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| **LESSON 1**  **Physical Geography of South Asia**  **ESSENTIAL QUESTION: *How does geography influence the way people live?*** | |
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| *South Asia is a land of contrasts, with snowcapped mountains towering over parched deserts. More than one-sixth of the world’s people live in this region.*  **South Asia’s Physical Features**  ***What physical features make South Asia unique?***  South Asia forms a subcontinent. A **subcontinent** is a geographically or politically unique part of a larger continent. Seven countries make up the region of South Asia. Of these, India is by far the largest. The other six countries are Pakistan, Nepal, Bhutan, Bangladesh, Maldives, and Sri Lanka.  **Northern Mountains and Plains**  Three mighty mountain ranges form South Asia’s northern border. They are the Hindu Kush, the Karakoram, and the Himalaya. The Himalaya range includes the highest mountain in the world: Mount Everest, at 29,028 feet (8,848 m). The mountain ranges form a physical barrier. Invaders and traders could enter South Asia through only a few openings, such as the Khyber Pass between Afghanistan and Pakistan. Plate tectonics created the ranges millions of years ago. Today, the mountains are still rising. Plate movements also cause earthquakes throughout South Asia.  Three major rivers begin as small streams from the mountain ranges. The rivers are the Indus, the Ganges, and the Brahmaputra. The Indus flows southward through Pakistan to the Arabian Sea. The Ganges and the Brahmaputra flow east and southeast to the Bay of Bengal. |  |

The three rivers cross a vast plains area, where their annual flooding has deposited rich soil for growing crops. One-tenth of the world’s people now live in the **alluvial plain** created by the Ganges River. This alluvial plain, or area of fertile soil deposited by floodwaters, is the world’s longest.

The Brahmaputra and the Ganges come together and form the largest**delta**on Earth. Deltas are places where rivers deposit soil at the mouth of a river. The Brahmaputra/Ganges delta has some of the world’s richest farmland.

Central and Southern Highlands

Mountains and rivers also dominate central and southern parts of South Asia. They physically and culturally separate India into northern and southern parts. Much of southern India is a high, flat area called the Deccan Plateau. Two low mountain ranges, the Western and Eastern Ghats, form the plateau’s edges. A narrow coastal plain lies between each mountain range and the seacoast. The soils of the plain are rich and fertile.

**Islands of South Asia**

Sri Lanka and Maldives are the two island countries of South Asia. Sri Lanka, shaped like a teardrop, lies off the southeastern tip of India. Maldives lies southwest of India’s tip and is made up of numerous islands. Many of the islands are small, ring-shaped islands called **atolls**.

***Describing*** Describe the main physical regions of South Asia.

**South Asia’s Climates**

***How does climate affect people’s lives in South Asia?***

Climate is closely related to the physical features of the region. Because the physical features of South Asia are so diverse, the region’s climate is diverse, too. About half of South Asia has a tropical climate, with different kinds of plant life. Much of the northern half of the region enjoys a warm temperate climate. You can also find cool highlands in the north and scorching deserts to the west.

**Monsoons**

Much of South Asia’s climate is a result of seasonal wind patterns called**monsoons**. Most of the region has little or no rainfall for eight months of the year. Then, beginning in May and early June, temperatures begin to rise sharply. Heated air causes a change in wind direction. Winds from the Indian Ocean carry moisture inland, bringing heavy rains and flooding. Most areas along the coast get at least 90 inches (229 cm) of rain per year. Millions of family farms depend on rain for survival.

The annual monsoon rains support South Asia’s large population. Without the rains, the region could not grow enough food for its people. The floods come at a cost, though—they damage property and can cause loss of life.

Other natural hazards include tropical **cyclones**. These large, swirling storms often slam into the coast along the Bay of Bengal. Their violent winds and heavy rains can cause devastation. The strong winds push water from the Bay of Bengal to the shore, flooding low-lying areas far inland. One cyclone can kill tens of thousands of people. The delta lands of the Brahmaputra and Ganges rivers are especially vulnerable to flooding.

**Tropical and Dry Areas**

Much of South Asia has a tropical wet/dry climate with just three seasons—hot, wet, and cool. The hot and cool seasons are dry. The three seasons are a result of the monsoon wind patterns.

Tropical wet climates are found along the western coast of India, southern Sri Lanka, and the Ganges Delta in Bangladesh. These areas get plenty of rain year-round and have thick, green vegetation.

Not all of South Asia gets drenched by seasonal monsoons. Some places are dry. Parts of the Deccan Plateau, for example, get little rain, because the Western Ghats block the winds and rains of the wet-season monsoons.

