MANAGEMENT OF NATURAL RESOURCES	TIME [45 MIN.]

OVERVIEW Google earth tools like Google voyager and Google Earth Engine tool will be used in teaching the chapter 15 Management of natural resources, giving students the understanding about sustainable management and rising need to save environment**.**

SUBJECT/TOPIC **Science/Lesson- 15 Management of natural resources**	**AGE LEVEL 15+**
Learning Objectives Students will be able to: 1. Understand that our resources like wild life, water, coal, petroleum need to be used in a sustainable manner. 2. Know that management of forest resources has to take into account the interests of various stakeholders. 3. Analyze and comprehend that harnessing of water resources by building dams has social, economic and environmental implications. 4. Appreciate that local people should control their local resources and their use. 5. Understand that the judicious use of resources is necessary for benefits of all generations to come safe.	**Inquiry** 1. Analytical skills (scrutinizing an observation) 2. Environmental skill (investigating and applying the knowledge to protect environment) 3. Critical thinking (Competitive evaluation of given information) 4. The ability to understand concepts (Inspecting and analyzing reasons for variation in established principles) 5. Teamwork and communication skills (working effectively with others) 6. Application Skill (Applying the knowledge gained in their daily life.
Sustainable Development Goals 12 SUSTAINABLE CONSUMPTION AND PRODUCTION 13 CLIMATE ACTION 14 LIFE BELOW WATER 15 LIFE ON LAND	**Culminating Task/Assessment** **Students knowledge will be assessed through Q/A and MCQ'S.**

Textbook   Science Class 10 Chapter 15. Management of natural resources

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Engage (5 minutes)

1. Activate prior knowledge and prepare students for new concepts,   skills or processes.
2. Introduce the essential question that will guide the inquiry investigation.

Explore (25 minutes)

1. Teachers introduce the first source of information using an Earth story or *Voyager Story*.
2. Students record observations or evidence as it relates to the inquiry.
3. Students identify relationships or patterns and form a hypothesis based on information gained.

Explain (20 minutes)

1. Teachers organize students into small groups or partners.
2. Students share first "hypothesis" with small group or a partner.
3. Teachers facilitate whole group discussion in which students share their hypotheses and evidence.
4. Students test hypotheses and record findings (for science/math based inquiries).

Revise (10 minutes)

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

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

Explore (25 minutes)

1. Teachers introduce the second source of information.
2. Students record observations or evidence as it relates to the inquiry.
3. Students identify relationships or patterns and form a hypothesis based on information gained.

Explain (20 minutes)

1. Teachers organize students into small groups or partners.
2. Students share first "hypothesis" with small group or a partner.
3. Teachers facilitate whole group discussion in which students share their hypotheses and evidence.

4. Students test hypotheses and record findings (for science/math based inquiries).

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)

1. Students reflect on outcomes and communicate findings.
2. Students use findings to draw conclusions and generate a solution to a problem.

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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Google Earth Engine link
Natural resources in India

https://earth.google.com/earth/rpc/cc/drive?state=%7B%22ids%22%3A%5B%2214FJ3mDwZU_0Tq_AU
bSMay8WPMdzA_nmy%22%5D%2C%22action%22%3A%22open%22%2C%22userId%22%3A%22103220
650329352109595%22%7D&usp=sharing