on their knowledge of more complex topics using what they have already learnt. However, if we try to teach students of Class 2 about photosynthesis, they may lose interest or struggle to understand as the concepts and words are too complex for their learning level. Similarly, if we ask children of Class 5 "Which part of the plant is a leaf?" or "Which part of a plant is the flower?", they may not feel interested or engaged as these questions may be too simple for them.

These Learning and Thinking Tools* help facilitate a curiosity driven learning experience about their immediate natural environment for students.

- **Systematic Observation** of our surroundings through drawings and doodles, stories, notes and recordings, identification of similarities and differences and asking of questions. For example, when learning about water, we may ask students to observe a body of water nearby and note down the various ways in which visiting animals and plants interact with water.
- **Imagination and Creative Play:** using movement, imitation, sounds, games and spontaneous or semi-directed play to understand and engage with the natural world. For example, when learning about sound, we may encourage students to mimic the calls of specific animals to help them understand and retain information through play.
- **Quantitative Thinking:** engaging in activities that involve and develop basic arithmetic skills like counting, organizing, categorising, observing shapes, sizes and patterns. For example, when learning about relative sizes, we may ask students to arrange leaves in ascending or descending order of size.
- **Language Skills:** expressing ideas and experiences through show and tell, stories, poems, songs, riddles and word play. For example, when learning about safety, we may ask students to create and tell stories about animals keeping each other safe.
- **Design and Engineering:** planning, sketching, detailing and constructing models to understand phenomena and processes in the natural world. For example, when learning about houses and shelter, we may ask students to design and create a shelter for a chosen animal out of waste materials or natural material.

*These Learning and Thinking tools are inspired and adapted for a nature learning context from the Small Science Curriculum by the Homi Bhabha Centre for Science Education, Mumbai

7. Are the teaching tools selected appropriate for the learning space and age group?

Using creative and diverse teaching tools can lead to fun, memorable learning experiences for students. However, we must ensure that our chosen teaching tools match the cognitive and motor skills, as well as the learning levels of our students.
Here are a few suggestions:

Nature Walks
Stories
Local field trips
Case studies
Songs
Poems
Anchor charts
Posters
Sensory walks
Puzzles
Books
Board games
Worksheets
Blocks
Toys
Photography
Playing games
Search and observe
Natural history stories
Dance
Drama
Movement
Experiments
Step-by-step demo
Video
Do-it-yourself crafts
Projects
Recipes
Memories and stories
Sound maps
Enactment
Role play
Movies
Proverbs
Myths and folktales
Riddles
Quizzes
Interviews
Local Action
Drawing and painting
Clay work
Nature-inspired models
Flash cards
Origami
Nature maps
Puppets
Show and Tell

In addition, it is important to consider if the tools are chosen to suit the available learning space. You can consider how much physical space you would need to conduct an activity, whether it should be indoors or outdoors, and set agreements with your students for safety especially when working outdoors.

For example…

When learning about **insects,** you may introduce the topic by asking students to observe and draw familiar insects. Students can search for insects in an outdoor space and observe them. Since this involves observation from life, drawing, handling colours and other stationery it may be suited for Class 3 and above. Before beginning the activity, you may divide the students into groups or pairs and instruct them clearly on how long the activity should take and how far they can go.

8. Is the content chosen appropriate for a classroom setting?

While sourcing information and visual resources from the internet or other sources, please make sure that this content is appropriate for the classroom space. Choose written/audio/visual resources carefully, they should be made professionally and include easy to understand and respectful language.

9**. Does the lesson have any innate biases?**

Sometimes, without realising it, we may bring our own biases - gender, religious, cultural, language and other expressions into the classroom. To make all students feel safe, and provide a learning environment that is not critical of their cultural, religious or gender beliefs, we must be careful not to impose our biases on them.

For example…

Sometimes, we may only give examples of women when a lesson or activity relates to the home, kitchen, preparing of food, combing of hair, which may influence and reinforce a child's perspective of gender roles. Another example is that often we tend to say that mummy bird brought the worm or insect to the baby chicks. In fact, in many species of birds both parents are involved in bringing food and raising the chicks. Try as much as possible to be aware and sensitive to not always connect activities to gender.

What other kind of biases can you identify in your teaching?

10. Is the lesson well-being focussed?

While designing lesson plans about the natural world (especially for young students in Primary Schools) it is important for us to keep discussions and content free of very negative and doom and gloom narratives. When topics like plastic pollution, global warming or climate change do come up in the classroom, we must be prepared to handle these sensitively and with empathy. For young children, our aim as educators is to focus on helping children discover the wonders of the natural world without placing the burdens of the many ecological crises our world faces today on their young shoulders.

For example…

When discussing **waste,** we may try to make students understand the gravity of the situation by mentioning topics like water pollution or soil pollution, and how these factors may compromise our future as a species. Students are constantly hearing phrases like “Using plastic is bad” and “Our waste is harming the Earth.” While it is important to address these topics, it may also lead to a lot of guilt, anxiety and fear for the students. Instead, we may discuss waste by performing an experiment - comparing how long it takes for a banana peel and a plastic bag to decompose, and asking students to observe and draw the decomposing banana peel every few days, making notes about what changes they see. This can lead to a conversation about decomposition and microorganisms, which they may even examine under a microscope and draw. They may also do a project documenting the decomposition process of different materials and compare the steps. Students may even want to discuss their feelings about using plastic. This approach acknowledges their feelings and introduces them to a fascinating process in nature, building their interest and wonder for nature.

11. Is the instructional language clear and easy to understand?

Use clear and simple language so that students can understand the lesson effectively. Introduce new words by breaking them down and explaining them with examples. Especially for homework and classroom assignments it is important to break down large assignments into smaller, specific questions and check for understanding before students begin the task.

For example…

Lesson on **Food,** for Class 2 (age:6-7)

Sample Question: *Describe the structure and appearance of your favourite food.*

Here, the words ‘structure’ and ‘appearance’ can be broken down and the question can be written as: *Write 2 sentences about your favourite dish. How does it look - what colour is it? How does it taste? How does it smell?*

12. Does the homework, independent learning and/or assessment task correspond with the objective of the lesson?

Before you engage with a group, think and list down what your lesson objective(s) are. The objective of a lesson defines what skills, knowledge and information from the lesson you would like the students to be equipped with. It is the learning goal of the lesson.To properly assess if the objective has been met, the homework or independent learning task should try and be aligned with the objective.

For example…

Topic: **Colours**
Learning goal/Objective: *Students should be able to identify and name three colours.*

Assignment 1: *Draw three colourful flowers.*
Assignment 2: *Draw three colourful flowers and write or speak the colours you have used.*

Although the first assignment engages with the topic, it does not assess whether students can name and identify colours. The second assignment corresponds to the objective.