

# **Google** Earth Education

#### Water Conservation TIME **OVERVIEW**: The google earth creation on the Sasthamcotta lake in Kerala and Wular lake in Kashmir will be introduced to the students and will be explained that how due to anthropological demand and activities these lakes are at the verge of extinction. They will be also shown a map on my maps tool where few states in India with major water scarcity will be marked and described how the underground water is been depleted. From these tools students will be getting an overview on over usage of water. Students will be preparing projects on google earth and in my maps tool. SUBJECT/TOPIC : Environmental Education AGE LEVEL: 16 to 18 years Learning Objectives : [Content specific learning objectives **Inquiry** [The essential question that will guide the lesson.] addressed in this lesson plan.] 1. Describe the distribution of water resources on earth. Students will be able to -What is the ratio of potable water? 2. How much water does your family require per day? Collect information of various aspects of • 3. As per you what are the causes of water degradation in environment and its problems and acquire your area, state and country? attitudes and behaviours desirable for 4. Compare the causes with local vs global scenario. environmental improvement, safety 5. Suggest few doable control measures as local actions management, and sustainable development. through individual and community participation which Design a project to check the environmental • can bring global change. 6.Study causes of water over exploitation and pollution in your degradation and incorporate sustainable locality and suggest the corrective measures for it. Explain the development. measures required for water security in your locality. Discuss our dependence on the water resources and • used. Analyse the change of trends of consumption local • Vs global. Give brief description on sustainable goals to maintain the natural essence of the planet. realizes the meaning and the facts of drought conditions across our country and the State of Maharashtra Students realize water crisis situation and the meaning and impacts of overexploitation of ground water. Become conscious regarding the meaning of water conservation, rainwater harvesting, renovation of water bodies, reduce & reuse of water, watershed development, and intensive afforestation, drinking water and sanitation. Students realize the need of their role to actively • participate and contribute in their area for water conservation.

<ul> <li>Students collectively sense the water security and take up their responsibility for water conservation.</li> </ul>	
<b>Materials Needed</b> [List of all the materials and resources needed for the lesson.]	<b>Lesson Summary</b> [Brief description of each part of the lesson.]
<ul> <li>PPT, Google earth creations – 'conservation of water', my map, Time lapse</li> <li>PPT - Natural resources &amp; water security.</li> <li>PPT- Teri – Environment and sustainability concept</li> <li>Teri : Rain water harvesting and management Teri: SWASH 2020</li> <li>Google earth:</li> <li>https://earth.google.com/earth/rpc/cc/drive?state=%7B%22ids%22</li> <li>%3A%5B%221VILNFMHcQGSQM5rjR00Iv9-QODhJVWH-%22%5D%2C%22action%22%3A%22open%22%2C%22userId%22%3A%22108068699685067292884%22%7D&amp;usp=sharing</li> </ul>	Engage: Teacher begins her class with a success story about sustainability( Ahmadnagar, Sukhomajri). She then connects the story with the topic and explains the concepts, help students to identify problems, analyse them on the local context and provide possible solution to the problem which has to be sustainable. Teacher motivates students to read the lesson properly and research on it, as it is very important for their project making which is their short term goal, at the same time teacher emphasis on EVE as it is the only subject which can give them a better perception on their career option, she also guides them to read important journals and articles published on the topic.
Google form: https://forms.gle/U3uhooZ3bo6YZgVL8	<ul> <li>Explore: Teacher shows the ppt, and takes them to google earth creations and my map tools, she guides them how to create their own projects on google earth and my maps.</li> <li>Explain: Students participate in the discussion on local challenges regarding water supply and usage. Community awareness and how to increase awareness and individual responsibility towards water conservation.</li> <li>Revise: Google form , text book, SDGs sites</li> <li>Apply: Students will prepare projects on the topics.</li> </ul>
Sustainable Development Goals [One or more Sustainable Development Goals addressed in this lesson.] SDGs - 1 & 6	Culminating Task/Assessment [One sentence describing how student mastery of learning objectives will be assessed.]         Prepare projects on :         • Conduct water audit in your college premises or housing complex. Use google earth to show your location)         • Research on ancient water conservation practices in India.(use google earth to show the places)         • Research on modern water conservation practices, rainwater harvesting. National &

international places with successful water conservation practices.(use google earth)

• Men or women who is more aware of water activities on day to day life.

**Textbook Chapter** [How is this lesson plan related to the student's textbook? Which chapter and which lesson is covered here?] **Environmental Education, Std – XI & XII , (Maharashtra Higher Secondary Board of Education)** 

Engage (5 minutes)

Although 71% of the earth is covered with water, acute shortage of water is reported all over the world. India receives nearly 4% of global precipitation, still it suffers from water scarcity. Water is vital requirement of life. By 2025 more than 50 countries including India will face water scarcity problem. Why?

Explore (25 minutes)

\_Students will take a virtual trip of voyager-'Google earth engine – case studies – Global Surface water', 'Blue gold – our lakes our lives', 'Rivers of India' 'Ice & Snow from the space', 'Swamps & wet lands'.

## Explain (20 minutes)

Hypothesis: (Farming affected the water quality) (Navi Mumbai is under threat of flood due to urbanization) (There are new pattern of diseases and pest attacks with changes in the rainfall patterns) (Females rank scarcity of drinking water as a more serious environmental concern than males do) (The amount of drinking water supplied to a town/city, has increased at a slower rate than its population ) (The greater the population of a village/town/city greater the distance to its drinking water sources.)

The survey will be conducted by several groups.

Students share first "hypothesis" with small group or a partner. The results will be discussed.

Teachers facilitate whole group discussion in which students share their hypotheses and evidence. The result will be analysed .

Students test hypotheses and record findings (for science/math based inquiries). Based on the collected data,

### Revise (10 minutes)

1. Students will make adjustments to their hypothesis based on information gained in discussion or test findings. Based on the result the hypothesis will be justified. (approved or disproved)

#### Next, repeat the process with a second source of information.

**Explore (25 minutes)** 

#### Continued:-

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Students test hypotheses and record findings (for science/math based inquiries). Based on the collected data,

## Explain (20 minutes)

Now, Students will work on the hypothesis and project topics

Students will create a project on google earth locating the area they are covering during their research work, it may be local or global.

Revise (10 minutes)

1. Students will make adjustments to their hypothesis based on information gained in discussion or test findings.

#### (Option to repeat this process with additional sources of information, each time resulting in an updated hypothesis.)

### Apply (80 minutes)

All the groups will present their work in a seminar.

## **Evaluate: Exemplar Response and/or Rubric**

• Tools for assessing mastery of learning objectives to be used by teachers or students for self or peer assessment.

### **Additional Resources**

• Links to texts or websites that relate to the topic and/or lesson.

## **Options for Differentiation**

• Possible modifications, adaptations or extension activities specific to this lesson.

### Credits

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