

Participant's Pledge for 'Prithvi Sankalp'



Designing for future



Learning in the field



IMS and IMD - Connecting our Vision on Learning

Programme Eco Weather Watch

April 22, 2017

A partnership programme between
Indian Metrological Society (IMS) and
Earthwatch Institute India
With knowledge mentorship of
Department of Science & Technology
(DST) and Indian Metrological
Department (IMD)

Prepared by Earthwatch Institute India
New Delhi

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CONNECTING TEACHERS AND STUDENTS WITH SCIENCE USING THE FIELD OF METROLOGY

RATIONALE

At Earthwatch Institute India we believe in the concept of engaging people in scientific field research and education to promote the understanding and action necessary for a sustainable environment. To make the surrounding of everyone, the experiment area for experiential learning.

Earthwatch India plans to act as a facilitator of transformation for opening a platform for experiential learning. Earthwatch Institute India offers immersive experiential learning programmes grounded in scientific research and opportunities for developing knowledge and skills of every child.

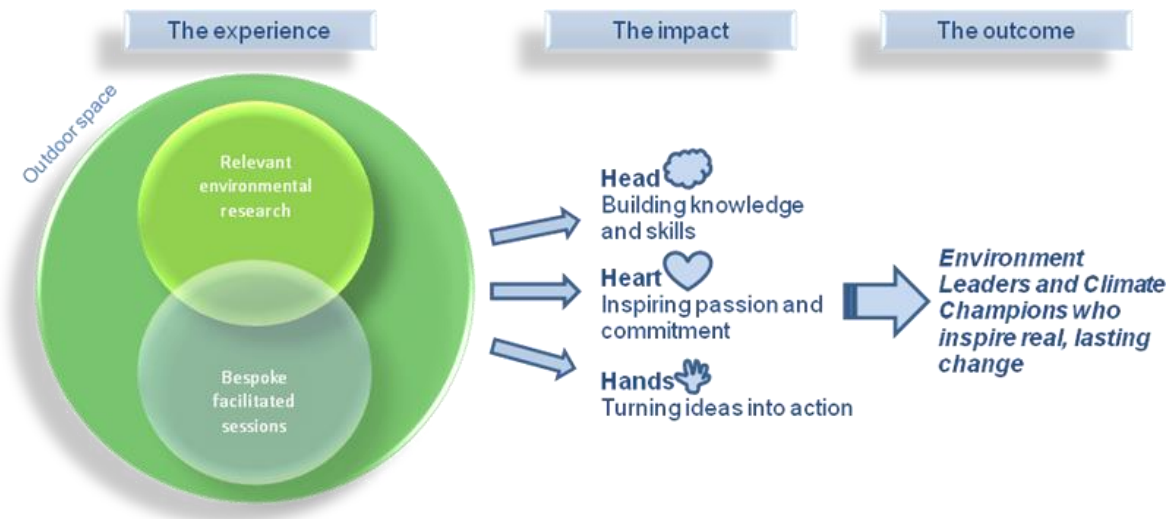
There is enough in the world for man's need but not for man's greed.
~ Mahatma Gandhi

WHAT WE MEAN BY CITIZEN SCIENCE

Time and again, 'Citizen Scientists', member of the public who voluntarily help scientific studies have made a real difference to research, for example by meticulously collecting data with a well-planned project, a list of tasks suitable for the general public, and a strong leader who can ensure that volunteers as citizen scientists are productive, citizen science can work. Volunteers work in small groups, overseen by scientific experts, and make a valuable contribution to scientific field research. Citizen Science has the **potential to bring young people and science together at the field level and empower them with the knowledge, understanding and conviction to build conservation efforts at the local level**. Creating and developing an effective citizen science model that fosters partnership between people, science and scientists will be a significant step towards this end.

WE DO THIS THROUGH EXPERIENTIAL LEARNING & DIGITAL TOOLS WHICH IS:

Citizen Science projects combine volunteering at a field research project along with bespoke facilitated sessions designed to increase understanding of environmental and sustainability issues. Experiential learning enables participants to explore their own as well as others' values and belief in connection with the natural world and encourages participants to crystalize their vision for environmental sustainability and build a strategy for themselves.



