



Local Nature-based Learning Programme



Annual Report

2024 - 2025

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Introduction

Nature is often believed to be far away. People can be oblivious to the nearby nature-nature around neighborhoods and the immediate environment. We imagine that we need to go to forests, mountains, or similar places to be with nature. When children are not perceiving the nearby nature, there is a disconnect. Unlearning and experiencing are required to understand and connect to this nature. When we started this project, one of the schools we visited had images of animals, such as ostriches and kangaroos, which the students had yet to see in person most often. There is a lot of literature and other media on exotic wild animals and encounters with them. But there have also been works such as Ranjit Lal's *Birds From My Window And The Antics They Get Up To* and M. Krishnan's *Nature's Spokesman* that call for engagement with local or nearby nature.

Neighborhoods can be powerful learning spaces to connect to local nature. We started by taking the children to the parks next to their schools and telling stories about trees to create a fascination for the "nearby." By the time we came to groups such as ants and insects, it captured children more to see fascinating things around their schools. Most of these activities were based on school campuses and public parks, which shows how invaluable the commons are as learning spaces. Wetlands, grazing areas, and parks provide innumerable opportunities to learn and explore nature and are extremely important for children's well-being. A 2018 study by Sivajanani Sivarajah and colleagues in hundreds of Toronto District School Board schools shows that the diversity of trees around a child's environment can positively impact the learning abilities of primary school students (Sivarajah, Smith, & Thomas, 2018).

We designed this local nature-based learning project intending to increase the connection of students in Chennai with the nature around them. Another aim of the project was to understand the impact of local nature-based learning on other capacities of children. The project included three main elements: a curriculum-aligned nature-based education programme, nature-based learning classroom resources, and close observation of students and their participation. The project was conducted from August 2023 to March 2024 for Grade 8 students of five government schools in Chennai. The schools for the study were chosen based on their nearby access to green spaces, such as public parks.

Each session of the nature-based learning programme had an active learning component where students engaged with local biodiversity and society. The programme had three pillars around which all the activities were designed: direct engagement, local relevance, and interconnectedness. We call this an 'Action Pedagogy' (see Figure 1). Each class had a 1.5-hour session every fortnight (excluding school holidays, exams, etc.) and around 14

sessions yearly. Throughout the programme, nature-based learning materials were progressively added for children to engage with. These include guidebooks, bingos, surveys, activity sheets, etc., based on local biodiversity. Each session is anchored by a teacher(s) from the school to ensure the safety of the children and 2 to 3 facilitators from Palluyir.

We aimed to implement an excellent place-based nature education programme and study its effects on children, especially for their critical thinking, curiosity, interpersonal skills, and nature connectedness, as well as their motivation to learn, academic performance, mental health, and environmental sensitivity. Such a project is a first of its kind in India and Tamil Nadu. We hope it provides important insights into the applicability of nature and climate literacy and its many benefits, especially to vulnerable communities, and informs the state's future education policy.

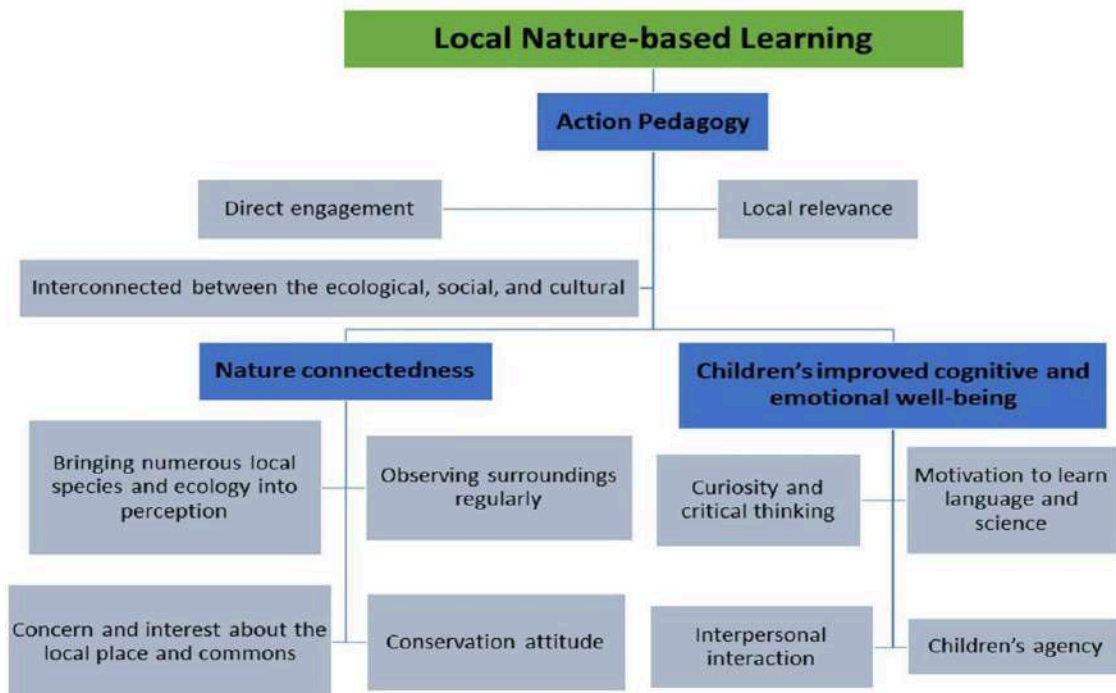


Figure 1. Action pedagogy with its methods and expected outcomes

Why Nature-based Learning?

One of the most comprehensive meta-reviews on this subject is by Ming Kuo et al. (2019), which brings together nearly 100 studies from across (primarily the Western) world showing how 'nature' in education benefits a child's learning and the learning context. They show this leads to academic achievement, personal development, and stewardship for one's ecology and other species. This is summarized in the diagram below -

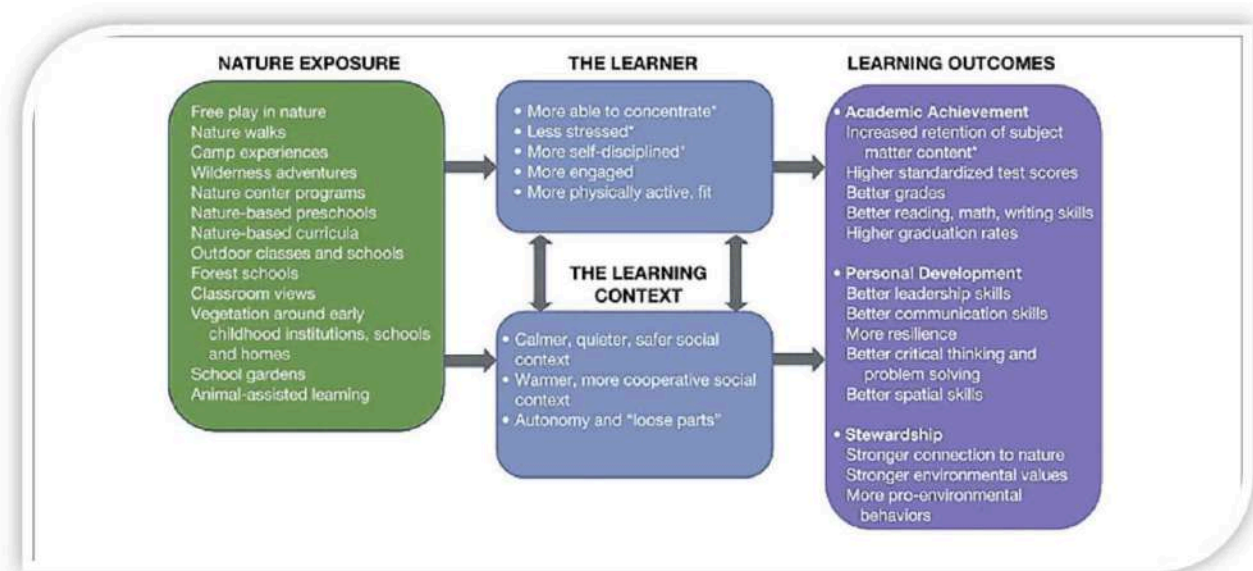


Figure 2. How nature can aid learning outcomes Source: Ming Kuo et al., 2019

The authors of this meta-review study also note that - "Not only can nature-based learning work better for disadvantaged students, but it appears to boost interest in uninterested students, improve grades, and reduce disruptive episodes and dropouts among "at-risk" students. Nature-based learning may sometimes even erase race and income-related gaps.... "If nature is equigenic, giving low-performing students a chance to succeed and even shine, the need to document this capacity is pressing."

Palluyir's work with coastal communities and children and youth from vulnerable backgrounds has repeatedly shown that nature-based learning can be an equalizing force.

The benefits of nature in education are found to be both academic and socio-emotional. For instance, Nancy Wells' work (2021) shows how access and engagement with nature can create mental resilience among children, especially those in poverty and facing adversity. Nature engagement can also reduce behavioural and emotional dysfunctions amongst at-risk students (Flouri, 2014) and improve affective and cognitive development across ages (Kellert S.R., 2002). There is a significant connection between nature-based learning and better mental health (Harvey et al., 2020). Some studies find that nature can reduce symptoms of ADHD in children (Faber Taylor et al., 2001). Another study by Camasso and Jaganathan (2017) investigates the impact of a programme called 'Nurture Thru Nature' whose curriculum was aligned with those of the mainstream subjects of elementary school children. They found significant improvements in the children's grades in science, math, and language in the programme compared to control groups. These findings are also echoed in other studies (Hodson, 2017). Nature-based learning has been shown to improve children's skills in language and interpersonal collaboration (Fjortoft, 2000, Moore & Wong, 1997) Similarly, knowledge retention is also markedly greater among students who had biology lessons linked with the local ecology outdoors (Fägerstam & Blom, 2012). It has also been shown to reduce absenteeism in school (MacNoughton, 2017).

The Local Context

Studies described in the above sections are almost absent from the Indian educational research and policy field except for anecdotal examples from numerous practitioners. The benefits of nature-based learning, especially for the urban working class and socio-economically backward in the Indian context, have never been studied. Similarly, the importance of nearby wild and accessible wild spaces like parks, marshlands, and grasslands in children's literacy and well-being has not been investigated. If nature-based learning can improve children's academic performance and overall well-being, it could make a significant difference in the lives of children in Tamil Nadu, especially those from socio-economically challenged backgrounds. If meaningfully and place-sensitively implemented at scale in the richly biodiverse state of Tamil Nadu, nature-based learning could significantly improve literacy rates, pass rates, employability, stewardship for the environment, and dropout rates.



