

ITL PUBLIC SCHOOL

Active Engagement of Young Minds during Summer Vacations 2026-27

Class: XI

Subject: Geography

Theme: "Smarter Solutions for a Greener Planet."

Problem Statement:

Loss of biodiversity due to deforestation, pollution, climate change, habitat destruction, and illegal poaching is threatening ecological balance and sustainability. Smart technology and AI can help monitor, protect, and conserve biodiversity for future generations.

Objective:

To help students understand the importance of biodiversity, recognize threats to ecosystems, and design innovative AI-based solutions for conserving plants, animals, and natural habitats using Computational Thinking.

1. Decomposition (Breaking the Problem into Smaller Parts)

Students divide biodiversity conservation into manageable sections:

Key Areas: Deforestation, Endangered species protection, Pollution in ecosystems Water body conservation, Habitat destruction, Climate change effects, Illegal wildlife trade, Human activities affecting biodiversity.

Example: If focusing on deforestation: Tree cutting, Loss of animal habitats, Soil erosion, Carbon imbalance

2. Pattern Recognition (Identifying Trends and Repeated Problems)

Students collect data and observe recurring environmental issues such as:

- Decline in bird or butterfly populations
- Frequent tree cutting
- Rising pollution in nearby water bodies
- Seasonal species disappearance
- Increase in plastic waste harming ecosystems
- Habitat fragmentation

3. Abstraction (Focusing on Essential Information)

Students focus on major causes and conservation factors:

Important Factors:

- Species population
- Habitat condition
- Pollution levels
- Resource usage
- Human intervention
- Conservation policies

Ignoring Less Relevant Details:

- Minor local variations
- Non-critical environmental changes

4. Algorithmic Thinking (Step-by-Step Solution)

Proposed Solution:

“AI-Powered Biodiversity Monitoring and Conservation System”

Steps:

1. Identify one biodiversity issue.
2. Collect local or online environmental data.
3. Use AI tools/apps for monitoring.
4. Analyze threats and vulnerable species.
5. Develop conservation strategies:
 - Reforestation drives
 - Wildlife monitoring
 - Pollution control
 - Awareness campaigns
 - Smart protected zones
6. Track progress regularly.
7. Share findings with community or school

Students will Submit their findings in Power Point Presentation.

Map Activity- Cartographer Delight (Make your own Atlas)

Book- Fundamentals of Physical Geography

(Map items for locating and labelling only on the outline political world map)

Chapter 4 Distribution of oceans and continents

On the Political Map of the World locate all the Continents of the world.

- Major Oceans of the world: Indian Ocean, Pacific Ocean, Atlantic Ocean, Arctic Ocean, Southern Ocean
- Major lithospheric plates and Minor lithospheric plates, Ring of fire (Pacific Ocean), Mid-Atlantic Ridge.

Chapter 9

Atmospheric Circulations and Weather Systems

Major Hot Deserts of the world:

- Mojave Desert- Nevada, US
- Patagonian Desert- Argentina
- Sahara- Africa
- Gobi Desert- Mongolia, Asia
- Thar desert- India
- Great Victoria Desert- Australia

Chapter 12

Water (Oceans)

Major Seas

Black Sea, Baltic Sea, Caspian Sea, Mediterranean Sea, North Sea, Red Sea
Bay of Fundy (Canada)-Famous for the highest tides in the world

Chapter 13 Movements of Ocean Water

Cold Current	Warm Current
Humboldt Current	Alaska Current
California Current	Brazilian Current
Falk Current	Agulhas Current
Canaries current	Kuroshio Current
West Australian Current	Gulf Stream Current
Oyashio Current	
Labrador Current	

Chapter 14 Biodiversity and Conservation

- Eastern Himalaya, India,
 - Western ghats, India
 - Indonesia, Asia
 - Eastern Madagascar, Africa
 - Upper Guinean forests, Africa
 - Atlantic forest, Brazil

Map Work

Book- India Physical Environment

(Map items for locating and labelling only on the outline political map of India)

Chapter 1 India- Location

- Latitudinal extent of India
- Longitudinal extent of India
- Standard Meridian of India
- Important latitude passing through India (Tropic of Cancer)
- Southern Most Point of mainland of India (Kanya Kumari)

Chapter 2 Structure and Physiography

- **Mountains:** Karakoram Range, Garo- Khasi- Jaintia hills, Aravalli Range, Vindhyan Range, Satpura Range, Western ghats & Eastern ghats
- **Peaks:** K2, Kanchenjunga, Nandadevi, Nanga Parvat, Namcha Barwa and Anaimudi
- **Passes:** Shipkila, Nathula, Palghat, Bhor ghat and Thal ghat
- **Plateaus:** Malwa, Chhotnagpur, Meghalaya and Deccan Plateau. Coastal Plains: Saurashtra, Konkan, North and South Kanara, Malabar, Coromandel and Northern Circars
- **Islands:** Andaman & Nicobar Islands and Lakshadweep Islands

Chapter- 3 Drainage System

- Rivers: Brahmaputra, Indus, Satluj, Ganga, Yamuna, Chambal, Damodar, Mahanadi, Krishna, Kaveri, Godavari, Narmada, Tapti and Luni
- Lakes: (Identification) Wular, Sambhar, Chilika, Kolleru, Pulicat & Vembanad
- Straits, Bays, Gulfs: Palk Strait, Rann of Kachch, Gulf of Kachch, Gulf of Mannar & Gulf of Khambat