

# Teacher's Lesson Plan: Geology and Natural Resources

**Grade Level:** High School

**Subject Area:** Earth Science, Environmental Studies

**Duration:** 2-3 class periods

**Focus SDG:** Sustainable Development Goal 12: Responsible Consumption and Production

**NASA Resource:** Earth Observation Data on Natural Resources

## Lesson Objectives:

- Understand the basic concepts of geology and its significance in natural resource management.
- Identify the different types of natural resources and their classifications (renewable vs. non-renewable).
- Discuss the impact of overconsumption and excessive exploitation on natural resources.
- Examine sustainable solutions to reduce resource depletion and promote environmental conservation.
- Analyze NASA data related to natural resource availability and sustainability.
- Propose actions to promote sustainable resource management in local and global contexts.

## Materials Needed:

- ★ NASA Earth observation resources on natural resources (NASA's Global Climate Change website)
- ★ Computers or tablets with internet access
- ★ Projector or smartboard
- ★ Quiz worksheets
- ★ Chart paper and markers
- ★ Videos/animations on geology and natural resources (optional)

## Lesson Breakdown:

- 1) Introduction to Geology and Natural Resources (20-30 minutes)

- a) Discussion Starter: Show a series of images representing different geological formations and natural resources.
- b) Definitions & Importance: Define geology and natural resources.
- c) Quick Pair Activity: Discuss how natural resources are used in daily life.
- 2) Types of Natural Resources (30 minutes)
  - a) Group Work: Research and classify natural resources as renewable and non-renewable.
  - b) Class Share: Present findings and discuss examples of each type of resource.
- 3) Impact of Overconsumption and Excessive Exploitation (40 minutes)
  - a) NASA Data Exploration: Observe trends in resource use and depletion.
  - b) Class Discussion: Discuss the consequences of overconsumption on ecosystems and human societies.
  - c) Short Video or Animation: Watch a video on the effects of excessive exploitation of resources.
- 4) Action Plan for SDG 12 (30 minutes)
  - a) Individual Reflection: Write down actions to reduce personal resource consumption.
  - b) Group Discussion: Share ideas and create a class action plan to promote responsible resource use in the community.

## **Assessment:**

Participation in discussions and activities.

Completion of the quiz.

Submission of individual and group action plans.

## **Extensions:**

Invite a local geologist or environmental scientist to speak about sustainable resource management.

Plan a field trip to a nearby geological site or conservation area.