Chennai is the capital city of the state of Tamil Nadu, situated along the Coromandel coast. The mean temperature of Chennai is around 28.6°C. During the northeast monsoon, Chennai gets a lot of rain, and the annual mean precipitation is 140 cm. Tropical dry evergreen forests, scrub forests, grasslands, mangroves, coastal areas, and dunes are some of the habitats in the city. This habitat variation shows how diverse the flora and fauna of Chennai are. Mammals such as Jackals and Blackbuck, reptiles such as Rat Snakes and Fan-throated Lizards, and birds such as Yellow-wattled Lapwings, Spotted Owlets, and more common Indian Robins, not to mention a variety of insects, amphibians, and fishes enrich the biodiversity of the region.



Figure 4. Common Jay butterfly, Common Club-tail dragonfly, Cattle Egret, and Painted Frog are integral parts of Chennai's biodiversity.

In 2022, Greater Chennai Corporation released the Chennai climate action plan. This document showed how critically climate-vulnerable the city is. A Council of Energy, Environment, and Water report shows that Chennai is India's second most climate-vulnerable city. This being the case, good nature and climate education become essential during an increasing climate crisis, especially for vulnerable communities towards adaptation, mitigation, and action. Good climate education contextualized in the nearby ecologies has been studied to effectively reduce climate change impacts (EC Cordero, 2020). This has been echoed in several United Nations reports as well. It would be new and vital to investigate the relationship between climate mitigation/adaptation and good, locally relevant nature and climate education pedagogy in the Indian and Tamil Nadu context.

Curriculum

We formed a curriculum that is based on the following core aspects-

1. Chennai's biodiversity
2. Climate and seasons
3. Action pedagogy
4. Children's developmental stage

Our nature curriculum is based on the action pedagogy we are evolving. This action pedagogy has three pillars: direct action in any form of learning, local relevance in any form of learning, and interconnectedness between various subjects, concepts, and skills. It also weaves with it the importance of local nature/biodiversity for the learner's cognitive, social, and emotional well-being and for developing their stewardship of the local landscape.

Expected Outcomes

Through this study, we intend to lead to specific improvements in students' knowledge, attitudes, and the learning environment. They are as described below-

1. Significant improvement in epistemic curiosity, driving the student to learn better and involved in intrinsically motivated learning in the classroom and at home as well
2. Significant improvement in critical thinking skills, allowing the students to think for themselves, make interconnections and learn better
3. Improved knowledge of local biodiversity and ecosystems leading to stewardship of the local environment and awareness of ecological issues
4. Significant improvement of children's happiness in learning contexts and capacity to work with others by developing interpersonal skills.

Methodology

From the boundaries of Chennai city, we have appointed the schools close to parks and green spaces across North, Central, and South Chennai. We did a pilot survey of all the selected parks and decided to concentrate on vegetation since it is the most accessible form of biodiversity. The Corporation Park in Besant Nagar, which is adjacent to the CMS Gandhigramam School, has about 25 species of trees. Robinson's Park, a few meters away from CUHS and Chennai High School, has about 55 species of trees which is the maximum species diversity of all the parks, and Independence Day Park has about 30 species of trees. A few ornamental and indigenous plants were also present in the park. Jaladianpet the school campus has about 22 species of trees. The class strength in schools ranged from 20 - 45.

The final list of school and park combinations we decided to work in is as follows-

No.	School Name	Zone	Parks	Distance to Parks	Class Strength
1.	Chennai High School, Manikanda Street	North Chennai	Robinsons Park	230 m	57 35 Girls 22 Boys
2.	Chennai Urdu High School	North Chennai	Robinsons Park	600 m	49 17 Girls 32 Boys
3.	Chennai Boys Higher Secondary School, Nungambakkam	Central Chennai	Independence Day Park	230 m	13 Boys
4.	Chennai Girls Higher Secondary School, Nungambakkam	Central Chennai	Independence Day Park	350 m	39 Girls
5.	Chennai Middle School Gandhigramam Kalakshetra Colony	South Chennai	Corporation Park, Beasant Nagar (Near Kalakshetra)	10 m	45 23 Girls 22 Boys
6.	Chennai Middle School, Jaladianpet	South Chennai	-	-	78 47 Girls 31 Boys

To help us assess pre and post-project changes and to generate primary data on students we work with, we designed a baseline survey that included standard columns for personal information, including name, date, and class. To assess the student's level of natural connectedness and their ability to observe local ecology there were another 9 questions provided to obtain detailed responses from the students. This helped in assessing the mindset and attitude of the students towards nature. It allowed us to identify gaps in children's understanding or misconceptions about the environment, which helped tailor the curriculum to resonate with their energy levels.

In addition to the baseline assessment, an icebreaker activity -Thiran Thedal (People's Scavenger Hunt)- was provided to establish momentum and facilitate a meaningful connection with the nature educators. It was employed to assess the interpersonal dynamics among the students within the class.

Term 1 Topics covered:

- **Baseline:** It is a simple questionnaire to assess students' prior level of understanding about nature, conducted before the start of sessions.
- **Tree walk:** This outdoor activity introduces students to local tree species and common leaf shapes.
- **Soil organisms:** Students explore soil life to learn about the organisms and species that live in it.
- **Ants around us:** Ants around the school campus/ park are observed by the learners and commonly seen species are identified with the help of a guide.

Term 2 Topics covered:

- **Midline:** It is a questionnaire used to assess students' progress after a few sessions(2-3), helping to plan future sessions effectively.
- **I notice, I wonder, It Reminds Me Of :** learners observe flora and fauna outdoors and write what they notice, wonder about, and are reminded of, encouraging them to think in different perspectives.
- **Nature Senses:** Students learn about senses used by other organisms and the wondrous ways they apply them in their specific modes of living.
- **Frog Calls:** The learners are acquainted with distinct calls of local frogs through a simple writing exercise and a sound quiz game.

Term 3 Topics covered:

- **Bird Calls:** Students were taught how to identify, and then quizzed on different calls of birds commonly spotted in Chennai
- **Wilderness Cards:** The class was split into groups and introduced to an educational card game based on the different ecosystems found in Chennai
- **Vedanthangal Bird Sanctuary:** Students were taken to Vedanthangal Bird Sanctuary to observe and learn about migratory and wetland birds.

Results

Baseline

The Project started in July 2024. We are engaged with 281 kids, all Class 7 students, from six schools in Chennai through the local nature-based learning programme. The baseline survey showed that trees are the first word that they remember when they hear the word ‘nature’, although the level of response varied across schools (Fig 1). As a part of the project, we wanted to understand where students learn about nature to describe the role of education and learning spaces in students’ lives. Given the increasing use of technology, quite a few students reported television and phones as mediums to learn about nature, even though school, books, family and friends were also a part of the list (Fig 2). In the baseline survey, students also expressed fear of different things they connected to nature (Fig 3). When asked when they felt most connected to nature, students responded with ‘PT period’ and ‘on the way back home from school’, which exhibits the importance of outdoor sessions in developing one’s nature connectedness.

What do you think of when you hear the word ‘nature’?	
“Trees, Plants, Flowers, Agriculture”	“Flowers”
“Whenever it rains and the wind breeze makes me happy”	“Mountains, Trees, Animals, Fresh Air”
“Beautiful”	“Fish, water, Foreign”
“Nature is trees and lightning”	“Trees, Wind, Water”
“Trees, Trees with Birds”	“When I hear the word nature, I remember my Grandmother saying “Nature is always Important”
“Forest, Trees, Plants, Creepers”	“Happy”

Fig 1: Students’ responses to the open-ended question, “What do you think of when you hear the word nature?”

Where do you get to learn about nature the most?	
"Mountains, Parks, Books, School"	"Teachers and TV"
"Vandalur"	"School"
"News, Teachers, Friends"	"Friends"
"Science, Social"	"Book, TV, Teacher, Parent"
"School, science textbook"	"Village"

Figure 2: Students' responses about mediums of knowledge about nature

Are you scared of any creatures that you see in nature?	
"Thorny Plant, Milkweed, Snake,Lion"	"Lion,Snake, Lightning,Thunder,Tiger"
"Bear,Tiger,Snake,Lion"	"Snake,Cow,Crocodile"
"Tiger,Lion,Butterfly,Snake"	"Bear, Monkey,Honey Bee"
"Dog,Tiger,Lion"	"Rat"
	"Whenever I touch the Squirrel I'll have a fear"

Figure 3: Students' responses to any creatures in nature that they are scared of.

The sessions following the baseline activity followed the structure below -

1. **Orientation** was conducted to analyse the students' readiness for the session. The students were introduced to the session with interesting stories and were oriented on how to go about the activities involved.
2. **Observation and journaling** by the students played a pivotal part in the activity, which required the students to engage in observations and record their findings in the provided journals.
3. **Reflection** by both the students and the facilitators at the end of each session by discussing the activity and its results.
4. **The distribution of resources** followed this. The students were provided complimentary guides to inculcate the habit of observing the environment and local ecology.

Term 1

1. Tree walk

Outdoor Session

Materials/Tools Used: Common Trees of Chennai, visual aids and journals.

This activity's primary objective was to acquaint the students with the local ecology and cultivate nature-connectedness. The facilitators briefed upon the “wood-wide-web”- the intricate fungal network that interconnects the roots of trees and plants within an ecosystem. To facilitate a deeper understanding, pictures were presented within the classroom. Each student had a comprehensive guide to "Common Trees of Chennai" and a dedicated notebook for journaling their observations in the nearby park. The kids were given a maximum of half an hour to make their observations of leaf type, shape and Bark type of trees that they see around. Subsequently, a brief group discussion ensued, wherein the students were encouraged to share their respective observations.



Fig: Tree Walk session at Corporation Park with students from CMS Gandhigramam

2. Soil organisms around us

In-school Campus Session

Materials/Tools Used: Journals.

The primary objective of this activity was to help students understand the importance of soil and the role of soil organisms. They were taken to the park for the activity. Their task involved observing soil organisms and note down the colour, descriptions including their behaviour, microhabitat and the name of the organism. After a dedicated half-hour for this activity, we had discussion on how soil organisms play a key role in nutrient cycling.



Fig: Students keenly observing a Lemon Pansy (Butterfly) at Jaladianpet for Soil organisms around us session.



Fig: Discussion on the importance of soil organisms and their observations at CHS Manikanda St.

