

Geography and the Early Settlement of India

How did geography affect early settlement in India?

Introduction

Extending through northern India, the Himalayas (himuh- LAY-uhz) are home to the world's tallest mountain, Mount Everest, and divide India from the rest of Asia. According to an ancient Indian story, a river god and a river goddess once lived in this snow-covered mountain range. One day, the two decided to race down the mountains to the plains below. The river goddess sped straight down, winning the race. But her joy soon turned to worry. Where was the river god?

The river god had slowed down to admire the snowcapped mountains and the rich brown earth in the valleys. Eventually, he flowed down to meet his goddess. The two rivers became one, joined forever on India's plains. The rivers made the land good for farming.

As you read this lesson, you will learn how India's rivers and other physical features influenced where ancient India's civilization arose. Early towns began to appear in India in about 2500 B.C.E. Over the next 2,000 years, a unique civilization developed in India.

How did India's geography influence its ancient civilizations? How did farmers use it to their advantage? Did it increase the dangers of traveling in the area?

You will find out by exploring the numerous physical features of the area, including its rivers, mountains, plains, plateaus, deserts, and valleys. You will also examine eight key features and their effects on the settlement of ancient India.



Boatmen glide along the Ganges River in northern India.

Vocabulary

Monsoon

Plateau

subcontinent

Interactive Student Notebook Introduction—see handout

Section 1. Brahmaputra River

The land of India is a **subcontinent** of Asia. Looking at a map of Asia, you can see that India is attached to this continent. Many geographers call this part of Asia the Indian subcontinent since mountain ranges separate much of India from the rest of the continent. The Indian subcontinent is a large, triangular landmass that juts out from the southern part of Asia.

Our exploration of India begins with the Brahmaputra (brah-muh-POO-truh) River. This river runs through the steep Himalayas, the mountains along the northern border of India, and continues to wind through snowcapped mountains and narrow canyons. The water is cold as it rushes over the sharp rocks.

The river becomes slower and deeper as it flows into its valley. Every summer, this part of the river receives added water from heavy monsoon rains. A **monsoon** is a strong wind that often brings huge amounts of rain. These rains can cause the river to overflow its banks. As the river recedes, the rich minerals that have been carried down from the Himalayas remain in the soil of the valley.

Eventually, the Brahmaputra River joins another river, the Ganges (GAN-jeez), on the plains. The land where the two rivers meet is very **fertile**.



A typical southern town along the Brahmaputra River gets between 70 and 150 inches of rain a year. The heaviest rainfall, occurs during the southwest monsoon between June and October.

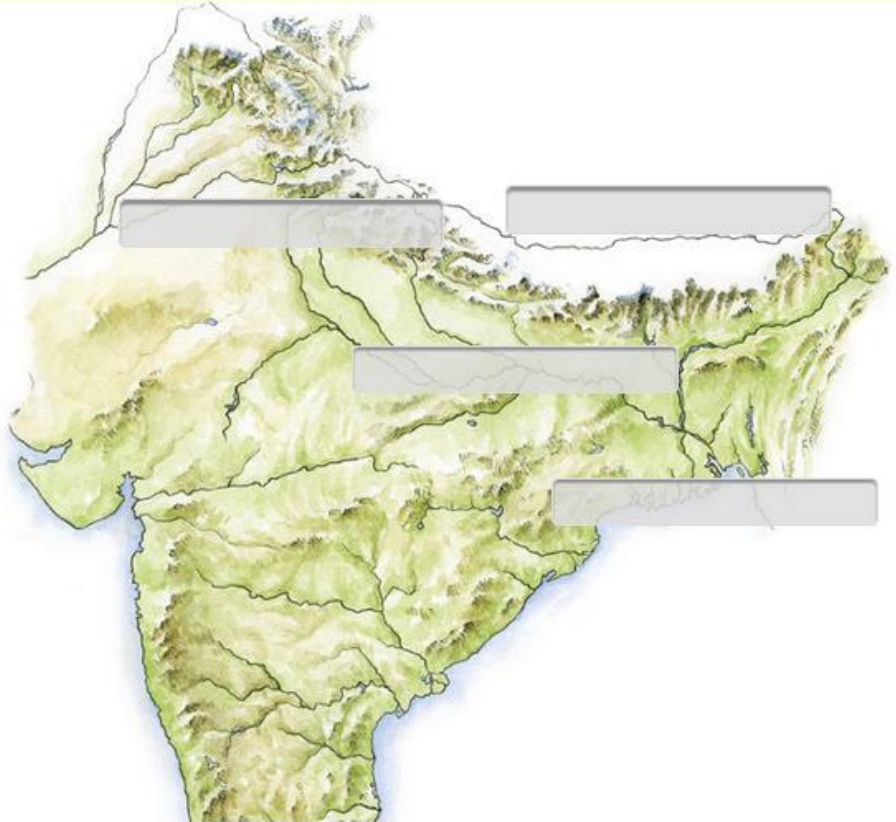
Drag each geographic feature to its correct spot on the map.

