



## Learning Expedition Overview

Expedition Title: <b>The Green School Expedition: Thinking systemically and living Sustainably.</b>	Discipline and Specific Topic: Science ( Natural Resources, Effective Waste Disposal), Social Sciences ( Optimum use and Conservation of Natural Resources), Mathematics ( Data Handling) , Systems Thinking ( Habits of systems Thinking)
Grade level: 7	Timeframe: 16 weeks
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### Learning Expedition Summary

The Green School Expedition is an attempt to understand how effectively we use and manage our Natural Resources like water, land, air, energy and waste. It will help us to be aware of our current lifestyles and practices and also what we can do to better the use and management of the natural resources in our surroundings, i.e both at home and in school. In this learning expedition, we will be working in close collaboration with Centre For Science and Environment (CSE) and the final audit report of the expedition will be submitted to CSE as a part of their initiative on The Green Schools Programme 'How Green is my School '.The students will also present the final report to the school management along with recommendations based on their audit for better utilization and management of resources in school.

### Big Ideas

**If I can experience and understand the cause and effect of a complex problem in my local context by using data, I will be able to comprehend it better at the global level.**

### Guiding Questions

1. What all data do I require to understand how natural resources are being used and managed in my school?
2. What can I do to bring awareness and make changes for the effective use and management of resources in my school?

### Case Study/Studies

1. Case Study Title	Big Ideas/ Broader Concepts
<b>Bhaonta – Kolyala village case study</b>	<ul style="list-style-type: none"><li>• How a village once reeling under drought has become prosperous today.</li></ul>

	<ul style="list-style-type: none"> <li>How the combined efforts made by the community contributed to effective use of natural resources.</li> </ul>
<p><b>Specific topic students will study</b></p> <ul style="list-style-type: none"> <li>How water scarcity and the effects of drought was overcome with the help of water shed technology</li> <li>The methods of rain water harvesting adopted by the villagers to conserve rain water.</li> <li>How land is used effectively and soil conservation is done in the village to regenerate the vegetative power.</li> </ul>	<p><b>Key Curriculum objectives/ standards that drive the case study:</b></p> <ul style="list-style-type: none"> <li>Water is an important natural resource.</li> <li>What are the effects of drought?</li> <li>What is underground water table?</li> <li>What are the different methods of Rainwater harvesting?</li> <li>Land and soil are important natural resources.</li> <li>Human beings have a huge responsibility towards the environment.</li> </ul>

<p><b>2. Case Study Title</b></p> <p>Ralegan Siddhi Village by watching a documentary movie ( <b>How Anna Hazare greened Ralegan</b>) on the case study of this village.</p>	<p><b>Big Ideas/ Broader Concepts</b></p> <ul style="list-style-type: none"> <li>How conservation and management of natural resources done in an integrated way can transform a village.</li> <li>How the shared responsibility of the villagers helped in overcoming the problems of drought and poverty.</li> </ul>
<p><b>Specific topic students will study</b></p> <ul style="list-style-type: none"> <li>The methods of Rain water harvesting done to recharge underground water.</li> <li>How natural resources are being managed and the whole village is treated as an integrated Eco system.</li> </ul>	<p><b>Key Curriculum objectives/standards that drive the case study:</b></p> <ul style="list-style-type: none"> <li>Water is an important natural resource.</li> <li>What are the effects of drought?</li> <li>What is underground water table?</li> <li>What are the different methods of Rainwater harvesting?</li> <li>Land and soil are important natural resources.</li> <li>Human beings have a huge responsibility towards the environment.</li> </ul>

**Learning Targets to be addressed in the Expedition**

Science and Technology	<ul style="list-style-type: none"> <li>I can explain that it is easier to conserve our resources than regenerating them.</li> </ul>
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	<ul style="list-style-type: none"> <li>I can list and explain the methods to effectively use our natural resources.</li> </ul>
Social Sciences	<ul style="list-style-type: none"> <li>I can explain using case studies and relevant examples that the combined responsibility and efforts of a community can transform a village/town.</li> </ul>
Language	<ul style="list-style-type: none"> <li>I can write a report by collecting and presenting authentic data.</li> </ul>
Math	<ul style="list-style-type: none"> <li>I can collect, analyze and represent data.</li> <li>I can do mathematical calculations using large numbers.</li> </ul>
Craftsmanship	<ul style="list-style-type: none"> <li>I can design the layout and an appropriate cover page for a report.</li> </ul>
Character	<ul style="list-style-type: none"> <li>I can be an active participant and take initiative in my team.</li> <li>I can observe the work of others and learn from it.</li> <li>I can be a good member of my crew appreciating the strengths and uniqueness of each of my crew members.</li> <li>I can plan well and keep all resources ready before I start a task.</li> </ul>
Skills focused	<ul style="list-style-type: none"> <li>Observation and Recording</li> <li>Estimation and Measurement</li> <li>Designing and Asking Questioning</li> </ul>

Projects		
Project title	Project summary	Final product/ performance and audience
<b>Project 1</b>  <b>How green is my neighborhood?</b>	Students will form audit teams comprising both their parents, siblings and people from the neighborhood and do a <b>water audit</b> of their neighborhood by collecting data of water consumption, water sourcing, quality of drinking water, sanitation and hygiene, rain water harvesting, water recycling and reuse. They will use this data to calculate the points for their neighbourhood and present it in the form of a report which will tell how effectively water is being used in their neighbourhood.	The students will compile their reports in the given format. They will discuss their compiled report in their small class groups. Each student will create a leaflet on his/her report which will be critiqued by the group members. Copies of final draft of the leaflet will be distributed in their neighbourhoods.  Students who could not complete the audit will rework on it and do it during the Dusshera Break.

