

**ENVIRONMENTAL EDUCATION
IN THE HIMALAYA**

TEACHERS' ACTIVITY GUIDE

**Nature Conservation Foundation (NCF)
Snow Leopard Trust (SLT)**

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INTRODUCTION

Children are special and so are teachers.

Children are always eager to absorb knowledge from their environment; they are sensitive and empathetic. Like a latent seed, every child comes with the necessary qualities as well as unique talents and capabilities. But, a sensitive and caring teacher is required to bring these out, nurture the talents and help the child realize the full potential that s(he) brings along to this world.

This guide has been prepared for those of you who wish to get involved in such a process through instilling positive values, feelings and understanding among children about the natural world and create the necessary awareness to safeguard our earth. The discipline that has been addressing this challenge is called environmental education. And we believe that this can be best handled by enthusiastic, motivated and aware teachers – like you. Specifically targeting the high altitude region of the Indian Himalaya, this book has 35 activities suitable for creating environmental awareness among children from classes V to IX. The activities are divided in eight sections. Each activity description provides details about learning objective/outcome (theme), suitable location and age group, duration, props required, process and follow-up. Corresponding to each activity, there are exercises given in Children’s Workbook that has also been brought out by Nature Conservation Foundation (NCF) and Snow Leopard Trust (SLT) for school children in the Himalayan Nature Clubs (HNC) running in your respective schools. With the help of village youth involved in the Youth Awareness Clubs (YAC) set up by us and with inputs from our field staff, you can conduct these activities easily in your own school campus and village surroundings.

While a few of these activities are widely used by environmental educators, many are developed by us and need to be tested in this pilot phase of our work in Spiti. We will look forward to your feedback and suggestions to improve and enrich it. And if you innovate or adapt these activities to suit the region/age groups you are working with, we will be keen to hear from you. The purpose of this guide will be served if you find these activities useful and relevant. As you will agree after taking a look at the activities, you need not be a science or geography teacher to conduct these. Any interested teacher (individual) can successfully carry these out using this guide. Enjoy the path of environmental education...

Julley!

“A teacher affects eternity; he can never tell where his influence stops” - Henry B. Adams

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MOTHER EARTH

The earth appears like a beautiful blue ball from space. Those who have traveled to space have discovered its beauty and uniqueness. If we just look around and see the miracles called plants and animals, we will get the proof of this. Earth is the only place in space known to support life so far. This tremendous diversity (variety) of life on our planet includes micro-organisms, fungi, plants and animals (including ourselves). Scientists believe that there could be about 15 million (1,50,00,000) species of plants and animals on the earth! Presently, the names of only about 10 per cent of these (1.7 million species - 17,00,000) are known to us. Isn't this fascinating?! There is so much to know and learn about our planet that we need several lifetimes to do only a small part of it. So, let us rejoice in the fact that we are among those fortunate ones to inhabit such a rich and unique place – the Earth. It is natural that we begin by first being thankful to mother earth and develop closeness with her.

“The earth does not belong to man; man belongs to the earth.”

- Chief Seattle (a native American chief)

1. Touch...Mother Earth

Theme: The earth is like a mother for humanity and for all the creatures. Earth is our true home and we share this home with fellow humans and a great diversity of wild creatures, which are very important for her health and well-being.

Location: Outdoors preferred, could also be conducted indoors

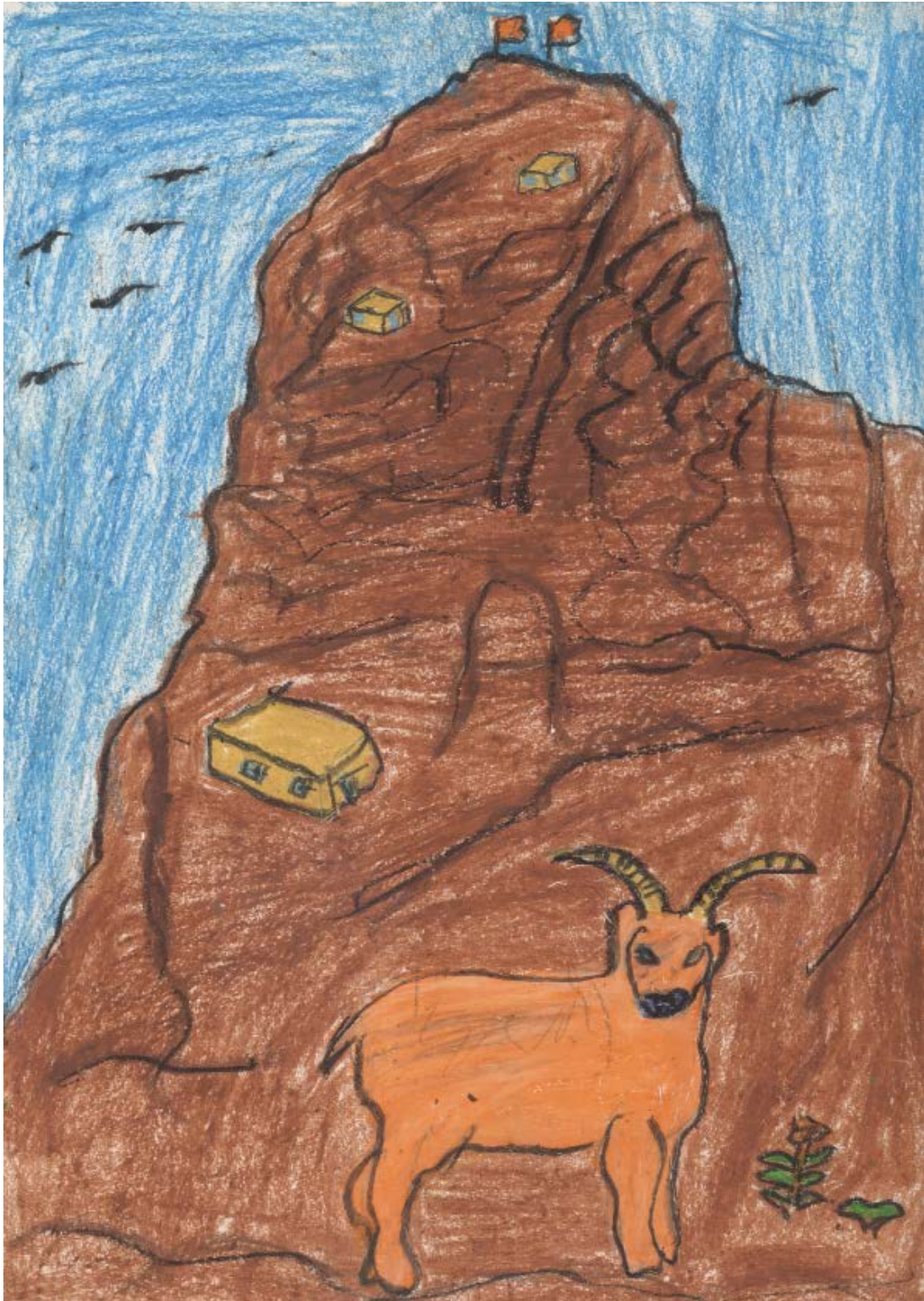
Suitable age group: Class V to IX

Duration & suitable time of the day: About 45 minutes. It is desirable to do this in the mornings. Done outdoors, any time of the day after a warm up/energetic activity is alright.

Props/requirements: A small globe or a ball painted blue (with continents shown in another colour). It could also just be an earthen ball to establish the true connection.

Key points & process: Assemble the children and tell them that you are calling them for a very important ceremony. They will be curious. If they ask just tell them it's about connecting with the earth again. Why? Because we often forget that our real home is the earth. Now, bring out the (hidden till then) small sized globe to focus their attention. When they are all looking at the globe, tell them to close their eyes and visualize their mother. One by one ask each of them to come forward, touch the globe and say “I respect you mother earth – the giver of life and all my needs! I shall protect the life on earth to keep her rich and healthy.” Now, tell all of them to repeat the same pledge together. Tell them that now they have connected with the earth again and are the ‘little guardians’ of the earth. Ask each child to give the name of a wild plant or animal (preferably found in their region) that they know. After the entire class has done it, tell them to say “let these plants and animals be protected and so also all other plants and animals of the earth.” You can now announce that a Himalayan Nature Club (HNC) has been started in the school. Under that, various activities will be conducted that will bring them closer to the earth and the many fascinating creatures that live on the earth.

