Chapter 11: Life on Earth

Questions — Let's Explore

Q1 Why does India have diverse biomes? How does the local geography connect to the diversity?

India has diverse biomes because it spans a wide range of latitudes, altitudes, and climatic zones. The country's geography includes the icy Himalayan ranges, the hot Thar Desert, humid tropical rainforests in the Andaman & Nicobar Islands and the North-East, coastal and marine ecosystems, and the Deccan plateau. This variation in temperature, precipitation, and landforms creates distinct conditions that support different plant and animal communities. The Western Ghats and the North-East are global biodiversity hotspots with species found nowhere else. Thus, India's varied physiography — mountains, plains, deserts, coasts, and islands — directly produces its rich diversity of biomes.

Q2 Make a list of economically valuable native plants in your region and comment on their abundance.

Model answer (adapt for your own region): In the Deccan Plateau and central Indian region, economically valuable native plants include neem (used in medicine and pesticides), teak (timber), bamboo (construction and handicrafts), mahua (flowers used for food and alcohol by tribal communities), and tendu (leaves used to make beedis). Medicinal herbs such as ashwagandha and tulsi are also widely found. While neem and bamboo remain relatively abundant, teak forests have shrunk due to commercial logging, and mahua groves are under pressure from agricultural expansion. Sustainable harvesting and community forest management, as seen in Mendha Lekha, are essential to preserve their abundance.

Q3 Prepare a map of your state or Union Territory showing national parks and sanctuaries.

Guidance: Obtain an outline map of your state or Union Territory. Using your textbook, atlas, or the School Bhuvan–NCERT Geoportal, locate all national parks, wildlife sanctuaries, and biosphere reserves within it. Mark each with a distinct symbol or colour, add a legend, and label the names clearly. Note the biome or ecosystem type each protected area represents — forest, grassland, wetland, or coastal. A brief caption explaining the significance of one or two key sites will strengthen your map.

Q4 Study the impact of forest fires on people dependent on forests. Try to include the causes, losses, and preventive measures.

Forest fires cause severe hardship to people who depend on forests for their livelihoods. They destroy non-timber forest products such as honey, bamboo, medicinal plants, and fruits — the primary sources of income for tribal and forest-dwelling communities. Homes and crops are also lost, deepening economic insecurity. According to the Forest Survey of India, about 36 per cent of India's forest cover is prone to fires, with nearly 4 per cent extremely prone. Causes include climate change, dry spells, and human-induced factors like land clearing and negligence. Preventive measures include community fire watch teams, firebreaks, awareness campaigns, and human care — the chapter notes that 'human care and preventive measures can help prevent many forest fires'.

Q5 Why are forests often called the 'lungs of the Earth'?

Forests are called the 'lungs of the Earth' because they absorb carbon dioxide and release oxygen through photosynthesis, maintaining the oxygen levels essential for all life. Tropical rainforests, in particular, are the world's richest stores of biodiversity and are dense enough to significantly influence the Earth's climate. Just as lungs purify blood and supply oxygen to the body, forests purify the atmosphere and supply oxygen to the planet. They also regulate the water cycle, prevent soil erosion, and store carbon, all of which help maintain the Earth's ecological balance.

Q6 If large forest areas continue to be destroyed, what do you think would be its long-term effect on the global climate?

Large-scale destruction of forests would have serious long-term effects on the global climate. Forests absorb carbon dioxide and help balance the Earth's climate; losing them would increase greenhouse gas concentrations, accelerating global warming. The water cycle would be disrupted, causing irregular rainfall, more droughts, and more floods. Biodiversity hotspots — such as the Himalaya, the Western Ghats, and the Amazon — would lose unique species permanently, weakening ecosystems. Aquatic biomes would also be affected as river flows diminish without forest cover. Overall, continued deforestation would amplify climate change, reduce the Earth's capacity to self-regulate, and threaten food security and livelihoods for millions of people.

Q7 Discuss some traditional forest conservation methods with your grandparents or an elderly person.

Guidance: Speak with an elderly person in your family or community and ask them about traditional practices used to protect forests and natural resources in their time. The chapter mentions several such traditions: the Gond and Bhil communities perform rituals to honour forest deities before collecting resources, reflecting deep respect for nature. Sacred groves (known as Devrai, Devarakadu, Kavu, Sarna, etc.) are small forest patches protected by communities for religious and cultural purposes — there are over 1,00,000 such groves in India. The Bishnoi Movement in Rajasthan and the Chipko Movement in Uttarakhand are examples of communities protecting trees. Record what you learn and share your findings with the class.

Q8 How do forest dwellers contribute to the protection and conservation of forests?

Forest dwellers contribute to forest conservation in several important ways. They possess traditional knowledge of plants, herbs, and forest resources passed down through generations, which directly supports biodiversity conservation. Communities like the Gond and Bhil perform rituals before collecting resources, ensuring sustainable use. Forest dwellers have led major conservation movements: the Bishnoi community in Rajasthan, led by Amrita Devi, stood against tree-felling, inspiring the Chipko Movement in Uttarakhand where village women hugged trees to prevent deforestation. The Mendha Lekha village in Maharashtra is a celebrated example of community forest management — the Gond tribe regulates tree-cutting, prevents forest fires, and promotes sustainable bamboo harvesting. They also participate in Joint Forest Management programmes.

Q9 What is a forest fire? Prepare a plan for prevention and mitigation of forest fires.

A forest fire is an uncontrolled fire that spreads rapidly through forests, destroying vegetation, wildlife, homes, and resources. According to the Forest Survey of India, about 36 per cent of India's forest cover is prone to forest fires, nearly 4 per cent extremely so. Causes include dry weather, climate change, and human factors like land clearing and negligence. Prevention plan: (1) Form community fire-watch teams in vulnerable forest areas. (2) Create firebreaks — cleared strips that stop fire from spreading. (3) Conduct awareness campaigns in forest villages on safe land use. (4) Restrict open burning near forests during dry seasons. Mitigation plan: (1) Train local forest dwellers in rapid-response fire fighting. (2) Ensure early warning systems and communication links in remote areas. (3) Use the School Bhuvan–NCERT Geoportal to monitor fire-prone zones. (4) Support rehabilitation of affected communities and replant destroyed areas.