“Tell me and I forget, teach me and I remember, involve me and I learn”
 - Benjamin Franklin

The Head, Heart and Hands approach which is the underlying model for experiential learning helps combine volunteering on an outdoor field research on sustainability with customised sessions on environmental issues. These programmes create a transformation by enabling people to step out of their normal surroundings and onto an experiential learning opportunity that impacts their hearts and minds and turns their ideas into plans for action.

The Experiential Learning Field Programmes are designed by specialists and learning facilitators, keeping in mind the needs of the stakeholders such as students, teachers, young researchers, farmers, executives and other professionals. Earthwatch Institute India is developing experiential learning modules for various stakeholders on thematic areas such as – Ecosystem Services, Sustainable Agriculture, Pollinators, Sustainable Forests, Urban Freshwater and green Spaces, Climate Change, Amphibians, Marine Ecosystem. Experiential Learning Field Programmes provide inspirational professional development opportunities for citizens through participation in field research projects- catalyzing behavioural change and fostering a lifelong commitment for the environment. These programmes foster innovative thinking among employee participants on the role they play in providing solutions to sustainability challenges.

WORKSHOP SYNOPSIS

WORKSHOP PURPOSE

Programme Vision: To help initiate an interest in Schools, Scientific Community, Corporates and everyday citizens, on learning about the three thematic area:

- Urban Blue (Water) Spaces
- Urban Green (Biodiversity) Spaces
- Weather Observations and Forecasting

Programme Objectives:

Initiate learning opportunity on sustainable cities and urban landscape through participatory approach

Ideate and design innovative solutions on sustainable solutions through collaborative participation of various stakeholders

Create opportunity within organisations to use Digital Tools and Technology to monitor nature and weather elements


Workshop Outcomes:

The specific outcomes of the programme were:

- Gain understanding of participatory approach to learning and willing to include field based learning (non – classroom setting based learning) to educate and empower the students
- Have a better understanding of adopting science for communicating and working for community needs
- Capacity Building of Teacher in a non-training format will equip them with skills on using the methodologies better in their classrooms with their students
- Demonstration, Practice and Reflection opportunities will help teachers to observe space for making and doing.
- Form part of a network of science educators who have the expertise of taking up citizen science as part of curriculum to help make learning innovative and encouraging.
- Help students initiate sustainable actions within school campuses

WORKSHOP SESSIONS

The following sessions were conducted to help achieve the above Learning Objectives

Session Name	About the Session
<p>Welcome & Introduction – through interactive group activity and presentation</p> 	<ul style="list-style-type: none">• To introduce everyone present in the workshop and to introduce participants about – Experiential Learning, Citizen Science and the Learning Model of Earthwatch Institute India• The Participants were asked to introduce themselves by using art based activity where they had to describe their name, grade, one interest area and one memory they have

Cities our Living Space



of their City (using picture to describe)

- To initiate a discussion with participants on – how were cities formed and what is a definition of a City
- To help participants understand the importance of natural resources – like water and biodiversity in a City sphere.
- To connect participants with these natural elements – an example of human footprint on water was taken as an example
- Through an interactive exercise – participants got an understanding on human footprints on Water – by doing a group exercise of Food cards.

Going Deeper – Becoming a Citizen Scientists



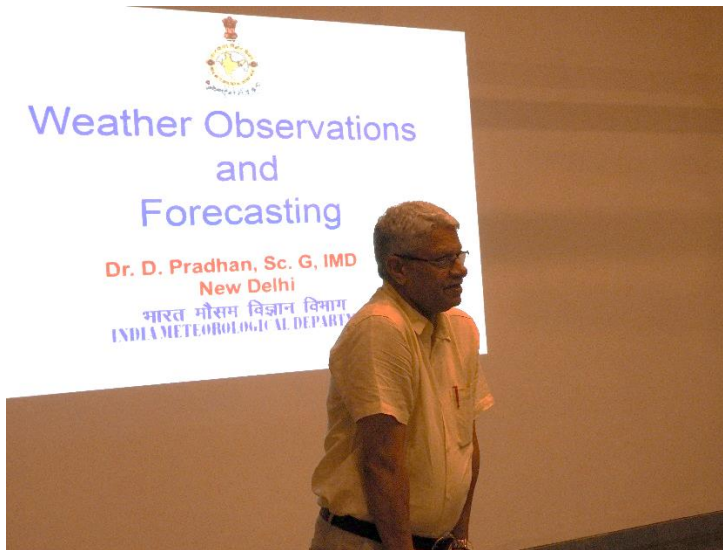
This session was taken up to help students understand about the opportunities we have in taking up science within our School Campuses by taking up simple activities on learning about biodiversity and water.