Follow-up/feedback: Soon after the activity, get a feedback about how they felt and what they would like to do after knowing about their new role on the earth. They write a short essay in the workbook soon after this activity to reinforce the learning. Keep pointing out their new role for the next few months to reinforce it.



HIMALAYA: THE ABODE OF SNOW

The Himalaya or ‘the abode of snow’ is a magnificent mountain range spread across seven countries over a length of about 3,000 km. Himalaya is the source of many of India’s mighty and sacred rivers like the Indus, Sutluj, Ganga, Yamuna and Brahmaputra or Tsangpo. These rivers support agriculture in the flood plains which helps sustain a large human population. The Himalaya acts as a physical barrier preventing the drying winds from the north. It also plays an important role in our country’s security. The Himalayan mountain range has a great influence on the Indian monsoon. It is a sacred mountain range for millions of people living in India, Nepal, Bhutan and Tibet. Each year, thousands of tourists visit the Himalaya for recreation, pilgrimage, mountaineering, trekking, outdoor education and spiritual quest. And for all of you, who live here in this heaven, the Himalaya is a beautiful home and a source of sustenance and livelihood.

2. The Living Himalaya: A Pictorial Journey

Theme: Himalaya is a living landscape. It is extremely rich and diverse. It is in danger of losing many species of wildlife and their homes which will affect the overall environmental health and us in the long run.

Location: Indoor (assembly area)

Suitable age group: Class V to IX

Duration & suitable time of the day: 45 minutes, any time of the day

Props/requirements: LCD projector, screen/white wall, computer (PC), “The Living Himalaya” CD

Key points & process: Introduce the concept of “The Living Himalaya” – a living mountain ecosystem and a biodiversity hotspot. Children are to pay attention to things being said in the CD as there will be exercises linked to this in the workbook. The screening should be done at a quiet time and location.

Follow-up/feedback: Children would write their learning from the slide show in their workbooks under given contexts/heads. At intervals of three and six months, some of the pictures can be shown to them and their knowledge retention assessed as well as strengthened.

3. High Altitude Food Factories

Theme: The entire high altitude landscape consists of many interwoven food chains (of which we humans and our livestock are also a part) – which are pathways in which energy is passed through an ecosystem. These food chains are important for proper functioning and health of the ecosystems.

Location: Indoors

Suitable age group: Class VII and VIII

Duration & suitable time of the day: About one hour; any time when children are fresh and receptive

Props/requirements: Food chain posters

Key points & process: Begin by asking children what they had for breakfast and what they generally eat for lunch. Find out from them what some of the common animals and plants eat. The emphasis needs to be on the fact that food gives energy and all living beings need energy to grow, move and multiply. You can ask them, “but, how exactly does this energy travel through different creatures? This is a little difficult to make out as we cannot see the energy, but we can certainly see who eats what, right? So, for some time we’ll look at these posters and try and unravel the secret of food chains of the high altitudes.” Now distribute one poster each (the one with only wildlife shown) for a group of four-five students and ask them to spread the poster in a way that all of them can see well. Now, ask them to look for the symbols and read the names of creatures given under each category. They should write down the name of the creatures against each category mentioned in the food chain in the workbook. After they do it, they must indicate with arrows the path of energy i.e. from sun to plants and then on to animals. Now, give the second poster and tell them to repeat the same procedure for this one. They should pay attention to the differences between the two posters. Each team will then share their observations and present the same. Thus, using the posters, they will learn about the high altitude food chains in general and consequences of human altered food chains in the region.

Follow-up/feedback: Students would construct the food chains in their workbooks and write the differences between the two food chains depicted in the posters. An important follow-up activity could be a nature trail, where the students look around and construct a food chain with real examples of plants and animals found there.



MY WINDOWS TO THE WORLD: THE SENSES

It is very easy for a wolf to locate its prey even when it cannot see the animal, just by its smell, or for a vulture soaring very high in the sky by its very sharp eyesight. Plants and many invertebrates (animals without backbones), which don't have eyes are extremely sensitive to touch. We, on the other hand have an elaborately specialised tongue that can make out several tastes. And a cat's ears can pick out even a small movement in the grass, which helps it pounce precisely on its prey. Like most animals, we humans too have been gifted with these windows to learn and understand our environment. The five senses of touch, smell, sight, hearing and taste are our true windows to learning about our environment. If we keep these five windows open and use them properly, we can learn much more about our environment. Let us sharpen these five senses and feel closer to nature.

First law of EE - An experience is worth 10,000 pictures - Noel McInnis

4. Ten Touches

Theme: By being sensitive to the touch of objects, we can really understand the surfaces of objects in terms of shape, temperature, feel, texture and other interesting aspects.

Location: Outdoors

Suitable age group: Class V to IX

Duration & suitable time of the day: 30 to 45 minutes. Any time of the day, throughout the year

Props/requirements: Blindfolds.

Key points & process: As you lead them out, ask the children to touch their cheeks, while you could also do the same. "Such a nice feel, let's touch and find out how things around here feel", you say with an expression of curiosity. You start touching different textures around you, inviting them to join you and touch different living and non-living objects around. Tell them that an object (e.g. leaf) is not just its size, shape and colour but also its feel (on both surfaces and margins), softness etc. After walking a few metres this way, instruct them to touch at least ten different natural objects and describe the touches in detail i.e. if something is smooth, what kind of smoothness (silky, velvety etc.) in their workbooks. Now ask them to find partners and blindfold one of the two children in pairs (and instruct them to be alert and aware during this activity). The partner without blindfolds is now to lead the other partner to ten different objects. The blindfolded partner describes the touch of each object and the other partner writes down the points carefully. After this, remove the blindfolds and ask the child to identify the ten objects she touched. The same process is repeated for the other partner. This part helps them focus better and pay more attention to details of the touch.

Follow-up/feedback: Children write down their learning and experience in their workbooks. Motivate them to frequently use and sharpen their sense of touch and take them on different trails so that the touches are different.

5. My Natural Binoculars and Lenses

Theme: By expanding and focusing (zooming out and in) our vision in a landscape, our sense of sight is sharpened.

Location: Outdoors

Suitable age group: Class V to IX

Duration & suitable time of the day: 30 minutes, up to one hour for the drawing/painting part; in mornings and evenings throughout the year

Props/requirements: Plain paper, crayons, magnifying lens.

Key points & process: Take the children out on a trail or out of the classroom at a spot, where they can see a natural landscape. Ask them to sit at a place and look all around for different colours in their workbooks. After they write this down, they observe and pick different shades present in each colour and write the number of shades visible for each colour. Explain to them that the process they used was like using binoculars to see details of the landscape closely. In the next part, ask them to condense the landscape and take only a small part of the detail and enlarge the scale. This means that they may observe a leaf or rock (can use a magnifying lens) as a whole and look for details in it, especially the colours and shades.

Follow-up/feedback: Children make paintings/sketches of the subject of their focus (a plant/animal/mountain) from very far, closer and very close (i.e. various distances) in the space given in the workbook.

6. Snow Leopard on the Prowl

Theme: When children start paying attention to the sounds around them, they move from hearing to listening and sharpen their perception.

Location: Outdoors

Suitable age group: Class V to IX

Duration & suitable time of the day: Variable depending on the version of the game; throughout the year

Props/requirements: Masks of snow leopard (one) and prey animals (blue sheep, ibex, hare, pika, snowcock etc) made from reused material

Key points & process: Prepare children for the visit by telling them beforehand that you are going to play some games. After taking children outdoors, you focus their attention on the sounds and ask them to recall some of the sounds with which they are familiar. You tell them that there is a difference between hearing and active hearing or attentive hearing (called listening). Now, you may introduce the game and its two versions.

Version I: In the first one, all prey animals (wearing their masks, if these are available; children can make these themselves) sit in a large circle and the child who is the snow leopard sits in the centre. He is waiting in ambush to catch prey. Prey animals have to be careful not to make any sound otherwise the snow leopard has a higher likelihood of catching them. Only the ‘animal’ (child) that you signal can move. They have to reach where the snow leopard is sitting and touch it. Now, you tell them the most interesting catch- the snow leopard is blindfolded! So, it can only hear. The child who is the snow leopard has to pay attention to the sounds made by the prey. After the prey is signaled to move, the snow leopard listens carefully and points in the direction of the sound. If the finger is pointed in the correct direction (where the prey is), you ask the prey (child) to freeze and sit and wait there. Ask another child to go towards the snow leopard. Replace the child as snow leopard if it is outwitted by any prey animal. Conversely, if all children (prey) get their turns once, let the snow leopard be changed and start the game all over again. The rule is that no prey can run to reach the snow leopard.