3. Ant Watch

In-school Campus Session

Materials/Tools Used: Common Ants of Chennai Poster, visual aids, magnifying glasses, and journals.

The Facilitators started the session with the “Green Island story” Following this, we shared the importance of ants as biological pest control, how they help in soil aeration by transferring air to soil and roots of plants, and bioturbation (transfer of nutrients from one place to another)). The primary objective of this activity is to acquaint the students with simple Nature Journaling techniques and increase their observation skills. The students were given a task to observe around 5-10 species of ants on the school campus. One example of drawing an ant including how to observe the size, colour, behaviour of ants was done in class. We had visual aids related to ant tournaments (fight between two ant soldiers of the same species where the winner takes over the habitat), ants and aphid relationship, and live rafting (a behaviour exhibited by ants in floods when ants want to move from one place to another, all the ants clump together and float in the water protecting the queen, larvae, and eggs in the centre and the workers use their legs as paddles and moves to another location) to anchor and invoke students’ wonder and attention.



Fig: Students keenly observing an Acrobat ant for the “Ants around us ” activity at CMS Gandhigramam

Term 2

1. I notice, I wonder, It Reminds Me Of

In-school Campus Session

Materials/Tools Used: Visual aids, Posters to spot and list creatures, and journals.

Students were introduced to nature's intricate patterns in Mimicry and camouflage with examples of Neem Katydid, Eye spots of Lemon Pansy, etc. Students were split into groups and given Posters from 'There's Nothing There!' and asked to list everything they could spot in under a minute. During the Activity they were required to document their observations by categorizing them into three sections: "I notice," "I wonder," and "It reminds me of." The facilitators guided the students by helping them observe and identify creatures that are found on the campus and also to keep the students engaging they shared stories and facts of creatures that were spotted.

During the discussion, We gave the example of Indian soil biologist and ecologist Sultan Ismail who coined the term 'Vermicompost'. He was able to find the role of earthworms by observing them. Students were helped to ponder how Scientific Research is done only when one begins to notice things around them.



Image: Facilitators discussing during "I notice, I wonder, It Reminds Me Of" session at CMS Gandhigramam

2. Nature Senses

In-school Campus Session

Materials/Tools Used: Senses of Nature activity sheet.

Students were oriented to the types of senses, and the facilitators introduced them to examples of creatures and engaged them in a discussion as to how and why they use their senses. A few examples: Herons use 180° Vertical vision to see fish below and predators above; Spiders can sense minute photons with their hairs, etc. The activity sheet with 6 questions (Refer page ..) was explained indoors, and they were given around 30 minutes outdoors to complete the activity sheet.

During the discussion, the Facilitators shared how the villagers of Vedanthangal are celebrating Deepavali in silent mode without bursting crackers that create sound affecting the migratory birds roost, and connecting it to how bursting crackers in urban areas can disturb animals.



Image: Students exploring their campus for the “Nature Senses” session at Chennai Urdu High School

3. Frog Calls

Indoor Session

Materials/Tools Used: Common Frogs of Chennai Poster, visual aids, Bluetooth speaker, and journals.

Students were oriented on the importance of frogs, their life cycle, and how to identify their calls. About 8-10 local species of frogs such as Jerdon's Bullfrog, Asian Common Toad, and Indian Cricket Frog were introduced to the students and their pre-recorded calls were played. Students were able to identify the frog calls by filling in the observation table having adjectives, "Words I hear" or "sounds like", and the name of the frog. Frog stories using visual aids such as a poster of the life cycle of a frog and images of tree frog's egg sacs were also shared to grasp students' attention.

The students were also handed a Common Frogs of Chennai poster which has a QR code that links to the pre-recorded frog calls for students to observe and identify frogs around their neighbourhoods.



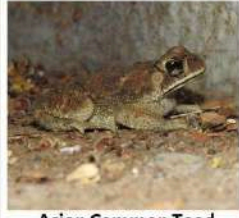
Image: Educator explaining the different frog calls during the Frog Calls session at Chennai Urdu High School



Frogs of Chennai

சென்னையின் பொதுவான தவளைகள்

Scan the QR code to listen to their calls



Asian Common Toad
Duttaphrynus melanostictus
ஆசியத் தேரை



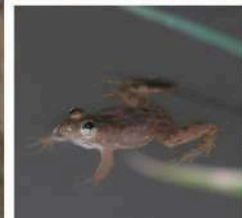
Chunam Tree Frog
Polypedates maculatus
மரத்தவளை



Green Pond Frog
Phrynomaderma hexadactylus
பச்சை தவளை



Painted Frog
Uperodon taprobanicus
செந்தவளை



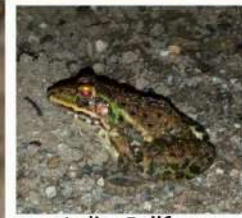
Common Skittering Frog
Euphlyctis cyanophlyctis
நீர்த்தத்தித் தவளை



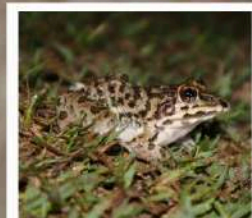
Indian Balloon Frog
Uperodon globulosus
இந்திய பல்லுத் தவளை



White-bellied Pug-snout
Uperodon variegatus
சப்பைமூக்கு தவளை



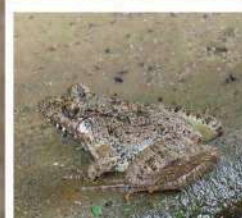
Indian Bullfrog
Hoplobatrachus tigerinus
இந்திய பெருந்தவளை



Jerdon's Bullfrog
Hoplobatrachus crassus
குலத்து பெருந்தவளை



Indian Burrowing Frog
Sphaerotheca breviceps
இந்திய துளையிடும் தவளை



Indian Cricket Frog
Minervarya sp.
சிரிப்பொலி தவளை



Ornamented Pygmy Frog
Microhyla ornata
புதர்த்தவளை

Image: Frogs of Chennai poster created for the Frog Calls session

Term 3

1. Bird Calls of Chennai

In-school Campus Session

Materials/Tools Used: Bird flashcards, bird calls from eBird, Bluetooth speaker, headphones, and journals.

Students were oriented with the importance of bird calls by giving the examples of many indigenous communities living in and around forests who rely on bird alarm calls to avoid danger such as the presence of a large predator and a lot of incidents where birds tend to find disasters like tsunamis or gas leakage before us. The primary objective of this activity was to increase students' listening skills, identify local bird calls, and improve descriptive writing. We started with an example of a bird call and let the students describe the bird calls and fill in the simple sound observation table having adjectives that described the nature of the call, “Words I hear” or “sounds like”, and the name of the bird. Students were introduced to calls of about 8-10 local bird species such as the Black Kite, White-throated Kingfisher, and Flameback by using their pre-recorded calls. We also had a bird call quiz and wound up by giving them suggestions to listen to local bird calls at their home.



Facilitators explaining the activity on bird calls to the students of CHS Manikanda street.



Students of Chennai Girls School Nungambakkam discussing with their teammates to try and identify the bird call being played during the quiz.

2. Wilderness Card Game

In-school Campus Session

Materials/Tools Used: Wilderness Card game set

Wilderness card game is an ecosystem based game through which different aspects about local nature can be learnt in a fun way. This game consists of four ecosystem cards for each player in a team of four. Through this, the learners get introduced to four of the major ecosystems we find in and around Chennai. Each player gets a bunch of species cards with some information about it that helps them know more about those species. For example, the zones they live in, their diet, habitats and so on. The game also has a tricky part with action cards to make it more fun and challenging to the players. These cards make them aware of all the threats our ecosystems face and creates a conservative attitude.

Basic rules of the game and other details about it were explained to the learners at the start and the players teamed up in pairs. They enjoyed collaborating with and competing against one another, whilst learning about the nature of the different ecosystems in our city. The different ecosystems of Chennai were introduced and students were split into smaller groups and taught how to play the wilderness card game. Each student got to take home a Wilderness card set.



Students playing Wilderness card game in groups



Students of CMS Jalladianpet split into small groups and teams of two within the group for Wilderness card game



A facilitator helping the students play Wilderness Card game by explaining the basic rules of the game.

3. Field Trip to Vedanthangal Bird Sanctuary

Materials/Tools Used: Vedanthangal bird bingo, NCF Bird guide, bird beaks and feet chart

Vedanthangal was chosen as a birding site for this project due to its high species diversity and the appropriateness of nesting times. It is an excellent place to begin birding as it allows for the observation of birds up close, making it possible to appreciate their behaviors and characteristics in detail. Vedanthangal Bird Sanctuary is spread across 74 acres in the Chengalpattu district and is a protected site under the Ramsar Convention. Vedanthangal is regarded as an important “bird and biodiversity area.

”The lake has been protected by the local community at least since 1798. The wetland also plays a vital role in nutrient cycling and groundwater recharge, which supports irrigation and agricultural activities in the immediate vicinity. The bird excreta from the sanctuary acts as a natural fertilizer and offers numerous benefits to farmers, including improved soil fertility, enhanced crop yields, and sustainable agricultural practices. This sanctuary provides a space for education and research.

Vedanthangal being one of the extensive nesting grounds, was an ideal spot to study the morphological features of different species of birds. The posters used were found helpful in this regard. The students were given a bingo sheet on bird behavior, which was used to observe various behaviors of the nesting birds of Vedanthangal. We also used posters depicting different birds' beaks and feet. Students were able to differentiate between bird species based on their beaks and feet and learn about their adaptations.

Students were split into pairs, and guided to observe and make notes of the bird characteristics. A pair of binoculars was given to each pair of students, and they were asked to spot the birds, observe their traits, and make a note of the same in the observation table provided to them. They were also asked to analyze the behaviors they witnessed based on the bingo sheet provided to them. The educators narrated small stories about different species to make the session more exciting, and the students were encouraged to ask questions. After the activity concluded, students were asked to select a bird of their choice and then tasked with reading out its characteristics and others had to guess what bird it was. This exercise encouraged participants to actively observe and engage with the features and behaviors of different bird species.