- The Students were divided into two groups to understand two topics – Blue Spaces and Green Spaces better.
- The 1 hour session was planned by giving students an opportunity to do hands on learning.
- Both the groups were rotated after 30 min to get an opportunity to understand both aspects
- It was encouraging to see students questioning and linking these two aspects with how cities are getting warmer because of increasing built up areas

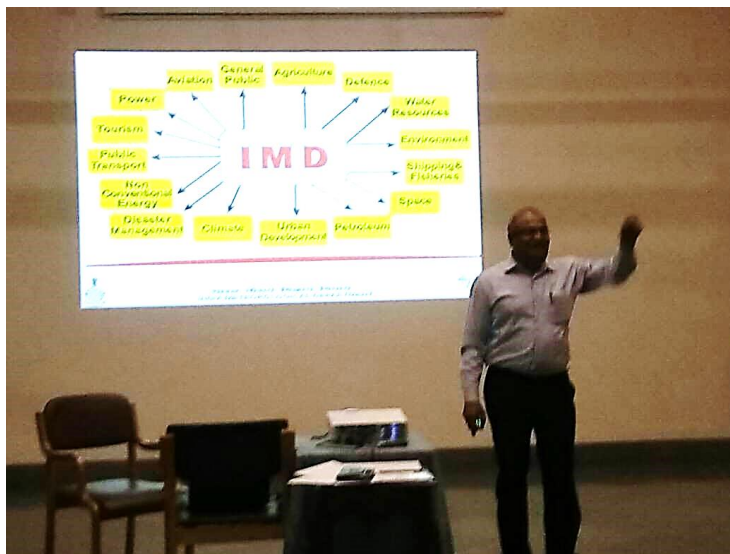


and less of blue and green spaces

Weather and Forecasting



Professor Tyagi – Introducing Programme ‘Eco Weather Watch’



Dr. D. Pradhan introducing the fields where IMD data is used

With the support of IMD and IMS – the session on Weather Observations and Forecasting was very well received.

Dr. Tyagi and Dr. Pradhan help share with the participants the importance on how over the years weather forecasting has improved and how citizen science is an expanding field and schools can be a part of it.

Dr. Pradhan shared the vision of IMD and how it help supports data for various organisations and institutions.

He shared that it is an expanding field and it has immense scope for schools to join.

Students and Teachers asked their questions on how the country uses this data for disaster preparedness and what the future scopes in this field are.

Pledge for Mother Earth 'Prithvi Sankalp'



The Participants pledged towards protecting and taking care of Mother Earth and its resources.

Students shared actions which they will take up once going back to schools on how they will build on actions to make their school campuses green

PARTICIPANT DETAILS

The following participants attended the programme:

Programme Eco Weather Watch		
22-Apr-17		
Venue: Sanskriti Kendra		
S.No.	School Name	Student/ Teacher Name
1	Apeejay School	Shashwat Shivam
2		Siddharth Rajput
3		Ms. Sarita Chawla
4	Billabong School	Muskaan Makhija
5		Disha Sharma
6		Ms. Anu Wadhwa
7	Creativity Adda - Old Delhi	Shubham
8		Dev
9		Mr. Deepak Pal
10	St. Mary's School	Devanshi Sharma
11		Smriti Goel
12		Reem Khan, Student
13		Ms. Madhubani Sen
14	Teach for India	Divyanshi
15		Anurag
16		Ms. Prapti Bhasin
17	Tagore International School	Shubh Kapoor
18		Pranav Mishra
19		Ms. Nishtha