Version II: In this game also, the child who becomes the snow leopard is blindfolded. After blindfolding the predator, a clap or a whistle signals all the prey to hide in a nearby area. After the children hide (within two-three minutes), the blindfold is removed and the predator is allowed a minute or two to spot the prey and hunt (i.e. point and identify). After this, he is blindfolded again and the hidden prey can approach the snow leopard from all sides on their own (but only walking, not running) as in Version I of the game described above. Now the predator can only use his sense of hearing and has to point a finger from the direction of the sound of the moving prey. Then this version is similar to the first one.

Follow-up/feedback: Initially, for better hearing, it is important to take away one faculty (such as sight). Afterwards, they can also be made aware of natural sounds by just focusing and sitting in silence or meditating. A ‘time-with-yourself’ kind of activity every month could be very useful.

7. The Smelly World

Theme: Through plants, we can activate and sharpen the sense of smell. Several high altitude plants have strong smells.

Location: Outdoors

Suitable age group: Class V to IX

Duration & suitable time of the day: 45 minutes to one hour, mainly during spring and summer months

Props/requirements: You may keep a bottle of perfume, oil and/or some dried plants (e.g. Artemisia – burse or Juniper - shukpa) with strong/good smell

Key points & process: Many plants at high altitudes are aromatic and useful in medicine i.e. thyme. Some also possess strong offensive odours. Children can be shown such ‘smelly’ plants on the trail without naming them. They need to write down the smells for each plant (and the part that gives smell i.e. leaf/stem/flower etc.). Many plants do not smell if you do not rub their surfaces, so it is important to tell children to rub gently on leaves and stems, to check for smell. Please be specific and instruct them before the activity to avoid plucking leaves and flowers in the process. They can think about similar smells that they are aware of and write that too. This will help them remember the smells better. This is

an activity that they do in pairs. An alternative to this activity is to go out and throw a challenge saying, “there is a secret that we want to uncover, but for that we need to walk a trail full of smells and when we have all smelt at least 20 plants can we get our hands on that Top Secret!” The secret as you know and they will also know by the time they finish is that many plants have smells and these are of different types...good, pleasant, foul etc.

Follow-up/feedback: Children will draw the plants/parts smelt and write/describe the type of smell that they got mentioning the known smells here. Later, they can ‘bring’ new smells (not necessarily in physical form) to the school and share it with all.

8. A Taste Of Nature

Theme: Several wild plant products are useful as food. Looking for those and consuming these helps rejuvenate the learners’ interest in traditional wild food items of the region and connects them to their environment.

Location: Outdoors

Suitable age group: Class V to IX

Duration & suitable time of the day: 30 – 45 minutes; during spring and summer

Props/requirements: Not required

Key points & process: There are many wild fruits, flowers, leaves, roots etc. which can be eaten directly or after minor processing. On nature trails, such items can be shown or encouraged to be eaten. This helps in making children aware of their availability and uses. When you take children out for this activity, keeping a village elder or amchi (traditional medicine man) will ensure safety. It will also help in orienting children to traditional use of these resources. Also you or the village elder/amchi will need to set examples by consuming these items yourself first. Besides, it is crucial to announce before you start about dangerous/poisonous plants that need to be avoided. This will ensure that children too will follow. To add some fun to the activity, you may ask the children to eat like animals you could lead by example. Ask the group to choose an animal (e.g. blue sheep) and then feed as if they were that animal.

Follow-up/feedback: Children record their experiences and observations in workbooks. As a follow-up you may ask children to bring information on more such food items and share this in the classroom/assembly.

9. Hidden Treasures

Theme: Looking for the items in the list helps children sharpen the five senses and improves their observation and analytical skills.

Location: Outdoors

Suitable age group: Class V to IX

Duration & suitable time of the day: About one hour; throughout the year, preferably in early mornings and late evenings

Props/requirements: List of items to be brought

Key points & process: Take the children to an outdoor location, divide them in teams of four to six and give a chit to each team, containing list of things to search and bring. The list consists of various natural objects and ideas. You can add/remove items to this list and make it more interesting/challenging. Specify a time frame of about 45 minutes for getting the objects and let them go looking for these. Give them a reminder when ten minutes are left. Do not allow teams to rest and keep motivating them to look for things properly. Challenge them by asking questions about their collection. Ask the teams to arrange and display their collections when time is up. Two/three students can be made judges and asked to check the items brought by different groups. Motivate them to justify the choices. Keep giving points to ponder in between and discuss doubtful items. You may give '4' points for correct items. '2' points for partly correct things and '0' for not bringing the right items. You can also conduct the activity without giving points. Some of the special items can be displayed at school, the rest returned back to nature. Don't forget to discuss the other interesting things that they encountered during the search.

List of items

1. Something beautiful
2. Something colourful
3. Something rough
4. Something sharp
5. Something smooth
6. Something opposite of white
7. Fertilizer
8. Something that makes a noise
9. Something that reminds you of yourself
10. Something that is of no use in nature
11. A sun trap
12. Three different types of thorns
13. Three different types of seeds
14. Two different types of feathers
15. Three different types of feathers
16. A sound

Follow-up/feedback: Repeat the activity once or twice and see the change in what they bring. Change the list each time but keep the focus on sharpening perception and using common sense and analytical skills.



LIFE IN MY NEIGHBOURHOOD

We all now know that the earth is a home for a great variety of life which surrounds us all the time. In a sense, these plants and animals are like our neighbours. Just like we know quite a few things about our human neighbours, how about getting familiar with these plant and animal neighbours? In this section, you will learn and teach about the life around you.

10. An Eye for Seasons

Theme: To understand and internalise the rhythms of nature, children make annual calendars based on local environmental phenomena (local weather changes, flowering season, agriculture etc.)

Location: Mainly indoors, small part linked with nature trails

Suitable age group: Class V & VI

Duration & suitable time of the day: One week

Props/requirements: Colours (crayons, water colour), chart/drawing paper (one-side used paper can also be made available)

Key points & process: Begin the activity by describing the important seasonal changes in their surroundings. In the process, intentionally make mistakes (e.g. In May it snows so much, we just sit inside our houses!! Or harvesting begins by June!). Children will quickly point out the errors and you take the discussion from there to what are the important indicators of changes that take place around them. After you go through many of these, suggest that there's a nice way to capture these changes – by making calendars. The children might be surprised, you tell them that they too can make their own calendars. They should identify six or twelve such indicators of change and paint them. These can then be put according to appropriate months (i.e. May/June for sowing, September for harvest, July-August for flowering of common plants, down migration of horned larks for October) with day/dates to make a calendar. They may need some help in finishing of the product. They can take these calendars home after showing them in school. Some very good designs could be used for the school and individual classes.

Follow-up/feedback: The school Nature Club can hold an exhibition of these paintings/calendars. The same can be organized in the form of an inter-school contest and used to make a common calendar.

11. Knowing Our Neighbours: Plants and Animals Around Us

Theme: Children learn about the surrounding natural environment through hands-on experiences as they explore, observe, experience and record the information.

Location: On a trail outdoors (to a pasture).

Suitable age group: Class V to VIII

Duration & suitable time of the day: 2 hours, this activity will yield excellent results if repeated once every month or two

Props/requirements: Notebook, a good field guide to animals and plants of the region (if available), crayons (if available) and keen local naturalist or medicine men that can facilitate much learning and observation.

Key points & process: Lead the group to an outdoor location near the school campus or to a nearby natural landscape. Start the activity by requesting all the children to sit in a circle. Ask them to say something about their neighbours. After getting answers from few students, pause and ask them to think if they are missing any of their neighbours. Give them a clue and say “any neighbours other than people?!” Wait for their reaction. Continue by asking “how about a plant around your house? Or, any animal that visits your home - may be at night, or a bird - a chough?” Wait for their response. Tell them since they know a lot about their human neighbours and not much about the natural neighbours (which apparently are important), today you’ll like them to show you some of these fellows and make some discoveries! “Discoveries?” they may ask in surprise. “Yes, because nobody pays attention to them, they are forgotten! So, we have to figure out how many different kinds of plants and animals there are.”



Now, you can start the trail and instruct them that they can spend as much time as possible with the plants and animals around, but they must get information about a minimum of 20 neighbours. This information should be in the form of drawings, description and interesting things that they can see. Children should use the senses of touch and smell to learn more about the plants. After they have noted the features of a plant or an animal they need to give it a name that they choose. For animals even indirect signs/clues such as droppings, footprints, feathers, feeding signs and calls should also be noted. They will record the learning in the workbook in the form of drawing, painting and creative as well as observational writing. The first trail can focus on plants and the second on animals (including insects, spiders, skinks, birds and mammals). You may ask them to identify the same plants/animals on a trail when they go out again.