வேடந்தாங்கலில் கண்டுபிடி



மீன் தின்னும் பறவை



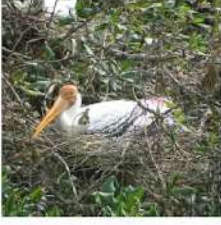
கூடு கட்டுவது



இறக்கைகளை
காயவைப்பது



இரை தேடும் வாத்து



பெற்றோர் கவனிப்பு



இறகுகளை
ஒன்றுசேர்த்தல்



சேற்றை உந்தும்
பறவை



பழம் தின்னும்
பறவை



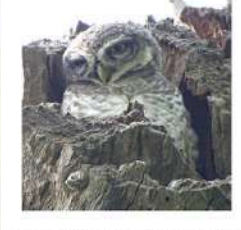
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வேட்டையாடும்
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வயலில் உணவு
தேடுதல்



மரப்பொந்தில் கூடு



மாசுபாடு/ நீர் நிலை
ஆக்கிரமிப்பு



பல பறவையினங்கள்
சேர்ந்து கூடுகட்டுதல்



கம்பிகளில்
பறவைகள்



பூச்சி தின்னும்
பறவை



Students of CMS Jalladianpet observing water birds up close on their visit to Vedanthangal Bird Sanctuary.



Fig: Discussion being conducted by the facilitators at the end of bird watching session at Vedanthangal Bird Sanctuary.

4. Endline Session

In-school Campus Session

The Endline feedback survey was carried out with the students using a questionnaire that included straightforward questions about their opinions on the sessions. The survey sheet covers feedback questions about all sessions throughout the year. The facilitators read and explained each question to the students, encouraging them to provide honest and personal feedback. Analyzing the survey data will offer a comprehensive view of the students' preferences about the sessions. This data will also be compared with the data obtained via the Baseline survey, which had similar questions to assess the students' learning progress over the year.



Fig: A facilitator from Palluyir explaining various sections of the Endline questionnaire before distributing it to the learners

Observations and Outcomes

That meaningful forms of learning could happen outdoors and through local aspects of the natural world seemed rather new for both children and teachers. Learning, in its conventional sense, was associated with the indoors upon desks and chairs, and fun was associated with the outdoors. This was an important binary beginning to get dissolved during these sessions, and both could happen together. Many children were excited to visit the outdoor spaces on their campus and were keen to observe the trees, insects, and other aspects of nature in it.

During the tree-observation session, many children across schools were moved by the ‘wood-wide-web’ story. They were surprised to discover so many tree species in their vicinity. During the activity, children’s observation skills could be seen distinctly improving, as is noticeable in their journals. One of the students from Nungambakkam Girls Higher Secondary School also brought a newspaper cutting having the Wood Wide Web story to show us the next class.

After the “I notice, I wonder, It Reminds Me Of ” many students expressed that the activity changed the way they see their school campus.

The Wilderness Card game was an effective and fun way to learn about the local ecosystems and species for students. They were completely immersed in the activity after the rules of the game were made clear.

For most learners, visiting Vedanthangal Bird Sanctuary was a first-time experience. Being able to watch birds up close helped them notice all the intricate morphological details and make efficient observations. Students also got a chance to observe a few interesting behaviours exhibited by birds like the hunting technique of a darter. Through the discussion at the end, they got to share their observations with their peers as well.

Difficulty and/or reluctance to write and draw was observed in most children. These reluctances were observed to decrease as well through the activity. Many children showed intrinsic motivation and interest to learn the spellings and sentence structures in English or Tamil to be able to complete/participate in nature activities. Many children worked in groups and helped each other. Many children’s boldness to share their thoughts, observations, and questions in the significant group discussions at the end of each session increased too, and they began communicating with more openness and courage. Children who already had an interest in learning about the natural world immensely enjoyed these session

Student Journals

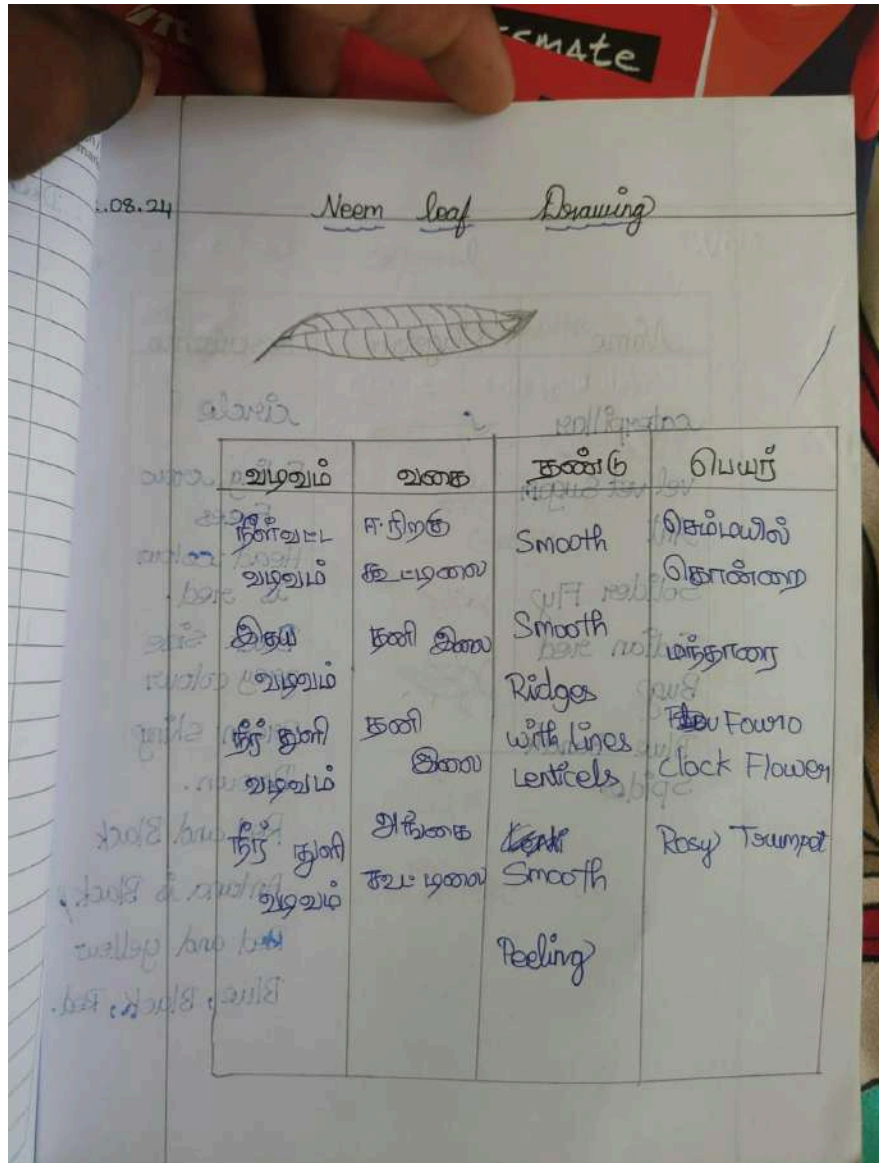


Fig : A Tree Observation Table with a description from the 'Tree Walk' Activity

5/9/2024




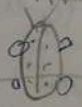






name	diagram	Description
ant		black
Red ant		Red
கொம்பு		கொம்பு
வண்டு		Red
ஒள		காம்பி
இலை		பச்சை
வெறு		காம்பி
பட்டம் பூச்சி		சிவப்பு
கல		காம்பி
நில சிவப்பு		நில

Fig: Journal image of students having detailed descriptions about various organisms living in the soil.

I Notice	I Wonder	It Reminds me of
என் குழந்தையின்	என் குழந்தையின்	என் குழந்தையின்
Colour, Size, Shape Behaviour	why, what, when, How	It looks like "- " It reminds me of my
Food Brown and grey Medium. Rectangle Sleep. Sit	Why is it sit?	Scared
Mushroom	Mushroom Summer and Rainy Season	cute
White, Small, Circle	என் Season ல் உருவம்.	beautiful
Spider	Spider என் சுருட்டி காய்விடுமீ.	
Brown, grey, Black/ Small sit		

1. Insect → Ant
2. Tree
3. Plant
4. Flower
5. Bird
6. Animals - Garden - Lizard

Fig: A tabulation from "I notice, I wonder, It reminds me of" activity done detailedly by a student.



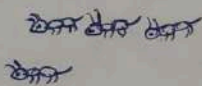

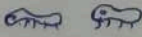

Name	Diagram	Description.
Butterfly (Yellow Type)		Yellow butterfly very beautiful
Dragonfly		Dragonfly is very cute
ant		ant is very small size. Its colour is Red and Black.
ഭാഗിരഥി		ഭാഗിരഥി പർക്കട നിർമ്മിതി ലാഭനാശം.
earth worm		earth worm is Brown in colour.
Rat		Rat is very small and Black.

Fig: Tabulated descriptive Journaling of creatures that are found in soil.



Name / பெயர் : S. Keerthana

School / பள்ளி : C.G.H.S. School

Class / வகுப்பு : VII

1. Find living organisms of the given colors.

கொடுக்கப்பட்டுள்ள நிறத்தில் உள்ள உயிரினங்களைக் கண்டறியவும்.



Indidin Ash



Neem leaf



Red seed



4 மணி சுமந்து



Neem bark

2. Write down the softest nature sound and the loudest nature sound on the campus.

உங்கள் பள்ளியைச் சுற்றி நீங்கள் கேட்கக்கூடிய மென்மையான இயற்கை ஒலி மற்றும் சத்தமான இயற்கை ஒலியை எழுதவும்.

loudest nature sound
crow sound, Pigeon sound

softest nature sound
cat, insects, mosquito

3. Feel things around nature and categorize them into rough, smooth, hairy, waxy.

இயற்கையில் உள்ளவற்றை உணர்ந்து, அவை கரடுமுரடானவையா, மென்மையானவையா, முடி முடிபோன்ற அமைப்பு கொண்டவையா அல்லது மெழுகு போன்று வளவலப்புத்தன்மை கொண்டவையா என வகைப்படுத்தவும்.



Neem bark, false Ashoka

False Ashoka

cat

Bamboo tree

4. Think of creative new names for the different shades of brown you see.

நீங்கள் பார்க்கும் வெவ்வேறு பழுப்பு நிறங்களுக்கு புது பெயர்களை உருவாக்கவும்.

Neem leaf : Banana yellow

Ant : Bark Brown

5. List things you can:

உங்களால் முடிந்தவற்றை பட்டியலிடுங்கள்:

a. Feel and not hear or see

உணரமுடியும் ஆனால் கேட்கவோ, பார்க்கவோ முடியாது

Wind

b. Hear and not feel

கேட்க முடியும் ஆனால் உணரமுடியாது

Thunder

c. Hear and not see

கேட்க முடியுமா ஆனால் பார்க்க முடியாது

Air

d. Smell and not hear

நுகர முடியும் ஆனால் கேட்க முடியாது

Sand smell

6. List 5 nature sounds and 5 machine sounds.

5 இயற்கை ஒலிகள் மற்றும் 5 இயந்திர ஒலிகளை பட்டியலிடவும்.

crow sound, pigeon sound, cat, Rat, mosquito.