20	Delhi Public School	Sonal
21	RSS International School	Manjeet
22	Hermann Gmeiner School	Nirali
23	Udayan Care	Ms. Usha Rani
24	SOS Children's Village	Ms. Revathi

PARTICIPANT FEEDBACK (QUALITATIVE ASSESSMENT)

(Which highlight the impact of the programme – linking it with the Programme Objective)

Initiate learning opportunity on sustainable cities and urban landscape through participatory approach

Liked the testing Methods for water quality monitoring and bio-diversity register

Carbon Sequestration and IMD session was full of learning

I learnt about how important the available resources are and how we need to use it consciously

How each step we take has an effect on our natural resources

Ideate and design innovative solutions on sustainable solutions through collaborative participation of various stakeholders

Learning through creativity and group work about embedded water

I liked how new designs of forecasting are used and immense opportunities it has for all citizens

I like the place and meeting with others

Being a Citizen Scientists in the open field

Ways of learning about Water and carbon footprint

Create opportunity within organisations to use Digital Tools and Technology to monitor nature and weather elements

Using digital tools on species and how we can monitor them

I liked the way Earthwatch gave us ideas on which are all the environment friendly activities we can conduct in our school. Now we have loads of work to do when we get back

The Idea of weather forecasting app, water quality checking instruments and finding out the volume of trees for carbon stock study

THINGS ACHIEVED FROM THIS WORKSHOP

Through this workshop some things which we have helped achieved are:

1. **Identification & creation of cohort of passionate Students and Teachers:** Earthwatch Institute India through this initiative has got an opportunity to work with teachers/ Educators and students from across different schools, who had varied range of experience and had different skill sets
2. **Helped in creating a Connective Learning Platform:** Through this workshop teachers and students got an opportunity to work with each other through a medium of connective learning – sing group exercise.
3. **Helped in hands on working on Experiential Learning and Citizen Science:** Teachers got an opportunity to understand and use ideas of experiential learning and citizen science – which can be a tool for outdoor learning
4. **Made participants aware of usage of Digital tools in conservation and environment education:** Using Mobile applications how we can participate in scientific learning within school campuses.
5. **Beginning of a Journey to help enable young students take actions on Sustainable Goals within Schools:** With this cohort of passionate educators and students a journey has begun – which will help develop partnership programmes between schools, between students and communities and between scientific and skill development organisations like Earthwatch Institute India and them to help build future leaders in our country who are passionate to work with communities on environment.

WAY FORWARD

Earthwatch Institute India will be working with these schools along with IMS and IMD to help initiate actions in their schools under 4 themes:

<p>Actions for Citizen Science within school campuses Schools to help initiate a Biodiversity Register within their campuses – to map species (trees, pollinators and birds) which can be found on the school campuses. This will help build a legacy for the school and will help build capacity to take up a citizen science project within school</p> <p>Action : Schools: To identify the grades which will be involved Form a register and monitor the species for one hour – once a month To identify more opportunities for students to get engaged through this research after 6 month</p>	<p>Initiatives to work with IMS and IMD Schools to identify areas of opportunity to work with IMS and IMD and introduce this new field in their school campuses.</p> <p>Action Schools: To identify clear learning goals for this programme and help link it with student learning</p> <p>EWI: To help share knowledge ideas between IMS and IMD</p>
<p>Linking Experiential Learning within Curriculum The participating teachers will undertake a scoping exercise – by looking at opportunities for</p>	<p>Using Digital Tools – like Mobile Applications and ICT to help link conservation with education</p>

experiential learning within their individual classrooms.

Action:

Schools: Teacher groups to be formed who will work together and come up with linking experiential learning opportunities between science

EWI will help add opportunities for using Mobile Tools and Social Apps within the school projects to help build the existing knowledge with scientific backing and community projects and case studies.

At the same time all participating schools will share the information on the Apps with their students to help develop information base.

Action:

EWI: Will assist all institutions in this endeavor. The links of the Apps will be shared with all participants



Programme Eco Weather Watch

With support from Indian Metrological Society and with knowledge mentorship of Department of Science & Technology and Indian Metrological Department

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