Follow-up/feedback: Take children out as often as possible. This will reinforce the experience and learning.

12. Plants that We Use

Theme: Yield first-hand information on the various plants used by local people for food, livestock, medicines, farming, house building etc.

Location: Outdoors

Suitable age group: Class V to VIII

Duration & suitable time of the day: Long-term

Props/requirements: Plain paper sheets, sketch-pens, pencils.

Key points & process: Assemble all the children and ask them about some of the plants that they know for example ginger and how is it used Then divide them in teams and suggest that the scientists and the Government are keen to find out about uses of wild plant species in their region. Each team member can get information from their respective villages and finally prepare a team presentation. They may take help and guidance from experienced elders, medicine-men/healers (amchi) and/or their parents in this. This activity is to be conducted out-of-doors, where these knowledgeable people will lead them on different trails and explore the plant world. Children will categorise the uses as medicine (people/ livestock), food (for people & livestock), agriculture (implements, pesticides etc.), religious etc. This information will be catalogued and presented in tables (see workbook) by each team. It is very important for them to draw these plants and label the important features. The teams will present their findings and compare the same with other teams.

Follow-up/feedback: If possible, take children for a nature trail within a month of conducting this activity and reinforce their findings/learning about the flora and its uses. An exhibition titled “the most benevolent plants of our area” can also be held at the inter-school level.

13. My Special Friend

Theme: To help children connect with nature through building a relationship with plants. They will learn that it is possible and very enjoyable to make friends with plants and that there is a lot to observe, learn from and appreciate in plants.

Location: Introduction in the school, but the plant can be anywhere (at a location feasible to monitor and visit)

Suitable age group: Class V to VIII

Duration & suitable time of the day: Three months to one year (fortnightly / monthly observations)

Props/requirements: Pencil, crayons, magnifying lens (if possible)

Key points & process: Begin by asking children to tell you about their best friends. Let a few of them share this and then you ask “what is special about them?” Ask the children to try and add a new friend to their list a plant! Share your experience with a plant that you observed and visited regularly and how it taught you so much about itself and about yourself. Wait for responses if anyone wishes to share similar stories. Then tell them to choose one plant as a friend and note down the characteristics as well as draw it. Please discuss these features with them and clarify any doubts. Tell them they will also give it their own name. They are to bring this information within a week and then you will inform them that their plants, like friends, need to be visited regularly each month at least twice to record observation on various aspects, which will be recorded in their workbooks. Finally, at the end of the project they will share this information with everyone as an essay.

Follow-up/feedback: They will write about what the friend plant taught them and how they will use it. The teacher could select the interesting essays and send them to the local newspaper.

14. Animal Signatures

Theme: This activity teaches children to identify indirect evidences of animal presence and interpret them. Droppings, tracks, scrapes, kills, feathers and many other signs can be found just by looking around. Like human signatures, these animal signs are different and distinctive.

Location: Outdoors, preferably in a good pasture

Suitable age group: Class VI and above

Duration & suitable time of the day: One hour may be good; it will be more rewarding to do these during early morning or evening when animals are more active

Props/requirements: Magnifying lens (if possible), pencil

Key points & process: Lead children on to a trail and stop at a place where there’s a dropping, bone or feather. Begin by telling them that we are now at a place where there are many residents, but since they all have different working hours (like humans who attend office or go to school during morning

to evening), it is not possible to see all of them at the same time. Further, some are common and some rare; and some are even shy or scared of humans. Let's find out who stays around here! Let the children share their ideas and reinforce the ones that we are interested in. Start showing them various animal signs and end the trail at a place where they can spend some time listening to calls and summarise what they have seen and learnt.

Follow-up/feedback: Children share any interesting memory/experience on the trail and draw various animal signatures in their workbooks.

15. Horns, Hooves and Thorns

Theme: Plants and animals develop special structures and/or behaviour to solve the challenges posed by nature for finding food, protection from enemies/predators and seeking mates. These are called adaptations. Adaptations improve the survival of the organism. Our 'opposable' thumb is a good example of an adaptation.

Location: Outdoors, preferably in a good pasture

Suitable age group: Class VII and above

Duration & suitable time of the day: One hour; mornings/evenings preferred

Props/requirements: Pencil, crayons

Key points & process: Take children out on a trail and ask them to look for plants with thorns. When some of them point at such plants, you can go closer and mumble "I wonder why many plants around here have thorns....these hurt so much!" You are expecting some answers now and obviously there'll be few replies/responses to that. You could say "if I was a plant I would have been really scared of these animals – yaks, cows, goats, sheep and also blue sheep, hare and pika, won't you also be if you too were a plant?!" YES would be an obvious reply from them. You can now tell them that this

"structure" (thorn) that the plants have grown is an adaptation to reduce grazing (as well as water loss in this dry environment). "There are many such adaptations that creatures around here have. Let us explore and come back with such examples of adaptations. Remember, it is structures and behaviours that we are looking for. And these have been formed to solve problems of finding food, seeking protection or partners." Children are busy now and return after about half an hour. You take stock and check what they are doing. If required give one or two more examples and let them then find and draw/write about three to four such examples. Summarise the findings.



Follow-up/feedback: Children write about three examples of adaptations that they have seen on the trail. Let them also draw these examples of adaptations discovered by them.

16. Nono, the Snow Leopard and its Life

Theme: Children will read the storybook (Nono, the Snow Leopard) and present a drama on life of Nono.

Location: Classroom but preparation could be at home/village

Suitable age group: Class VI to IX

Duration & suitable time of the day: One and a half hours (c. 20 minutes for each team) for presentation, one month for reading and preparation

Props/requirements: Masks, costumes etc. (as per need) – these can be made by children themselves by reusing old material

Key points & process: Divide the students in four to six teams in such a way that each team has 10-15 children. Give each team the storybook ‘Nono, the snow leopard’, (turn by turn), if you have only few copies) to read. One week each should be given to them to read the book. They read and discuss the book among themselves and develop a drama based on the story. One to two months may be needed for all the children to have read and discussed the storybook and drama. Each team presents the drama and there’s a small prize for the winning team. The school can invite parents to watch this.

Follow-up/feedback: There can be an inter-club drama (wildlife based) contest. Best artists and drama could be given prizes. This drama can also be presented at the state-level contests.

17. “What If” I’m a Plant or Wild Animal?

Theme: Through this powerful tool, children will role play some of the plants and animals of the region and express their concerns.

Location: Outdoors preferable due to the feelings invoked

Suitable age group: Class V to VIII

Duration & suitable time of the day: Any time of the day, you will need about an hour

Props/requirements: Chart paper, sketch-pens/crayons, threads

Key points & process: Based on the earlier activities such as slide show, nature trails and nature camps; ask children to choose a wild plant/animal of the region and role play it. A role play means the child will take up the role of that particular plant or animal and share its story with others. A role play will include the description of its habitat, food/prey species, predators or enemies, threats or difficulties faced by it and so on. Name can be given at the beginning or other children could be asked to guess it. If children can act like that species and then tell the story, it will become very interesting and funny. They can

also give a special message for conservation of that species. The important thing is to think like that species and believe that they have turned into it. This activity is an important tool for value-building and developing positive emotions as it changes the perspectives of children from human-centred to plant or animal centred.

Follow-up/feedback: Children share what/how they felt while they turned into other creatures.

18. In Trouble: Threatened Plants and Animals

Theme: Many plants and animals are in danger of being wiped out forever from the earth. Several species of plants and animals are threatened in the high altitude Himalaya. Why and how are we affecting their future? Like us, they also have a right to live. How do we ensure that we live in harmony with them?

Location: In-school & outdoors

Suitable age group: Class VII to VIII

Duration & suitable time of the day:

Props/requirements: Living Himalaya CD, pictures of threatened plants and animals

Key points & process: Screen the Living Himalaya CD again and ask children to pay attention to the mention of threatened species of plants and animals and the reasons for their status. After the screening let them write down what they noted in their minds. Show pictures of some of the locally occurring endangered species. Ask them whether they have seen any of these species and whether they like them. Request them to find out from their parents, relatives and elderly villagers about the status of these species in the past and reasons for their decline. They'll present the same in class after a week or at an appropriate time.

Follow-up/feedback: Children make a poster on endangered species which are displayed in school and selected ones could be printed by NCF/SLT.