Northwestern South Asia has the region’s driest climate. The Thar Desert straddles the border between Pakistan and India. The area gets relatively little rain; **annual** rainfall is less than 20 inches (51 cm). The vegetation is mostly low, thorny trees and parched grasses.

**Highland and Temperate Climates**

The tops of the huge mountain ranges on South Asia’s northern border are covered year-round in snow. The mountains affect the climate of lower-lying areas. In winter, the Himalaya block the cold winds sweeping down from Central Asia. This forms a large temperate zone that stretches across Nepal, Bhutan, northern Bangladesh, and northeastern India. Farther south, the elevation of the Deccan Plateau combined with the wind-blocking effect of the Western and Eastern Ghats creates another temperate climate area.

***Analyzing*** What positive and negative effects do the monsoons have on the lives of people in South Asia?

**South Asia’s Natural Resources**

***Which natural resources are most important to South Asia’s large population?***

South Asia has many natural resources, but they are not evenly distributed. As South Asia’s largest country, India has the most productive land, as well as water and mineral resources.

**Water Resources**

South Asians depend on rivers for irrigation, drinking and household water, and transportation. Water in rivers is also considered sacred in Hinduism, the principal religion in India. Hindus revere the Ganges, named for the goddess Ganga.

Today, water is an important source of energy for South Asia. Mountains provide swift-flowing rivers that can be used to generate electricity. Several dams, such as the Narmada River project, are being built, but hundreds more are planned. The Indian government argues that the projects will provide water for drinking, irrigation, and electricity. Opponents point out that areas must be flooded to build dams. This will displace millions of people and destroy ecosystems. They favor smaller-scale projects and traditional ways to manage water needs.

**Mineral and Energy Resources**

India has most of South Asia’s mineral resources. These include iron ore, manganese, and chromite, all used in making steel. India also has large quantities of mica, a rock used to manufacture electrical equipment.

Nepal’s natural resources include mica and copper. To the south, Sri Lanka boasts some of the world’s finest gemstones, including sapphires and rubies. Sri Lanka also has large quantities of graphite. This is the “lead” that is used in pencils. Graphite is also used in batteries and as a lubricant.

South Asia has several important petroleum reserves. They are located in northern Pakistan and near the Ganges Delta. Exploration in the Arabian Sea has yielded some oil. One offshore oil field was discovered in the mid-1970s about 100 miles (161 km) west of the Mumbai (Bombay) coast. The field accounted for a large portion of India’s domestic oil production. Overall, though, South Asia depends on imported oil. Natural gas fields are found in southern Pakistan and in Bangladesh. India also has an important deposit of uranium north of the Eastern Ghats. The uranium is used in the country’s nuclear power plants.

**Forests and Wildlife**

Like rivers, forests have greatly influenced the history of South Asia. In colonial times, when the British ruled much of the subcontinent, forests were admired for their beauty but exploited for their commercial value. Important timber resources then included teak, sal, and sandalwood. The woods are still valuable today. There is much debate about how they should be used or whether they should be conserved.

Each kind of wood has qualities that make it valuable. Teak is a strong, attractive wood used to make high-quality furniture. Sal is a hardwood used for construction. Sandalwood, with its sweet scent, is often used to make decorative objects.

Forests are, however, more than resources for wood products. They take in carbon dioxide—a greenhouse gas—and release oxygen. Tree roots hold soil in place, reducing erosion. People live in the forests and depend on leaves and fruits for food. Forests also provide habitat for much of South Asia’s unique wildlife. Indian forests, for example, are home to three of Earth’s most endangered mammals: the tiger, the Asian elephant, and the one-horned rhinoceros. South Asians are working to reverse some of the region’s wildlife losses. The creation of wildlife reserves and laws controlling hunting and logging have started to make a difference.

***Analyzing*** Think about how people use rivers in South Asia. How is it similar to how rivers are used in other parts of the world?

**Lesson 1 Review**

**Reviewing Vocabulary**

1. Why is a *delta* often used as an agricultural area?

**Answering the Guiding Questions**

1. ***Analyzing*** Why was the Khyber Pass so important to South Asia for centuries?
2. ***Determining Central Ideas*** What might happen in South Asia if there were no monsoons?
3. ***Analyzing*** What might be the consequences of cutting down a forest in South Asia?

**5. *Informative/Explanatory Writing*** Take notes about the physical features of the countries of South Asia. Use your

notes to write about the features. Use descriptive terms to contrast the mountains, deserts, plains, and rivers of the region.