School bell, bike, calling bell, cycle bell, Phone Ringtone.

Fig: Senses of Nature Activity sheet of a student

11/10/25

வாணிக்தல்

பையா

1) குக்கு....

குயிலு

2) House

கரும்பருந்து

3) Hani

கரிச்சான் குருவி

4) யிசிலு

ஊர் மூங்குனாத்தி

5) காகா...

மால்காக்கை

6) கத்தியால் தாட்டுதல் ஊர் மூங்குனாத்தி

Fig: A tabulation describing calls of birds from Bird calls activity.

Feedback survey

A feedback survey to analyse the students' level of engagement - what they liked or did not like about particular activities. This survey not only helped us identify some popular activities among students but also to understand what they would like to do in the future and the level of their involvement. The survey had open-ended questions and some were multiple choice. The structure of the questionnaire was explained to them, and the students filled in their responses in the presence of facilitators whom they could approach

The feedback survey started with a simple question - Favorite animal or plant, or insect that you have seen recently? The responses show that many students have mentioned Painted Stork, Open Bill, Oriental Darter, the birds that they spotted at Vedanthangal. Also few students have mentioned Palm tree, Peepal, Banyan, Squirrel, and a few other creatures that they could spot on their campus or neighbourhood.

The responses about what they liked about all the sessions conducted so far with them are depicted in the graphs below. It is evident from the data that students liked activities that were focused on their visual and hearing senses. For example, students were more curious to see a camouflaged insect on a tree bark, and getting to listen to different sounds of birds and frogs was most liked by the students. Most of the students also liked the experience of the Vedanthangal trip.

Soil Organisms

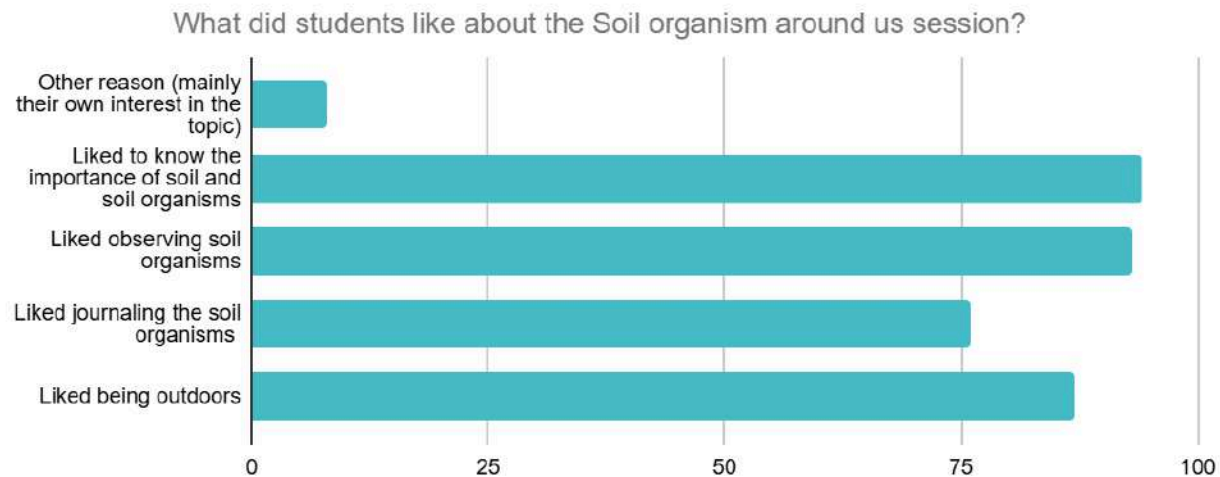


Fig: What did students like about the Soil organism around us session?

Frog Calls

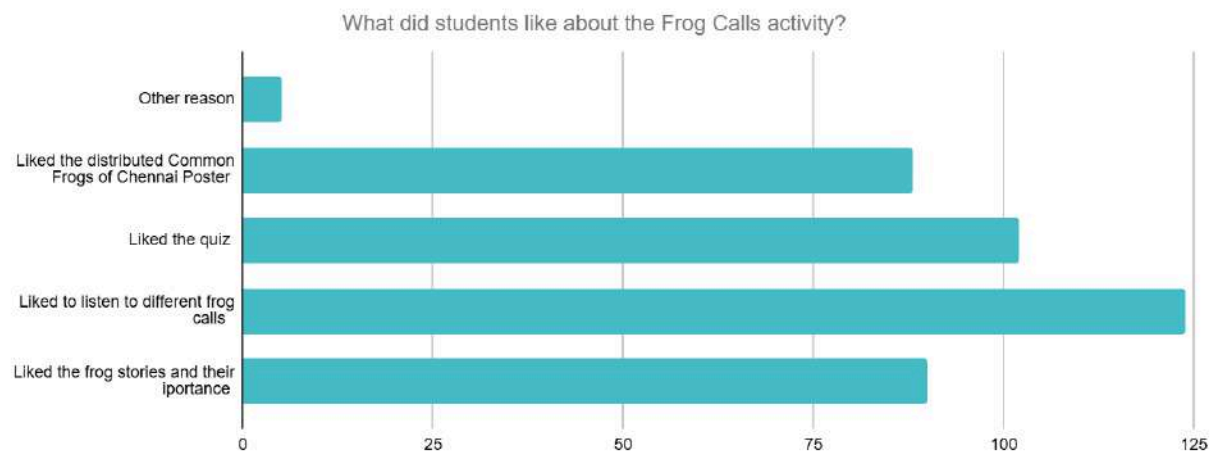


Fig: What did students like about the Frog Calls session?

Wilderness Card Game Session

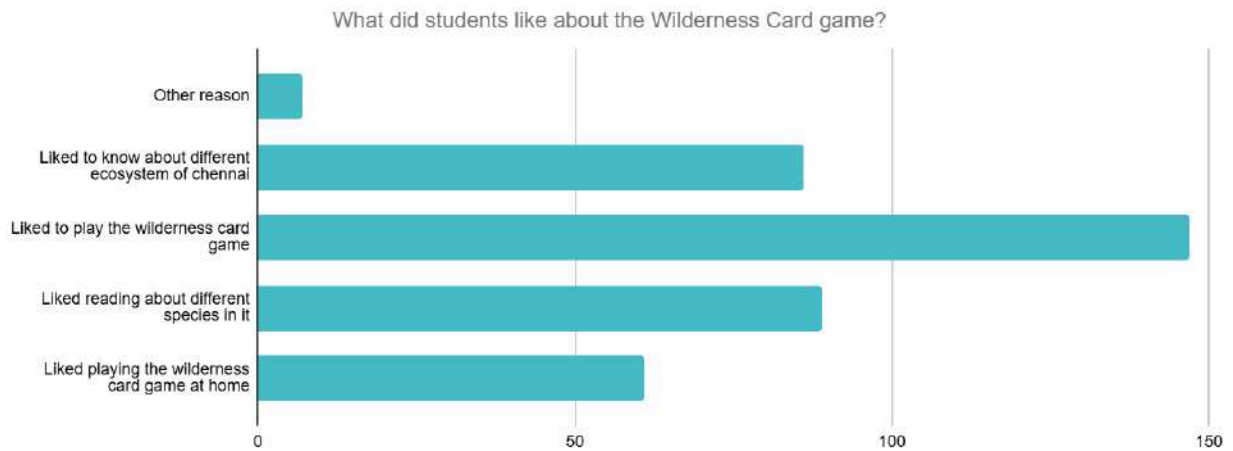


Fig : What did students like about the Wilderness Card game session?

Vedanthangal Bird Trip

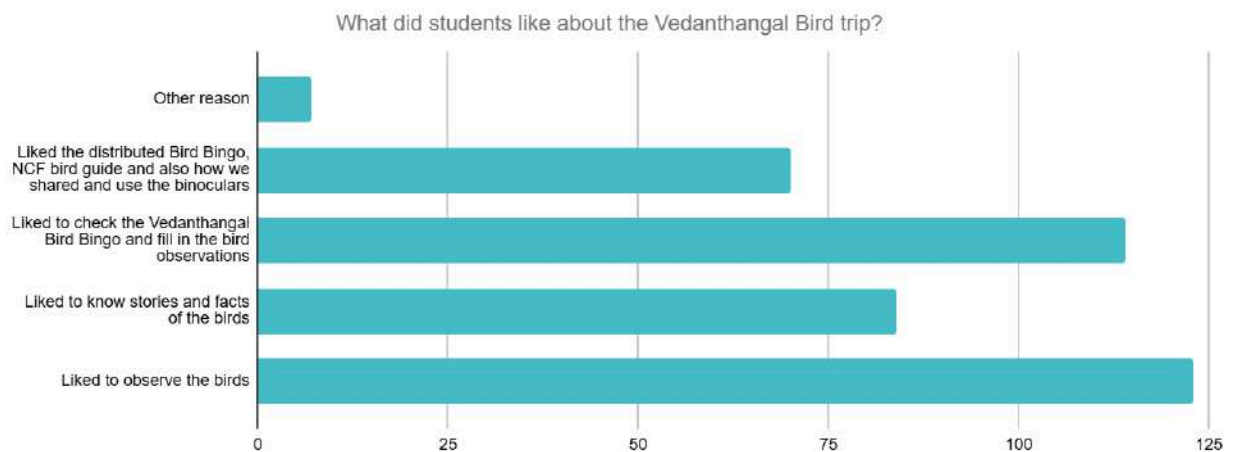


Fig: What did students like about the Vedanthangal Bird Trip?