19. Water Pilgrimage

Theme: Children trace the course (and if possible source) of their water, appreciate its importance and learn about the water cycle.

Location: Introduction in the classroom, activity to be conducted outdoors (half day to one full day)

Suitable age group: Class VI to IX

Duration & suitable time of the day: Introduction (30 minutes), one day for the outdoor part

Props/requirements: Magnifying glass, notebook, pen, packed lunch/snacks

Key points & process: "I have decided I'm going to live without water for a month!" you tell children with a slightly serious face. "You can't do that", "you'll die", "it's not possible", "you're lying" will be



some of the likely responses you will get. You can respond by showing interest in what they say and stress the point that water is essential for life. “Well, where does the water come from; in our school and in your village?” you ask the children. Please wait for responses. Some children might tell the correct answers. You can further probe this by asking how many of them have actually seen the spring/stream/river beyond the village and for how far have they been along that? Most children would not have seen that. Plan a trip to explore the source of their water the next day.

Next day early morning, assemble students at the spring/stream/river bank and tell them they will begin their journey to the source. They should look around and note down what they see. Basically, the idea is to have a good experience and convert the walk into a nature trail. Time and again, take them closer to water and let them have a look and marvel at the pebbles, ripples, sound of water and so on. After a walk of about an hour or so, suddenly stop and tell them that you feel that the stream wants you all to sit and listen to her story. So, all children sit in meditative posture and recite “Oh, giver of precious water, the stream, we want you to tell us your story. We respect you and bow to you.” Have a quiet time for about ten to fifteen minutes. Then thank the stream and take a feedback about what the stream shared with them. It’ll be truly amazing to hear what they all come up with. Reinforce the good points and encourage all to share. Don’t forget to summarise the whole sharing.

Continue the walk...this way children will start admiring and enjoying the stream. If you can, reach the source, otherwise just say, “when you grow up you can go all the way till where it starts! Right now we are more interested in understanding how water on the earth keeps moving in a great cycle to become available as sweet water – again and again.” Then stop at a beautiful open place to tell them about water cycle. Specifically tell them how we all are a part of this great cycle and how we depend on it. Afterwards, children can have their packed lunch. It’ll remain in their memory forever including the connection with the stream and the water cycle. Summarise and end the trail. Thank the stream

again and thank all of them for being patient and co-operative. They should write down their experience and learning. On your return, request the children to clean the stream of all garbage, plastic and other rubbish which can be burnt or buried after reaching the village/school.

Follow-up/feedback: You may divide them in teams and give a water testing kit to check the status of water quality. The “Water wise” activity is a good follow-up as it is connected to this activity. Just like the stream being important for them, the rivers are flowing from their region to the plains. On a map they can trace the course of these rivers and colour it. A special water cleaning activity can also be organized in the form of “Clean the streams day” for their area.

20. Looking for Gold

Theme: Children understand that soil is not just the top portion of land or dust, but a living medium responsible for sustenance of life.

Location: Village crop fields, pastures

Suitable age group: Class VI & above

Duration & suitable time of the day: Two to three hours

Props/requirements: Magnifying lens

Key points & process: Take children to a crop field. After reaching there, you begin to inspect the soil. Out of curiosity, children also start looking and some of them ask “what are you doing?” “I’m looking for gold.” “Gold?” they ask unanimously. “Yes, gold. It seems many treasures lie over here. Would you help me look for it?” Children look puzzled, some are already suspicious, while others have started looking. Suddenly, you show them a lump of soil and shout “I found it, I found it!” As they gather around you, you show them the clod. They’ll show signs of dismay and surprise. Just tell them to sit around and tell them the story of an old man and his lazy children.



Story: It happened long ago in Ladakh. There was this very hard-working farmer who had experimented a lot with his crops and farm. By continuous effort he had also made good money and owned a very fertile and huge piece of land. He had four sons and none of them were interested in land or farming. One day, this old man felt that his time was near and that he may die soon. Realising that his lazy sons could lose all that he had earned after working hard, he called them at his bedside and said “I have called you here to tell you a secret today.” The young men were curious and listened carefully. “There is a treasure, mainly gold and jewels that I have buried in our farmland. Unfortunately, since I did it long-long ago, I don’t remember where exactly it is. But one thing I know for sure; if you find it none of you will ever need to work!” His sons were now eager to find the treasure. “Shall we look for it?” the eldest one asked. “No, do it after I’m gone.” He died the next day and the anxious sons went and started digging the field. It was spring and most people in the village had started ploughing their lands. These young men dug the whole area, but found nothing. For a few days they went on but did not succeed. One day, an old man passing by said “You have ploughed your field so well. Why don’t you sow some seeds of barley and plant some willows on the bund?” None of the sons would have done that earlier, but now that they had worked so hard they decided they should put seeds and plant the willows. As they did that and kept thinking for treasure that their father had asked them to look for, the crop was ready. They harvested it and found that it was a bumper crop. They sold some and kept the remaining for their families. The willow trees were growing well too. They tried every year in vain to dig for treasure and each year a bumper crop and taller willows rewarded them. One day, after ten years since their father had passed away, the same old man went past their farm. The eldest son called him and gave some tea and bread and asked him “Uncle, are you aware of any treasure that our father buried here? He told us to ask you if we do not find it. We thought we’ll have to share it with you, so we didn’t ask you earlier. Could you tell us something about it?” The old man started laughing loudly. The sons were clueless, they just stared at the old man, as if asking “what’s the matter?” The old man continued, “your father was a very intelligent and hard-working man. He did not want his hard work to be wasted by a bunch of lazy boys. So he told you about this treasure which was never there!” The sons were furious. “He cheated us.” The eldest son was thinking and intervened. “Now I understand. All the crops that we got and the willow wood for building a new house is the treasure that he referred to, isn’t it Uncle?” “Yes, my boy, at least you have inherited some sense from your father. You are absolutely right. And now that you know about this treasure, you better take care of it.” He went off laughing and the sons had learnt their lesson.

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After the story, you ask them “you believe it or not? Let’s look and find out for ourselves.” And so you start exploring the area around. They join you soon. Take out the lens and start showing different living creatures (both animals and plants) and keep saying “one more jewel”, “one more gold coin”....they will soon figure out what you’re hinting at. After about half an hour of excited exploration and focused attention on soil, you can pick a clod and say, “who sows seeds each year in this? Nobody, but still so many plants grow and spread. That is because the soil is living.” You can now lead them to the soil cycle. Tell them how nutrients in the soil are used by plants which are eaten by animals and finally when both die, these nutrients return to soil. Sum up and ask them to write the learning in the workbook.

Follow-up/feedback: The activity on soil degradation and effects of grazing are good follow-up activities. You can also show a movie or book on soil and natural/organic farming to drive home the point that soil has all that the plants need and nature already knows how to recycle the stuff.

MY LIFESTYLE

The way we live on the earth is called our lifestyle. Our lifestyles differ depending on the culture, traditions and economic situation. And yet, our lifestyle is something that we can choose to a large extent. Since, our lifestyle has an impact on earth's biodiversity, we can reduce this impact by choosing a less damaging lifestyle. In this regard, the most important aspects of our lifestyle are 'energy' and 'materials'. By observing and reducing the use of these two in our daily lives, we can reduce our impact on the earth. The following activities guide you to make a difference on the earth.

21. No Free Lunch

Theme: Each action of ours and lifestyle choices have impacts on the earth and her wildlife. It helps children grasp their impacts on the environment and become aware of the needs to develop within the ecologically sustainable products and processes.