<p><b>Project 2</b></p> <p><b>How Green is my School?</b></p>	<p>Students will form audit teams to collect data to do the audits of Water, Land, Air, Energy and Waste. Students of each section OF Grade 7 will take up one of the audits.</p> <p>1) <b>Water audit (Grade 7 D)</b>  a) How much water does my school consume?  b) How much water does the school conserve, harvest and recycle?  c) Are the sanitation facilities adequate?</p> <p>2) <b>Air audit (Grade 7 C)</b>  a) What is the level of air pollution in the school area? b) How eco friendly are the school buses and the vehicles coming to my school?  c) Are the rooms in my school well-ventillated?  d)What is the RSPM levele in the area?</p> <p>3) <b>Land audit (Grade 7 A)</b>  What is the percentage of green area in my school?  b) How much bio diversity is present in my school?  c) What type of pesticides does my school use?</p> <p>4)<b>Energy audit (Grade 7 B &amp; E)</b>  How much energy does my school use?  b) How much energy does my school save?  c) How clean are the sources of energy in my school?  d) What are the energy conservation practices adopted by my school?</p> <p>5) <b>Waste audit (Grade 7 F)</b>  How much waste does the school generate?  b) How much waste does the school recycle?  c) What is the waste collection/disposal system?</p>	<p>A report on 'How Green is my School' which will be presented to the school management. A list of recommendations based on the audit for better use and management of resources.</p> <p>It will also be presented to CSE for Green Certification of the school.</p>
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<b>Connections to the Community and the Larger World</b>	
<p>Fieldwork</p>	<p>The fieldwork for this learning expedition will include site visits in the neighborhood and within the school premises to collect data.</p> <p><b>Proposed visits outside school:</b></p> <ul style="list-style-type: none"> <li>• Water Audit: A visit to CSE to see the rainwater harvesting structure or Rainwater harvesting structure in JNU</li> <li>• Waste Audit: A visit to the paper recycling plant in school, A visit to a nearby hospital to see their waste disposal methods. or A power plant in Bhiwani (Haryana) which runs on mustard seed waste the residue you have after the oil is squeezed out)</li> <li>• Energy Audit: RETREAT -TERI's Gual Pahari campus, about 30 km south of Delhi, in the state of Haryana.</li> </ul>

	<p>or</p> <p>A power plant in Bhiwani (Haryana) which runs on mustard seed waste (the residue you have after the oil is squeezed out)</p> <ul style="list-style-type: none"> <li>• Land Audit: RETREAT -TERI's Gual Pahari campus, about 30 km south of Delhi, in the state of Haryana</li> <li>• Air Audit: Pollution Control Board, New Delhi</li> </ul>
Experts	Mr Ashish Shah of Centre For Science and Environment
Service learning	<ul style="list-style-type: none"> <li>• Creating awareness in and around the school about the use and management of resources through posters and an awareness campaign.</li> <li>• Giving recommendations to the school management for improving the use and management of resources.</li> <li>• Following up with the management to see if recommendations are implemented.</li> </ul>
Expedition kick-off	<ul style="list-style-type: none"> <li>• <b>Hook:</b> The Hook started when the students thought of and listed any 5 important things that they wanted to do. This list was collated for the whole class and they looked at the big picture to see that most of the thoughts involve things close to them. They realized that it is difficult to think of doing things for the future specially at the global level. Students then watched a documentary movie and read the case study of Bhaonta Kolyala village followed by watching the documentary movie on Ralegan Siddhi village. These movies highlighted to them the fact that transformation of these villages could take place only because of the sincere efforts of the villagers. Playing the game 'Cookie Concerns' revealed to them that natural resources are not fairly distributed in the world and caring for the beetel leaf for a full day proved to them that it is indeed a big responsibility to take care of our natural resources.</li> <li>• <b>Hunt:</b> Students were taken through a Gallery walk containing posters, articles and reports ( for building background knowledge) to see how resources are fast depleting.( The ppt on water by Dr Kalam was a part of this), They predicted what will be the situation of water in Gurgaon 50 years from now by drawing graphs with the help of available data. Then each crew planted a sapling in the school premises.</li> <li>• <b>Launch of the Expedition:</b> During the whole school assembly sharing the importance of going green, sharing a brief outline and the end product of the audits, Principal of school launching the expedition by planting a sampling.</li> </ul>
Expedition culmination	<ul style="list-style-type: none"> <li>• Presenting the report and giving recommendations/suggestions (for more effective use of resources) to the school management to make the school greener.</li> <li>• An awareness campaign in and around the school.</li> </ul>