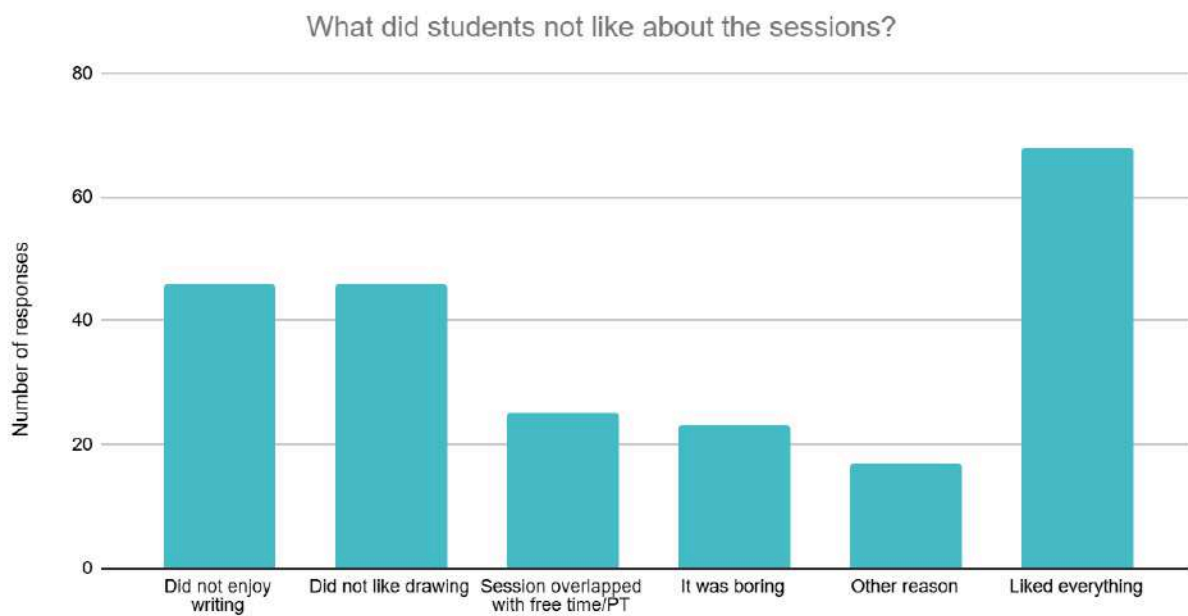


Fig : Survey question about what students didn't like about the sessions.

To receive critical feedback from the students, we also asked them what they did not like about these sessions. Many students responded to this question by saying that they liked everything about the session, and there were responses from students that they did not like the writing/ drawing part of the activities. This was the second most common response given by the students.

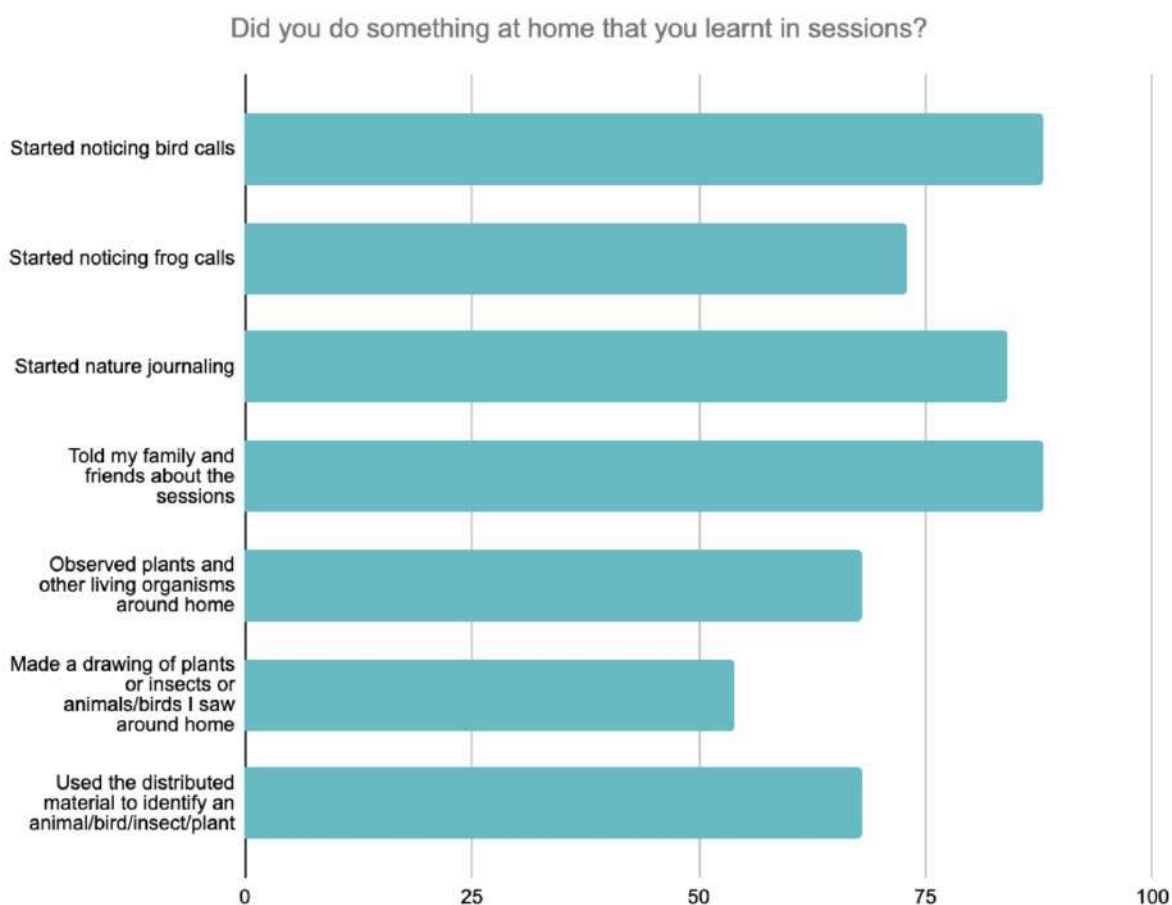


Fig : Survey question about whether the students practised what they learnt at home

Majority of the students said that they would like to continue with the sessions (above fig). Going beyond what they do with facilitators in schools and parks, many students also did things at home that they had learned during the activities. The most selected responses about what they took home were that they started listening to bird calls and that they told their friends and family about the experiences they had during the activities. The least selected response was that they started nature journaling at home. Given that the tool is newly introduced and requires skills such as writing and drawing, it is not surprising that this is something that they have not done at home as much as some of the other activities.

Post Project survey

Few comparative analysis of Baseline(pre-project survey) and Endline (post-project survey)

What do you think of when you hear the word 'nature'?

There is an increase in Nature elements responses when compared to baseline. And a few responses were showing a Conservation attitude towards nature, which was not seen in the Baseline.

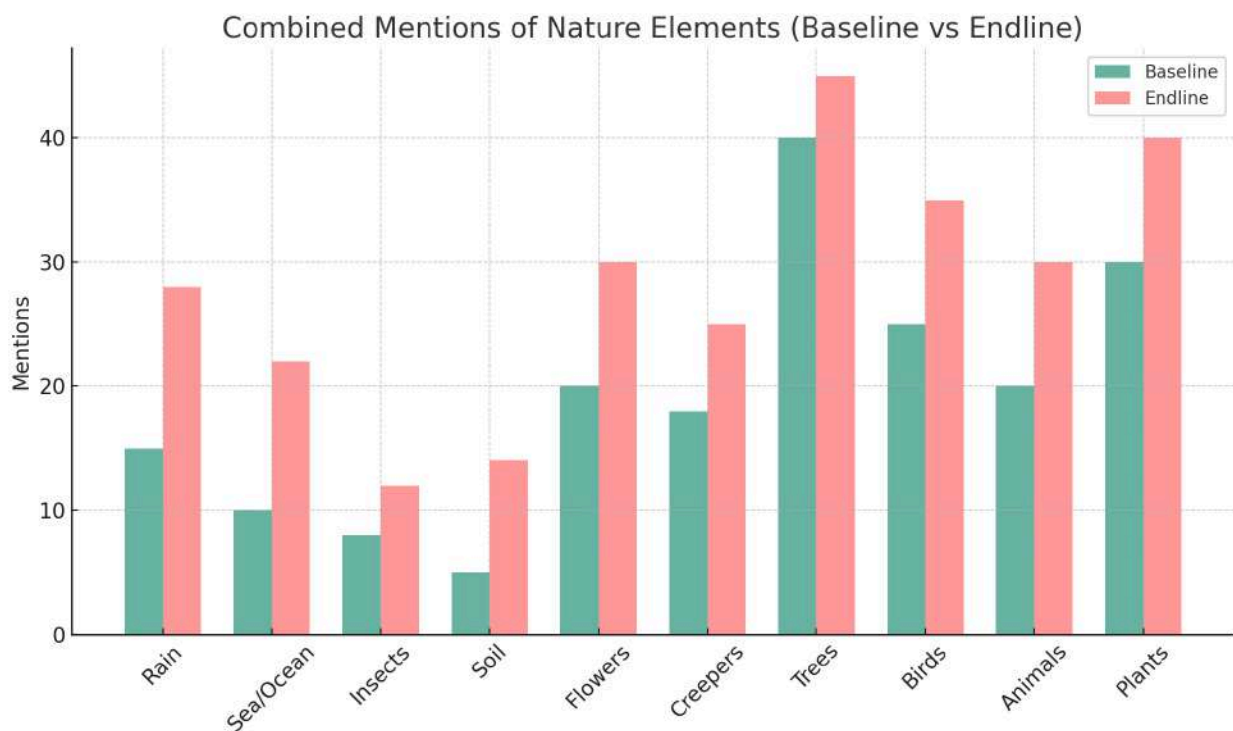


Fig : Students' response to 'What do you think of when you hear the word 'nature'?'

Where would you like to go to be with/see nature?

Vedanthangal Bird Sanctuary is mentioned very often. Students recall it as a place to see birds, trees, and nature. Many students associate Vedanthangal with calmness, biodiversity, and peace. Several children associate happiness, serenity, and joy with nature. Example: "I like lying down on grass and staring up at the sky", "I am happy when I see nature." Compared to baseline, Endline mentions fewer man-made attractions (like museums or theme parks) and more natural landscapes and bird sanctuaries.