fertile land

Himalayas

Ganges

Brahmaputra



Check My Answers

Reset

Interactive Student Notebook Section 1—see handout

Section 2 Deccan Plateau

The Deccan (DEH-kuhn) Plateau is a triangle-shaped area that lies between two mountain ranges in southern India. A **plateau** is an **elevated**, or raised, area of land that is flatter than a mountain. The Deccan Plateau has several kinds of land. In the flatter parts, large granite rocks formed by volcanoes cover the land. These rocks are among the world's oldest, dating back more than 60 million years. The hillier parts of the plateau have thin forests and low, scrubby bushes.

The plateau is fairly dry. There are a few rivers, but the monsoon rains provide most of the water. The soil on the plateau is black, yellow, or red. The black soil is rich in iron and good for growing cotton, but the yellow and red soils lack key minerals, making it harder for farmers to grow plants in those areas.



A typical town in the Deccan Plateau receives about 30 inches of rain a year. The heaviest rainfall occurs between June and October, during the southwest monsoon.



6_AW_IT_13_1V.mp4

Click this icon to play video.

What makes a plateau different than a mountain?

- A. Plateaus are much higher than mountains.
- B. Plateaus have flat tops, unlike mountains.
- C. Plateaus are only made from granite.
- D. Plateaus have rivers running through them.



Interactive Student Notebook Section 2—see handout

Section 3. Eastern and Western Ghats

The Eastern and Western Ghats (ghats) are long mountain chains near the coasts of India. The Eastern Ghats extend along India's east coast. The Western Ghats extend along the west coast. When seen from above, these two mountain ranges form a large “V” around the Deccan Plateau.

The Western Ghats are higher than the Eastern Ghats. This mountain range has steep slopes; narrow valleys; thick, hardwood forests; and extremely heavy rains. The wet climate encourages the growth of tropical plants.

The Eastern Ghats are not as wet as the Western Ghats. Several rivers flow through these green mountains, which are dotted with hardwood trees. Although the rivers rarely flood, they are unsafe for travel because they move rapidly, contain many rocks, and often plunge suddenly over cliffs.



Parts of the Ghats receive 100 or more inches of rain a year, which is great for growing crops like the tea leaves shown here.

Which physical feature can **ONLY** be found in the Western Ghats but not the Eastern Ghats?