Location: Indoors, classroom

Suitable age group: Class VIII & IX

Duration and suitable time of the day: One week

Props/requirements: Film(s) on lifestyle issues

Key points and process: Explain to children what is meant by lifestyle. Give examples of people with different professions or economic backgrounds. Then ask one child to describe a day in her life. Identify different resource uses (energy/material) and trace their origin. For instance, if she begins her day with tea, you talk about its source (tea plant), where is it grown, its mode of transport, packaging and how it is marketed (e.g. advertisement). Tell children that each of these steps has a cost associated with it. Give more examples which are different and complicated (like petrol). Also share some local produce related uses i.e. milk. Show them that for each use/action there's a source and a sink. The farther the source is and the more time/energy it takes in reaching them, the more ecologically expensive (higher impact) it is. Ask children to look at their lifestyle (a sample of their entire day) and analyse it to come up with a chart of their impact in a week. Use the following table to calculate rough costs/impacts of the items and write these costs. They write their daily energy and material costs and multiply it to arrive at monthly and annual energy costs. They should include food, water, clothes, study material, transport, toys, energy etc. in this analysis. You may need to help them a bit and show a few examples in the class. Encourage them to compare the analysis of each other's lifestyles and impacts. Children now have the knowledge to make a conscious choice about their lifestyle.

| No | Type of product | e-Cost |
|----|---|---------|
| 1 | Raw product (locally available) | 10 |
| 2 | Raw product (local) with packaging | 20 |
| 3 | Processed product (local), transportation | 30 |
| 4 | Processed product with packaging and transport (long distance, outside state) | 60 |
| 5 | Processed product with packaging and transport (foreign good/imported item) | 100 |
| 6 | Energy from decentralized/local source (solar battery, fuel wood, dung) | 25/unit |
| 7 | Energy from centralized channel (hydro, atomic, thermal, wood) etc. | 50/unit |

Follow-up/feedback: Children will write their observations on their lifestyles and learning in the workbooks. This activity could be linked with ‘keep the capital...’ activity.

22. Keep the Capital, Reap the Interest

Theme: Students understand the ‘concept’ of sustainability and learn to see both sides of the coin: what happens when you ignore it and when you consider it.

Location: Indoors, school campus

Suitable age group: Class VII to IX

Duration & suitable time of the day: 1 hour, any time

Props/requirements: A chalk, small stones (number to be double the number of students present)

Key points & process: Start the conversation with the children by asking them “do you eat chocolates, and if yes, where do you buy these from.” You ask them to think of a situation when they just keep buying chocolates; what will happen. The jar will get exhausted! What does the shopkeeper do? He will refill the jar. But, what if there’re no chocolates to refill it? Does that happen? Yes, it is happening on the earth though not with chocolates but with our real necessities like food and water on earth. How? Let’s understand through this activity. Now, ask the children to go out of the room and place the stones in the room. The number of stones should be more than the number of students. Tell them to enter and pick one stone each, adding that this is their need from the earth. What happens? There’ll be many stones (resources) left. Ask them to put the stones back again and ask some students to pick two stones each, the rest will take only one. What is the result? Still fewer stones will be left, with some people having more than required and others having what they need. Now, ask them to take any number at their will and observe what happens. No stones left! How many people have more than they need? How many have what they need and how many have ‘nothing’? Ask them why this happened. Get enough feedback. Ask them when did they fight, if they did and why? Ask them to sit and pause for a while. Tell them that they’ll play the game again, but now it’ll be their pasture that the room will represent and the stones are grass/forage. Repeat the game and discuss. Then reduce the number of stones by half as growing human and livestock population will exhaust resources. Discuss like before and tell them to think how they can solve this problem of unsustainable use? Summarise the activity with the concept of sustainability, consumption and needs/wants.

Ask them how their ancestors solved the problem in the region? Is it working now? Why or why not?

Follow-up/feedback: They should write down the learning in their workbooks. Ask the children to observe the whole year’s farming cycle and write in their workbooks whether it is sustainable and give reasons for their view. Conduct the needs/wants activity soon after this activity and link the two while reinforcing the former. You may also link it with ecological footprints activity later. Using this understanding you may assign them a project to evaluate some of the developmental activities taking place in the region. Local youth and teachers will help them in the process.

23. Water Wise

Theme: Children focus on various uses of water thereby asserting its crucial role and conservation in their lives.

Location: Classroom, and outdoors (crop fields, village stream, village and upstream)

Suitable age group: Class VI to IX

Duration & suitable time of the day: One week

Props/requirements: Bucket, watch, notebook

Key points & process: Children are involved in measuring the use of water in their daily lives as well as in different activities. Instruct them regarding what needs to be done. First they should find out how much water is used daily in their homes and find average household water consumption. Then they go and find the quantity of flowing water of the village stream. Ideally, they go to the point where they fetch water and collect water in a bucket of known size for one minute. This will give the approximate volume of water in terms of litres/minute. They will need a watch for this. Multiply this by 1,440 to get water volume per day (i.e. 24 hours = 1,440 minutes). Now, they find out the consumption of water in homes. Once they have done it, they have total inflow and use of water which can be compared. Water used for farming, schools and hotels can be found out and compared with household uses. This will give them excellent information on water income-use and balance. They will show this pictorially and present their findings in the school.

Follow-up/feedback: Children can present their findings and conclusions to the YAC and villagers. They can also get involved in improving the situation with YAC and keep monitoring water quality in their villages.

24. Golden Legacy

Theme: Children are made aware about various activities leading to soil degradation. Later they explore ways to tackle this and carry out small projects.

Location: Village surroundings

Suitable age group: Class VII to IX

Duration & suitable time of the day: two hours for first part, one week to fifteen days for the next

Props/requirements: Film CDs

Key points & process: Children are walking with you on a trail leading to their pasture/higher mountains from the village. You stop at a place and ask them, “What happens if we have a lot of wealth/gold, but don’t look after it? Well, this soil gold of ours is being wasted like that.” As the children begin to show interest, you go ahead. Pick a handful of soil and tell them that soil takes many thousand years to form and each inch of topsoil is invaluable, so if we lose it (let it fly from your hands!) it’s one of the biggest

losses. In a way, good soil means good agriculture, healthy pastures and sound future! Natural causes like erosion are always present, but it is the man-made causes which are a reason to think about. You discuss the causes of soil degradation and loss, especially building of roads, landslides, construction activities, loss of vegetation and faulty land use practices including heavy grazing. Children write these in their workbooks and think about ways of preventing/reducing such degradation/loss. You may help them by showing resource material like films or books.

Follow-up/feedback: Students take up a project in teams, to communicate ways to conserve soil; this can be through posters with messages of soil conservation, models or actual structures (miniature) in their school campus or a nearby village. The same could be displayed in the school/village.

25. Where's My Grass?

Theme: Children understand the impact of livestock grazing and become aware about the importance of pastures for livelihoods in the region.

Location: Village pastures

Suitable age group: Class VII & VIII

Duration & suitable time of the day: One day - on trail, announcements to be made on the previous day; two hours for skits

Props/requirements: Grass tussock and livestock dung



Key points & process:

Part 1: You announce the activity on the previous day and ask them to assemble at a particular location the next day with some food, flasks containing tea/hot milk, workbooks, pens/pencils and notebooks for the next session. After everybody has arrived, you begin by telling children, “today we will go to the pastures and figure out why and how grass/forage is so important in our lives.” Children are led by Youth Awareness Club (YAC) members on a trail to a nearby village pasture. Showing different plants and animal signs, they move into the pasture and observe the livestock. One of the members talks to them about pasture health and shows some indicators such as composition of plants (more unpalatable/thorny species), soil erosion (blank patches) and failure of flowering. Children are then shown signs (at least two conditions from these three) of overgrazing, moderate grazing and no grazing. YAC members also talk about what influences pastures apart from grazing and feeding by wild ungulate species. The number of livestock and wild herbivores vis a vis their biomass needs are explained to children. Children spend some time groping with this information and are shown droppings of various herbivores as well as encouraged to ask questions about livestock, wild herbivores and pasture health. Lead them into a nice, relatively flat and open patch and announce that “all of us are soon turning into the animals we’ve so far been watching and talking about” and play the following game to understand the idea.

Part 2: Assign different roles to children and divide them into yaks, dzo/dzomos, goats, sheep, donkeys, horses, bharal (blue sheep) and ibex. Keep their proportion similar to the real ratio of these herbivores seen in the region/village (70-80 % livestock, 20-30 % wild herbivores). There should be two-three ‘herders’ to tend these. Mark a small area and leave them to graze. Tell them that they can ‘eat’ at a given place only for a few seconds as it is no longer rewarding to eat there. They can’t also return to the same patch later! Tell them to observe what happens. As they feed, they also need to follow certain rules:

1. The bigger animal can replace smaller one.
2. Unless the bigger one moves away, smaller animal cannot go there.
3. Smaller animals will move faster than bigger ones.

Soon there’ll be commotion and confusion. Ask them why this happens and who suffers the most. Watch the herders. Now, ask only wild animals to be there; no domestic livestock or herder. Then allow domestic livestock to go one by one with different sized species entering at different times. Summarise by talking about competition and finite resources being shared by the herbivores. This may help clarify our attitude towards wild herbivores. Also motivate them to think about how they can reduce this conflict. Ask them to write their learning in the workbooks.

Follow-up/feedback: Children can write an essay titled “How to look after our pastures” and present it. They can also learn more about the use of pastures by accompanying elders or YAC members to their village pastures.