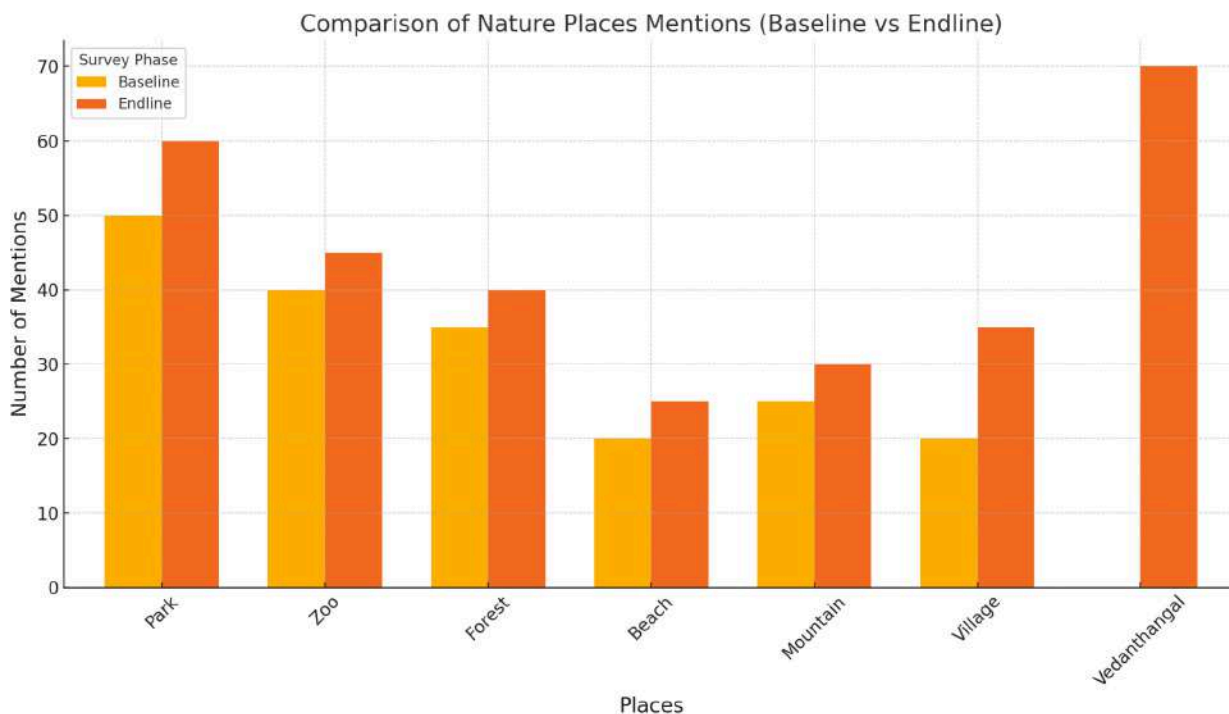


Fig : Students' response to 'Where would you like to go to be with/see nature?'

?

Where do you learn more about nature?

In the endline assessment, a remarkable shift was observed in students' connection to nature. Students have frequently mentioned Palluyir Trust as a key source of learning about nature. Traditional learning platforms like 'schools' and 'books' continued to play a significant role, but are now complemented by newer exposures such as visits to 'Vedanthangal', 'parks', and 'beaches', which were rarely or never mentioned during the baseline. The appearance of *social media* platforms like Instagram and YouTube as sources of nature learning reflects an expansion into digital spaces. Students also demonstrated deeper and more personal connections to nature, referring specifically to *forests, gardens, animals, and plants* rather than general concepts. This indicates that students have more learning from nature itself (showing direct engagement). Overall, the endline data highlights that combining Local- Nature Based learning with real-world experiences and media has significantly strengthened student's relationship with nature.

Write the names of living things around your school.

The data shows a clear and encouraging trend: students significantly increased their awareness and identification of living organisms in and around the school campus between the baseline and endline surveys.

At the **baseline**, only a small number of students mentioned common creatures like ants, butterflies, and squirrels. Several categories—such as birds, spiders, fungi, and reptiles—had little to no mention, indicating limited observation skills or awareness.

By the **endline**, the number of mentions for nearly all categories rose sharply:

- Mentions of **birds** increased dramatically from near zero to one of the top responses, suggesting improved skills in identifying birds.
- Categories like **spiders, fungi, reptiles, and frogs** saw notable rises, pointing to greater curiosity and awareness of less obvious or often-overlooked creatures.
- Even **plants and trees, and insects** showed increased mentions, showing that students were more attentive to both flora and fauna.

This improvement reflects how consistent exposure to nature, guided observation, and perhaps structured activities (such as nature walks, outdoor classes, or citizen science events) helped sharpen students' observation skills. They became more confident and detailed in their recognition of campus biodiversity.

What would students like to do in the future?

<p>"Water body, Tree, Animals, Humans"</p> <p>"Birds, Ants, Trees, Fish"</p> <p>" I want to go for more trips and learn a lot more."</p> <p>"I want to learn more about trees"</p> <p>"Don't cage birds, don't destroy the birds."</p> <p>"Sounds of trees, wind, sky"</p> <p>"I like Planting trees"</p> <p>"Ants"</p> <p>"Weekly once palluyir session need to happen"</p> <p>"Like to go outside and learn"</p>	<p>"Need more trips, Need fun activities with no writings"</p> <p>"I like to know about different birds"</p> <p>"All the session need to have recap"</p> <p>"I want to know about flowers and seeds, I want to go to the mountains."</p> <p>"I want to learn about different types of clouds."</p> <p>"Need more classes like this to learn, and need trips to see birds and animals. Please, I miss this class so much."</p> <p>"Like to learn about grasshopper, and about nature. Teach me"</p> <p>"Insects, Snake, birds, lizard, about all this like to learn more details"</p>
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Overall experience with this type of learning

<p>“I liked bird calls, frog calls session, I like to learn about trees when I was walking on the road I was able to identify the tree, Good, Thank you”</p> <p>“I liked Palluyir sessions so much. They should continue for the next year”</p> <p>“I love your teaching methodology, You taught us everything in a kind manner. we are waiting for you all when your session will come. Thank you for teaching about nature to us.”</p> <p>“ I miss this class”</p> <p>“I liked to learn about nature, I am happy when I teach what I learnt to my friends in the neighbourhood and to my brother and sister”</p> <p>“Good”</p>	<p>“I learnt about birds, trees inside the school, frog, insects because of you otherwise I would not be knowing anything. Thank you all.”</p> <p>“I want to learn more”</p> <p>“I love and enjoy your teaching methodology, I like the gameing activity and alos I like trip. overall everything is super. thank you “</p> <p>“I like all the classes, I like vedanthangal because its my first time seeing birds through binocular, I enjoyed the trip.”</p> <p>“I liked it”</p> <p>“Please come for 8th grade”</p>
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Challenges and Future Steps

- **Gamifying sessions**

We will be looking into more engaging ways to conduct our classroom activities, with particular focus on gamification of the content. As per our observations, the children are far more attentive and engaged with a healthy amount of competition involved

- **Overcoming resistance to writing**

One of our long term goals is to induct NBL into the mainstream of education. This would require not just the students, but also the teachers and administrative staff to realise the long term value it brings to a classroom, and apply certain aspects of it in their own classes

- **Avoiding clashes with existing school events**

To optimise on the time allotted to us at each school, we require better coordination with the school administration to prioritise Nature Based Learning sessions and avoid scheduling them during school events.

- **Encouraging teachers to extend NBL outside of Palluyir sessions**

One of our long term goals is to induct NBL into the mainstream of education. This would require not just the students, but also the teachers and administrative staff to realise the long term value it brings to a classroom, and apply certain aspects of it in their own classes

- **Evolving new modules**

We will be constructing fresh, slightly more advanced modules from last year. We will also be looking into more creative and engaging ways to disseminate this information in classroom settings.

- **Bringing up conservation issues**

Since we will be working with the same group of students again this year, our material can advance to slightly more complex topics. Relying on the knowledge they have built of their surrounding flora and fauna, and hopefully a sense of empathy they have developed in the past year, we are hoping to open class discussions to more systemic, far reaching issues concerning wild spaces beyond our vicinity.

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Annexure

Baseline, Endline questionnaire and Session Feedback questionnaire

Endline

பள்ளியின் பெயர் :

பெயர் :

தேதி : __/__/__

வகுப்பு :

1) 'இயற்கை' என்ற வார்த்தையைக் கேட்டவுடன் உங்களுக்கு என்ன
தோன்றுகிறது?
What do you think of when you hear the word 'nature'?

2) இயற்கையுடன் இருக்க/ பார்க்க எங்கு செல்ல விரும்புவீர்கள் ?
Where would you like to go to be with/see nature?

3) எந்த நேரத்தில் நீங்கள் இயற்கையுடன் மிகவும் இணைக்கப்பட்டதாக
உணர்கிறீர்கள்?
When do you feel most connected to nature?

4) இயற்கையைப் பற்றி அதிகமாக எங்கு அறிந்துகொள்கிறீர்கள்?
Where do you learn more about nature?

5) இயற்கையில் இருப்பதைப் பற்றி நீங்கள் எதை மிகவும் விரும்புகிறீர்கள்?
What do you love most about being in nature?

6) இயற்கையில் உள்ள ஏதாவது உயிரினங்களை பார்த்து நீங்கள்
அச்சப்படுவீர்களா?
Are you scared of any creatures in nature?

7) உங்கள் பள்ளியை சுற்றியுள்ள உயிரினங்களின் பெயர்களை எழுதவும்.
Write the names of living things around your school.

8) ஒரு வருடத்தில் உள்ள மூன்று பருவ காலங்களில் காணப்படும் உயிரினங்களில் நீங்கள் பார்த்த சிலரின் பெயர்களை எழுதவும்.
Write the names of some of the creatures you have seen in the 3 seasons of the year.

கோடைகாலம் Summer	குளிர்காலம் Winter	மழைகாலம் Mansoon

9) உங்களை சுற்றியுள்ள இயற்கையைப் பாதுகாக்க விருப்பமா?

Would you like to protect nature?

10) இயற்கையைப் பாதுகாக்க விரும்பினால், எந்த வகையில் பாதுகாப்பு செய்வீர்கள்?

If yes how?

Session Feedback

1. What's your favorite animal or plant or insect that you have seen recently?

1. சமீபத்தில் நீங்கள் பார்த்த விலங்கு அல்லது செடி அல்லது பூச்சியில் எது உங்களுக்கு பிடித்தமானது?