26. Living with Wildlife: Co-Existence or Conflict?

Theme: Children understand that issues of human-wildlife conflict are complex and resolving them requires common sense, skill, sound ecological knowledge and proper dialogue between the different groups (stakeholders) involved.

Location: Outdoors

Suitable age group: Class VII & above

Duration & suitable time of the day: Two days

Props/requirements: Write up on four models of conflict resolution tried and tested in the high altitudes viz. livestock insurance schemes involving compensation, better herding practices, predator-proof corrals and grazing-free reserves.

Key points and process: Reach a spot with a good view of the pasture/landscape and ask everyone to sit in a circle. Start a discussion after assembling the students in a circle by asking them questions about what problems do livestock face in their respective villages and which ones are the most important. After listening to a few responses, divide the group into four teams and give each team two/three copies of the write up on human-wildlife conflict resolution in the high altitudes. Give them about 30 minutes to read and discuss the same. Again start a discussion with them on the different approaches and which one they think is better and why. Ask each team to prepare a skit on one of the approaches and present it the next day/weekend.

Follow-up/feedback: Each student talks to her/his parents and elders about the conflict resolution approaches in his/her own village during holidays. They then report on the responses given by the villagers. Teachers concerned share this with the NCF/SLT staff members.

27. The Earth is Heating Up!

Theme: Global warming or Greenhouse Effect is a major environmental problem faced by biodiversity on earth. In high altitude regions, this can lead to (and has led) drying up and retreat of glaciers and unpredictable weather, both of which will affect people and wildlife.

Location: Greenhouse in the village or a neighbouring village.

Suitable age group: Class VII & VIII

Duration & suitable time of the day: Any time, preferably spending half a day (morning to afternoon).

Props/requirements: Thermometer

Key points and process: Take the students to a nearby greenhouse and explain to them that the structure helps retain warmer temperature inside so that plants get appropriate conditions to grow. Similarly, Carbon Dioxide (CO₂) – a product of burning of fossil fuels and respiration in animals and plants, creates a heat trap over the earth leading to a rise in the earth's temperature. Hence, it's called the Greenhouse effect. Take a thermometer reading or just ask them to feel the inside temperature and compare it with outside temperature. Do the same again on an hourly basis till about noon and let children write what they feel or observe with regards to the temperature between inside and outside temperatures. Explain to them that the same is happening with the earth for the past several years and this could lead to melting of ice caps on poles, retreating of glaciers on the mountains like Himalaya, changing of ecosystems and extinction of wildlife. Discuss the major players i.e. fossil fuels used by our automobiles, industries and most important our daily consumption patterns. It is important to ensure that they understand their own

role in this phenomenon and how they can help reduce the risk by changing the way they live. Later, you can talk to village elders or assign a project to students to collect relevant information from such people regarding the changes they have observed in weather phenomena.

Follow-up/feedback: Students write in their workbooks about what they learnt from village elders regarding the changes in glaciers, stream flow and temperatures over decades in their respective villages/region. They also write the three things that they would like to do to reduce their own impacts on the earth.

28. What Does the Garbage Tell You.

Theme: Children learn that solid waste consists of different items which should be disposed off separately and treated according to their likely nature of impact.

Location: In-school & outdoors

Suitable age group: Class V to VIII

Duration & suitable time of the day: This will be a bi-monthly activity

Props/requirements: Waste chart, dust-bins painted by children for different categories of waste, film(s) on subject

Key points & process: You start with the familiar example of our body and tell children that waste products of our bodies are discarded in the form of urine and feces. Similarly, human societies generate a lot of waste too. However, the major difference is that our body wastes are utilized by other creatures and ultimately go back to nature, whereas wastes generated by human societies are rather complex and many cannot be broken down by natural food chains. So, special effort and mechanism is needed to break these wastes and recycle them. Hence, it is important to reduce wastes and learn to reuse and recycle. Give the waste chart to children and discuss the different types of waste.

Waste Chart

| Type of waste | Examples | Fate | Recycling |
|---|---|---|--|
| Organic waste (biodegradable) | Food remains, livestock dung, leaf litter | Naturally decomposes and degrades to soil | Not necessary, but can be improved by aeration and earthworms |
| Dry waste (non-toxic, slowly biodegradable) | Clothes, paper, leather items, wood etc. | Take more time to degrade, but decompose biologically | Necessary for paper, can be reused in many case |
| Complex waste (generally non-biodegradable) | Mixed materials - Tetra packs, vehicles, e-waste, toys | Remain for thousands of years | Necessary, some items recycling not possible |
| Toxic waste (mostly non-biodegradable) | Batteries, medical/hospital waste, medicines, pesticides, paints, e-waste | Few can degrade, but due to toxic nature cannot be allowed to be disposed | Need separate disposal and treatment for degradation/destruction |

Ask them to find out how many different types of waste are generated in their homes/village/school/ hotel etc. They should be shown how to classify these and assign different routes for reuse/recycling. Are these being followed? If not, who do we ask for help? These questions can also be asked. You can show a film about a successful waste disposal programme or children’s action project of similar kind.

| Object | Approximate time for degradation* | Object | Approximate time for degradation* |
|---------------|-----------------------------------|--------------------|-----------------------------------|
| Styrofoam cup | Eternity | Glass bottle | Unknown |
| Plastic bag | One million yrs. | Soft-drink can | 50-500 yrs. |
| Leather Shoes | 40-50 yrs. | Wood | 10-15 yrs. |
| Wool sock | 1 yr. | Cotton rag (cloth) | Up to six months |
| Paper bag | 1-2 months | Banana peel | 3-4 weeks |

* all objects generally take more time to degrade in the cold, high altitude environments

Follow-up/feedback: Children launch a poster campaign for “Clean & Green Himalaya.”



MY VILLAGE

Any village in the high Himalaya is a closely-knit world. The challenging weather and physically tough life make it natural for people to live with mutual co-operation. It is here that the traditional ecological knowledge and cultural wisdom of centuries can still be seen. Though times are changing fast and the villages that were not even connected by a proper road today have excellent means of communication and transport. It is really important to pay attention to the man-nature relationships in the villages before things change beyond recognition. We have opportunities to conserve both wildlife and age-old human wisdom and develop sustainable wildlife conservation models where local communities live in harmony with nature and share the joys and benefits of such an arrangement.



29. Biodiversity in My Village

Theme: Children document the knowledge and awareness about the floral, faunal (and cultural) wealth of their village.

Location: Indoor

Suitable age group: Class VII to IX

Duration & suitable time of the day: One month

Props/requirements: Posters on local wildlife and Nono storybook.

Key points & process: This activity will involve children in systematically documenting the biodiversity in and around their village. It is based on “knowing our neighbours...” activity in which they would have learnt about plants and animals in and around their village. They will now assist in a parallel process of documenting biodiversity of different villages in their region which will be carried out by the YAC. This will lead to developing a Local Biodiversity Register of the village. They will help in making a booklet on the village biodiversity. They will assess the commonness and rarity of the flora and fauna based on a scale developed by them. Some of the cultural dimensions of biodiversity (such as stories, legends and traditional practices beneficial or respectful of wildlife) will also be dealt with by them. This will make them feel proud of their village. Guidance from YAC and elders would be useful and promoted.

Follow-up/feedback: This information could be useful in any conservation planning exercise. The list of ‘species needing attention’ for each village would be a useful resource. It’ll be good to link this activity with “Our Neighbours...” and “My village: past...” as it will reveal the importance of plants and animals as well as changes at the ground level.

30. My Village: Past, Present and Future

Theme: A visualisation (scenario) and evaluation activity, it dwells on the past environment of the village and goes on to future projections and how children will like to see their village environment and what they are prepared to do about it.

Location: Indoors, through meetings and group discussions; can also include a visit to the village pasture(s)

Suitable age group: Class VII to IX

Duration & suitable time of the day: One month.

Props/requirements: A “letter” from the Government

Key points & process: This activity begins with a bit of drama that you will enact. Inform the children about a ‘letter’ you have received from the Government to find the village with the most aware children. Show them the ‘letter’ and explain what they need to do when they are home during the Dussera/summer/winter break. They need to begin by seeking a meeting with the elders and youth to take their views about the past environment (about 50 years) of the village. This will be based on a questionnaire given in the workbook. The answers will be written at this stage in their notebooks. They will then ask people to talk about how they visualize their village in the coming 50 years. They will do this with a sample of about 10 to 20 individuals of different age (10-25, 26-50, >50 yrs) and gender. Collected information will be summarized and analysed. These findings will represent the 100 year environmental journey of their respective village. This survey is carried out in teams that are formed of students hailing from the same or neighbouring villages. Different teams will make their presentations about what they found when they are back at school.

Follow-up/feedback: Children will write their understanding/analysis of the responses in the workbook. An inter-school essay competition on “My village: My vision” could be organized. The best entries could be awarded prizes. Children will submit their findings to YACs of villages and discuss a course of

action for the respective village. The three best judged essays could be sent to the Chief Minister as well as to ministers of education and rural development of the state. Who knows, this may actually motivate the political parties to do something based on what people have said!

31. The Most Knowledgeable Elder Contest

Theme: Children collect information on the ecological knowledge (local flora, fauna & processes/interrelationships) among the elders and award the prize for this to selected individuals.

Location: Individual villages

Suitable age group: Class VI to IX

Duration & suitable time of the day: Three months

Props/requirements: Not required

Key points & process: You begin by referring to traditional wisdom and knowledge of local people and provide some examples/ask children to share the same. Then find out from them what they think about this knowledge as far as its usefulness and relevance is concerned. Extend the talk to ask how they rate their parents and other villagers in this regard. Next, you may ask them “can you take the challenge of finding out who is the master of this knowledge in your village?” Obviously children are interested, but don’t know how to go about it. First, you should ask them about some ideas and share your ideas. Finally, a strategy based on interview and field testing will be developed. Tell the children that they will collect this information by asking YAC members, monks and women of the village. Based on their feedback, they then will contact the concerned people. These few recommended people will be interviewed by the children and their field knowledge tested by a committee consisting of teachers (from local schools) and scientists from NCF. Similar contests in several villages of the region would give a wonderful insight into the local knowledge levels and the contest will lead to identification of up to 10 such people who could be felicitated and awarded prizes.

Criteria

Plant identification

How many different plant species can they identify?

Where do these plants grow and why?

Animal identification

How many different animal species can they identify?

What are the habitat preferences of these species and what’s their biology/ecology?

Uses of plants and animals

What is their knowledge about uses of plants and animals?

Ecological processes

What are the roles of plants/animals in nature?

What factors affect the balance of nature?

Why conservation is important?

Follow-up/feedback: A booklet on local knowledge heroes of the region can be brought out after this activity. Government recognition and other support could also be facilitated by the concerned YACs.

MY SCHOOL

Since most children go to school, the role of teachers is of utmost importance. A good environmental education programme run in a school can fulfill two crucial needs of education today. First, through frequent outdoor activities and first-hand contact with nature it can provide what children are missing by not going to their fields/village pastures. Second, it can empower them through awareness to act responsibly and get involved in conservation of nature. School environs can be used for bringing about changes (e.g. cleaning and greening of the campus) and extend these to communities in far off villages through child-parent interaction.



32. My School: Clean and Green

Theme: Through this, children take the responsibility to keep their respective schools ‘clean and green’.

Location: School campus

Suitable age group: Class V to IX

Duration & suitable time of the day: Twice every month

Props/requirements: Buckets, water sprinklers, spades, brooms, dust bins etc.

Key points & process: In one of the initial Nature Club periods, tell children that there is a ‘Best

Himalayan Nature Club' award that will be given each year. A club that is most active, environment-friendly and innovative will receive this award. Children will be excited on hearing this. Tell them that the competition will be tough and they'll need to work hard. They'll get two periods for this work each month. Cleaning the school campus, planting various trees and smaller plants and reducing, reusing and recycling the waste generated by the school should be the focus of this period. Let there be a detailed planning session and let them come with alternative ideas as to how they visualize their school campus. Based on the final/accepted plan, they'll carry out the needed actions. They will (with the help of teachers and youth) learn to reuse and recycle part or all of the waste (including wrappers/plastic bags). They will also separate the different types of garbage, learn about its disposal and effects of improper disposal as well as reuse/recycling.

Follow-up/feedback: Teachers can help by doing a photo-documentation of children's efforts over a period of time. You could organize activities such as those linked with garbage as a follow-up of this activity.

33. Wildlife around My School

Theme: Children explore the school campus and the surrounding area to document their respective school's plant and animal diversity.

Location: School campus

Suitable age group: All class (V to VIII)

Duration & suitable time of the day: Once every week or fortnight throughout the year, each session to be of about 45 minutes

Props/requirements: Pencil, crayons, plain paper, magnifying lens

Key points and process: Take children outdoors and introduce them to the plant diversity of the school campus as well as its surrounding environment. Point out that there are animals too, mainly insects (beetles, ants, butterflies, bees etc.), spiders and birds. Ask them to think about which larger animals could be around....at night? Let them be out for half an hour to forty-five minutes throughout the year on a weekly basis. Ask them to make a collective list with diagrams/paintings. Each class can display their section of the exploration.

Follow-up/feedback: Immediate follow-up will involve the cross-word puzzle and drawing/painting of 10 species that they liked the most. Later, teachers can help by organizing a permanent display of children's work. Whoever visits the school can see the wildlife drawings and paintings made by children.

MY CONTRIBUTION TO THE ‘WORLD’ WHERE I LIVE

“There’s only one corner of the universe you can be certain of improving, and that is your own self.” - Aldous Huxley

As we’ve seen earlier, the crux of nature conservation is how we humans shape our lifestyles. It is our use of energy and materials that will largely determine how life will fare on this unique planet. Our earth can remain rich and healthy only if we all act, first in our own lives and then collectively as a society. It is important to target such a change among your HNC children and the activities below are just a beginning in that direction...

34. How Can I Help in Conserving Wildlife of the Himalaya?

This activity summarises the learning that the child would have acquired during 3-4 years of being a part of the school Nature Club. Here, the child is expected to write a letter to his parents/teacher regarding what (s)he will do on her/his own as well as collectively for conserving wildlife of the Himalaya.

Action/behavioural change is the ultimate aim of any environmental or conservation education programme/activity. You as a teacher could play a vital role in motivating children by setting up examples of good environmental behaviour and motivating them to take action on neighbourhood issues or problems of environment. This can be done individually, collectively and with other institutions/government. In a democracy, it is important that they participate in improving their environment. Besides, our constitution has clearly outlined that clean air and water are our rights. We also have a right to seek and get information. So, if we get children involved in these early in their lives they can be active and aware citizens of future. From changing their own lifestyles to reducing the ecological impact, they can do small but important things that will go a long way in improving their natural environment.

Some ideas for action

- *Plant and nurture a few herbs/shrubs and trees around their home/in their village*
- *Observe wildlife and keep record of the same*
- *Help the YAC members in wildlife monitoring*
- *Writing letters/emails to the Government and media to focus on local environmental issue*
- *Reuse waste to create pieces of art*
- *Clean a public place and beautify it*
- *Create a nursery of local plants in school*
- *Rescue and support wild animals in winter*

35. Snow Leopard: The Symbol of Our Co-Existence with Wildlife

Each child makes a drawing/painting of snow leopard and other wildlife (if they wish to). (S)he also writes on why and how snow leopard can be a good symbol of peaceful co-existence of wildlife and people. We will choose five or more good write ups and use them for a booklet and for other educational and conservation activities.

OTHER SUGGESTED ACTIVITIES

Meet Nature: Going Camping

Spending three-four days in the outdoors can be a life-changing experience for many children. The fresh and rejuvenating environment and moving away from daily life will help children relax. Their natural curiosity will be aroused and you will see them exploring, investigating and lost in a sense of wonder and awe. Once let loose in the outdoors, children become more receptive and open and take in a lot of learning. Apart from the qualities and changes described above, they also develop/express leadership and teamwork, self-reliance, confidence, co-operation and intuition. The younger they are the better it is, but for practical reasons it is good to take children of six years and above only for camping (overnight or more depending on age). Ideal duration for a nature camp is of three-four days. During the camp, various activities can be carried out. Each day at least two nature trails, one round of sharing of experiences, camp-fire, two/three games, some reflective practice (meditation, silent observation, listening) and some entertaining activity should be undertaken. Weaving adventure and discovery in the programme would make it more exciting for children.

Wildlife Week/World Environment Day Celebrations

October 2nd to 8th is celebrated as wildlife week. June 5 is celebrated as World Environment Day. You can plan a series of competitions on one day or spread over three-four days. These competitions could include wildlife quiz, elocution, debate (conservation issues of their region), painting competition and drama. Such events would help increase awareness, knowledge and exposure of children to wildlife conservation.