2. Which session did you like the most? (can select multiple) (MCQ) and why? (MCQ) (select from options below)

2. எந்த செயல்பாடு உங்களுக்கு மிகவும் பிடித்திருந்தது? (கீழே கொடுக்கப்பட்டுள்ள பதில்களில் இருந்து ஒன்று அல்லது ஒன்றுக்கும் மேற்பட்ட பதில்களை தேர்வு செய்யலாம் மற்றும் அதற்கான காரணத்தை கூறவும்)

Tree walk

- a) I liked observing plants
- b) I liked drawing leaf shapes activity
- c) I liked being outdoors
- d) I liked the distributed Tree guide
- e) Other reason _____

மரங்கள்

- a) எனக்கு செடி/மரங்களை கவனிக்க பிடித்திருந்தது
- b) எனக்கு இலையின் வடிவத்தை வரையும் செயல்பாடு பிடித்திருந்தது
- c) எனக்கு வெளியில் சென்று கவனித்தது பிடித்திருந்தது
- d) எனக்கு மரங்கள் பற்றி கொடுத்த கையேடு பிடித்திருந்தது
- e) வேறு காரணம் _____

Soil organism around us

- a) I liked to know the importance of soil and soil organisms
- b) I liked to observe soil organisms
- c) I liked being outdoors

d) I liked journaling the soil organisms

e) Other reason _____

நம்மைச் சுற்றிலும் உள்ள மண் உயிரிகள்

a) எனக்கு மண் உயிரிகள் மற்றும் அவற்றின் முக்கியத்துவம் பற்றித் தெரிந்துகொள்ள பிடித்திருந்தது

b) எனக்கு மண் உயிரிகளை கவனிக்க பிடித்திருந்தது

c) எனக்கு வெளியில் சென்று கவனித்தது பிடித்திருந்தது

d) எனக்கு மண் உயிரிகளைப் பற்றி எழுதவும் வரையவும் பிடித்திருந்தது

e) வேறு காரணம் _____

Ant watch

a) I liked to observe ants

b) I liked drawing ants

c) I liked the ant stories

d) I liked the Common Ants of Chennai Poster

e) Other reason _____

எறும்புகள்

a) எனக்கு எறும்புகளை கவனிக்க பிடித்திருந்தது

b) எனக்கு எறும்புகளை வரைய பிடித்திருந்தது

c) எனக்கு எறும்புகளைப் பற்றிய கதைகள் பிடித்திருந்தது

d) எனக்கு சென்னையில் காணப்படும் எறும்புகளை பற்றி கொடுத்த போஸ்டர் பிடித்திருந்தது

e) வேறு காரணம் _____

I notice, I wonder, it reminds me of

a) I liked the spot and list activity

b) I liked to fill in the 'INIWIRO' part

c) I liked to observe the creatures

d) I liked knowing about mimicry and camouflage

e) Other reason _____

என் கவனிப்பு, என் கேள்விகள், என் நினைவுக்கு வருவது

- a) எனக்கு உயிரினத்தை கண்டறிந்து அதைப் பற்றி பட்டியலிட்டது பிடித்திருந்தது
- b) எனக்கு என் கவனிப்பு, என் கேள்விகள், என் நினைவுக்கு வருவது பகுதியை நிரப்பியது பிடித்திருந்தது
- c) எனக்கு உயிரினங்களை கவனிப்பது பிடித்திருந்தது
- d) எனக்கு உருமறைப்பு மற்றும் பொய்யுரு (mimicry) பற்றி தெரிந்துக் கொண்டது பிடித்திருந்தது
- e) வேறு காரணம் _____

Nature senses

- a) I liked knowing about different senses
- b) I liked being outdoors
- c) I liked the activity sheet
- d) I liked to know about how villagers at vedanthangal celebrate festivals without crackers to protect birds
- e) Other reason _____

இயற்கையின் உணர்வுகள்

- a) எனக்கு இயற்கையில் உள்ள பல வகையான உணர்வுகளைப் பற்றி அறிந்துகொள்ள பிடித்திருந்தது
- b) எனக்கு வெளியில் சென்று கவனித்தது பிடித்திருந்தது
- c) எனக்கு கொடுக்கப்பட்ட செயல்பாட்டுத் தாள் பிடித்திருந்தது
- d) எனக்கு வேடந்தாங்கல் மக்கள் எப்படி பறவைகளை பாதுகாக்க வெடிகளை பயன்படுத்தாமல் விழாக்களை கொண்டாடுகிறார்கள் என்பது பிடித்திருந்தது
- e) வேறு காரணம் _____

Frog Calls

- a) I liked the Frog stories and Importance
- b) I liked to listen to different frog calls
- c) I liked the quiz
- d) I liked the distributed Common Frogs of Chennai Poster

e) Other reason _____

தவளைகளின் ஒலி

- a) எனக்கு தவளைகளின் கதைகள் மற்றும் அவற்றின் முக்கியத்துவம் பிடித்திருந்தது
- b) எனக்கு வெவ்வேறு தவளைகளின் ஒலிகளை கேட்க பிடித்திருந்தது
- c) எனக்கு தவளைகளின் ஒலியை கண்டுபிடிக்கும் விளையாட்டுப் பிடித்திருந்தது
- d) எனக்கு சென்னையில் காணப்படும் தவளைகளைப் பற்றி கொடுத்த போஸ்டர் பிடித்திருந்தது
- e) வேறு காரணம் _____

Bird Calls

- a) I liked to know about the importance of bird calls
- b) I liked to listen to different bird calls
- c) I liked the quiz
- d) I liked to see the bird images
- e) Other reason _____

பறவைகளின் ஒலி

- a) எனக்கு பறவை ஒலியின் முக்கியத்துவத்தைப் பற்றி அறிந்துகொள்ள பிடித்திருந்தது
- b) எனக்கு பல பறவைகளின் ஒலியை கவனிக்க பிடித்திருந்தது
- c) எனக்கு பறவைகளின் ஒலியை கண்டுபிடிக்கும் விளையாட்டுப் பிடித்திருந்தது
- d) எனக்கு பறவைகளின் படங்களை பார்க்க பிடித்திருந்தது
- e) வேறு காரணம் _____

Wilderness card game

- a) I liked to know about the different ecosystem of chennai
- b) I liked to play the wilderness card game
- c) I liked reading about different species in it
- d) I liked playing the wilderness card game at home
- e) Other reason _____

தூழல் அட்டை விளையாட்டு

- a) எனக்கு சென்னையின் வெவ்வேறு தூழல்களைப் பற்றி அறிந்துகொள்ள பிடித்திருந்தது
- b) எனக்கு தூழல் அட்டை விளையாட்டு விளையாட பிடித்திருந்தது
- c) எனக்கு அட்டைகளில் கொடுக்கப்பட்ட உயிரினங்கள் பற்றி படிக்க பிடித்திருந்தது
- d) எனக்கு தூழல் அட்டை விளையாட்டை வீட்டில் விளையாட பிடித்திருந்தது
- e) வேறு காரணம் _____

Vedanthangal Bird Trip

- a) I liked to observe the birds
- b) I liked to know stories and facts of the birds
- c) I liked to check the Vedanthangal Bird Bingo and fill in the bird observations
- d) I liked the distributed Bird Bingo, NCF Bird guide and also how we shared and used the binoculars.
- e) Other reason _____

வேடந்தாங்கல் பறவைகள் சரணாலயப் பயணம்

- a) எனக்கு பறவைகளை கவனிக்க பிடித்திருந்தது
- b) எனக்கு பறவைகளைப் பற்றிய கதைகள் மற்றும் தகவல்களை அறிந்துகொள்ள பிடித்திருந்தது
- c) எனக்கு வேடந்தாங்கல் பறவைகளைப் பற்றி கொடுத்தத் தாளை நிரப்பவும் பறவைகள் பற்றிய குறிப்புகளை எழுதவும் பிடித்திருந்தது
- d) எனக்கு பறவைகள் பற்றி கொடுத்த தாளும் NCF பறவைகளின் கையேடும், தொலைநோக்கியை பகிர்ந்து பயன்படுத்தியதும் பிடித்திருந்தது
- e) வேறு காரணம் _____

3. What did you not like about the sessions? (MCQ)

- a) I did not enjoy the writing part
- b) I did not enjoy the drawing activity
- c) Session overlapped with free time/PT
- d) It was boring
- e) Other reason _____

3. உங்களுக்கு மேற்கண்ட செயல்பாடுகளில் எது பிடிக்கவில்லை?

- a) எனக்கு எழுதும் பகுதி பிடிக்கவில்லை
- b) எனக்கு வரையும் பகுதி பிடிக்கவில்லை
- c) செயல்பாடுகள் எங்கள் ஓய்வு நேரம் அல்லது விளையாட்டு நேரங்களில் நடந்தது பிடிக்கவில்லை
- d) செயல்பாடுகள் சலிக்கும் வகையில் இருந்தது
- e) வேறு காரணம் _____

4. Did you do anything that you learned in sessions back at home? Yes/No What was it?-

- a) Started noticing bird calls
- b) Started noticing frog calls
- c) Started nature journaling
- d) Told my family and friends about the sessions
- e) Observed plants and other living organisms around home
- f) Made a drawing of plants or insects or animals/birds I saw around home
- g) Used the distributed material to identify an animal/bird/insect/plant

4. இங்கே கற்றுக்கொண்ட செயல்பாடுகளை வீட்டில் செய்தீர்களா? ஆம்/ இல்லை.

ஆம் என்றால் அது என்ன?

- a) பறவைகளின் ஒலியை கவனிக்கத் தொடங்கியுள்ளேன்
- b) தவளைகளின் ஒலியை கவனிக்க தொடங்கியுள்ளேன்
- c) இயற்கை பற்றி எழுத வரையத் தொடங்கியது
- d) வீட்டில் உள்ளவர்களுக்கும் நண்பர்களுக்கும் செயல்பாடுகள் பற்றி கூறினேன்
- e) வீட்டைச் சுற்றியுள்ள செடிகள் மற்றும் மற்ற உயிரினங்களை கவனித்தேன்

- f) வீட்டைச் சுற்றியுள்ள செடிகள்/ பூச்சிகள் அல்லது விலங்கு/பறவைகள் பற்றி வரைந்தேன்
- g) எனக்கு கொடுக்கப்பட்டுள்ள கையெழுத்துகளை பயன்படுத்தி விலங்கு/பறவை/பூச்சி/செடியை கண்டறிந்தேன்

5. Would you like to continue having these activities? Yes/No.

5. இது போன்ற செயல்பாடுகளை தொடர விருப்பமா? ஆம்/இல்லை.

6. What would you like the sessions to have in the future?

6. வரும் நாட்களில் எந்த மாதிரியான செயல்பாடுகள் இருக்க வேண்டும் என்று விருப்பப்படுகிறீர்கள்?

7. How was your overall experience with this type of learning?

7. இந்த வகையான (இயற்கை சார்ந்த) கற்றலில் உங்களின் அனுபவம் எப்படி இருந்தது?



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