Check Answer

Reset

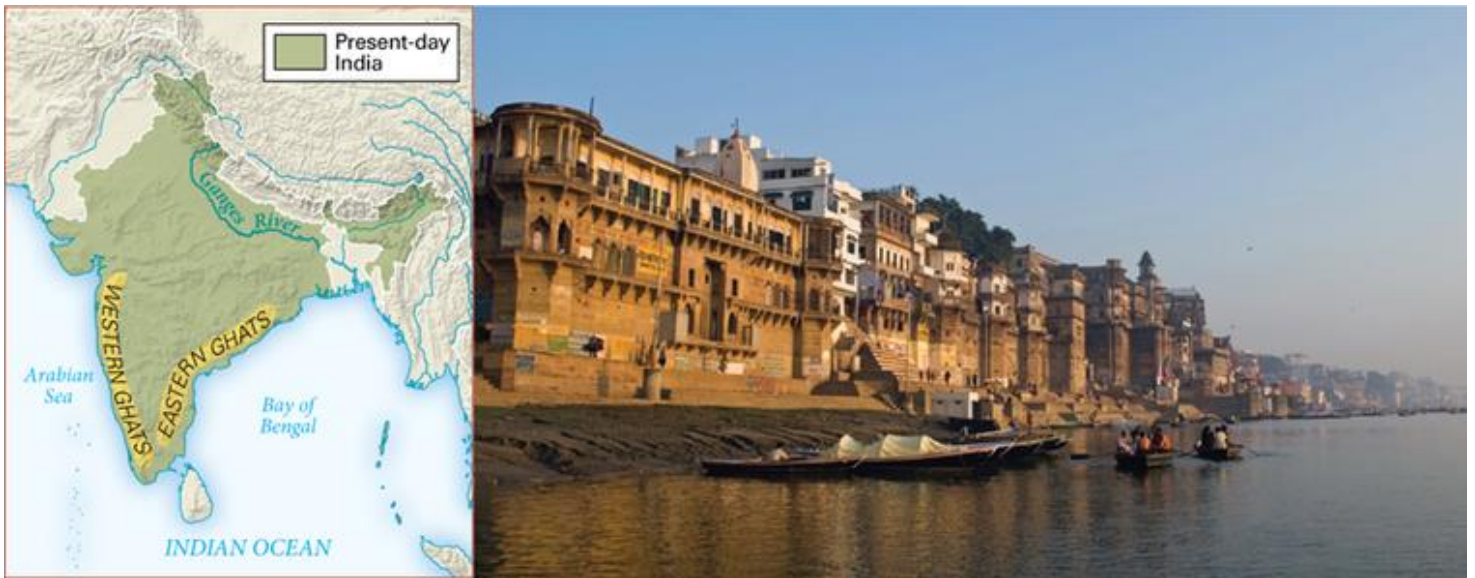
Interactive Student Notebook Section 3—see handout

Section 4. Ganges River

The Ganges River flows across most of northern India. Starting in the Himalaya Mountains, the river makes its way south through ice, rocks, and magnificent mountains and valleys.

The river carries silt from the Himalayas to the northern plains. As the river passes through the plains, it leaves the rich sediment behind. As a result, the northern plains contain some of the most fertile farmland in the world.

Melted ice carried down from the Himalayas provides the Ganges River plains with a good supply of water. During the rainy season, the river can flood and destroy crops planted along its banks.



This town is along the Ganges River, which helps fertilize nearby farms.



6_AW_IT_13_17V.mp4

Click this icon to play video.

Select the appropriate term for each blank.



- The Ganges river flows .
- It starts in the .
- from the Himalayas supplies the Ganges with lots of water.

Terms:

Northern plains

South

Ice

North Himalayas

Rain

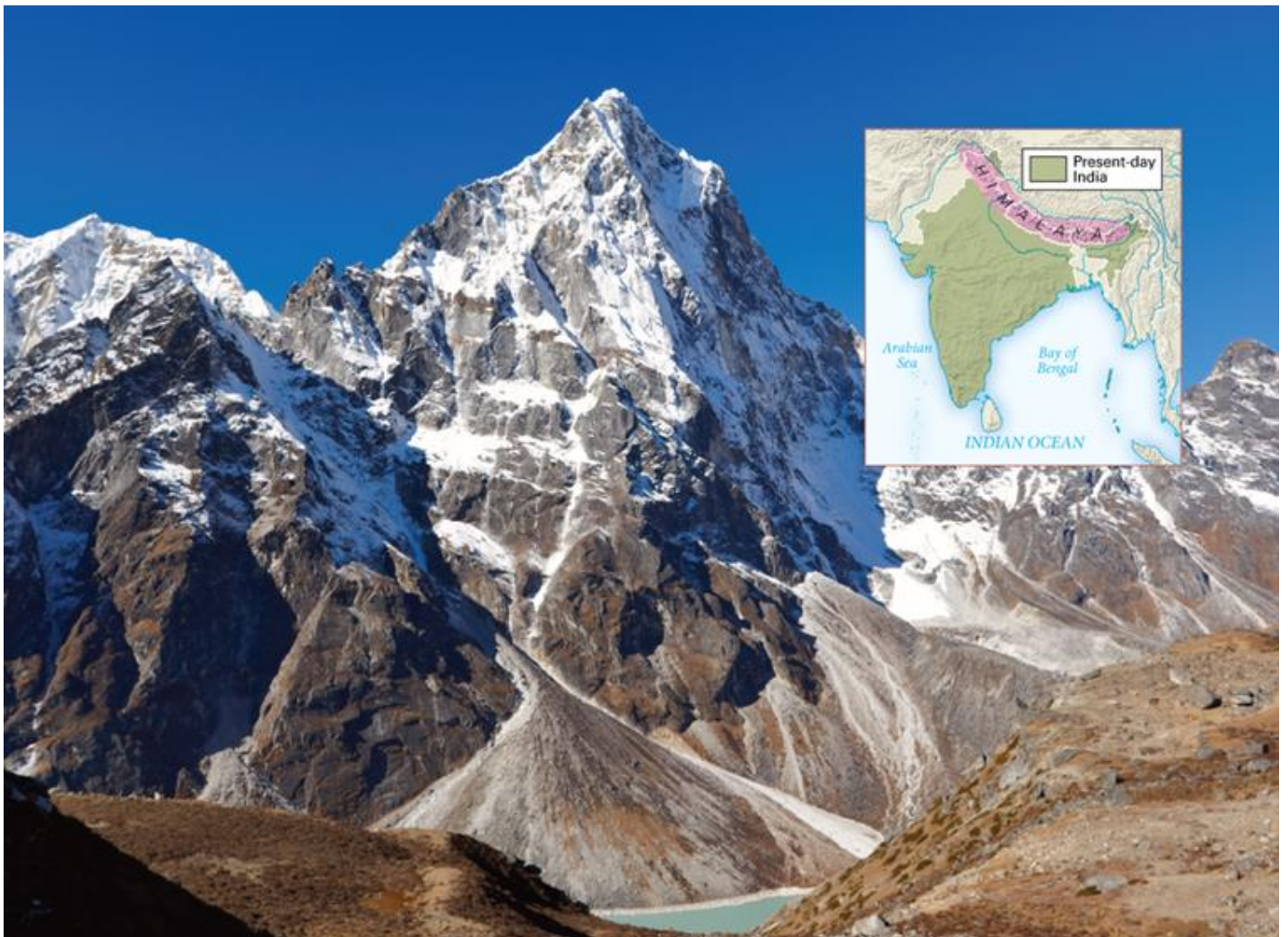
Interactive Student Notebook Section 4 see handout

Section 5. Himalaya Mountains

The Himalaya Mountains are located along India's northern border. This mountain range is the highest in the world and forms a natural border between the Indian subcontinent and much of Asia. Mount Everest, the world's tallest mountain, is part of the Himalayas, and reaches about five and a half miles into the sky.

The Himalayas live up to their name, which means “home of snows,” as the highest peaks are always covered in snow and ice. Fierce storms can dump several feet of snow on the area at one time. Water from glaciers in the Himalaya Mountains feeds northern India's major rivers.

Underneath the Himalaya Mountains, Earth is always moving. This constant movement causes Mount Everest to rise slightly every year. It also makes earthquakes and landslides common in the area.



The upper peaks of the Himalayas are always covered in snow and ice. The heaviest snowfall occurs between June and October, during the southwest monsoon. Temperatures on the highest peaks never rise above freezing (32°F).

Drag the terms to their appropriate locations.

Word Bank

fires

increases

landslides

Africa

decreases

tornadoes

Asia

the Ganges



The Himalayas form a natural border between India and the rest of

1

. Mount Everest

2

in height each

year. The Earth moving underneath Everest makes

3

common events on the mountain.

Check My Answers

Reset

Interactive Student Notebook Section 5 see handout

Section 6. Hindu Kush Mountains

The Hindu Kush mountains form a rugged barrier between the Indus (IN-duhs) River valley and Afghanistan. Although not as tall as the Himalayas, this mountain range is still one of the highest in the world with some of its peaks rising almost five miles high. Many parts of the mountain range are unlivable because snow and ice permanently over the steep slopes and peaks.

The Khyber (KIE-ber) Pass forms a gap about 30 miles long in the mountains on the Afghanistan-Pakistan border. The pass connects central Asia to the Indian subcontinent. For thousands of years, traders used the pass to enter the Indus River valley. Invaders also used the pass, but some died in the mountains' unforgiving landscape.



The Hindu Kush mountain range is one of the tallest in the world. Many parts of this range are permanently covered in snow and ice.

The _____ allowed traders to travel between Afghanistan and Pakistan.

- A. Bay of Bengal
- B. Indus River valley
- C. Khyber Pass
- D. Himalayas



Check Answer

Reset

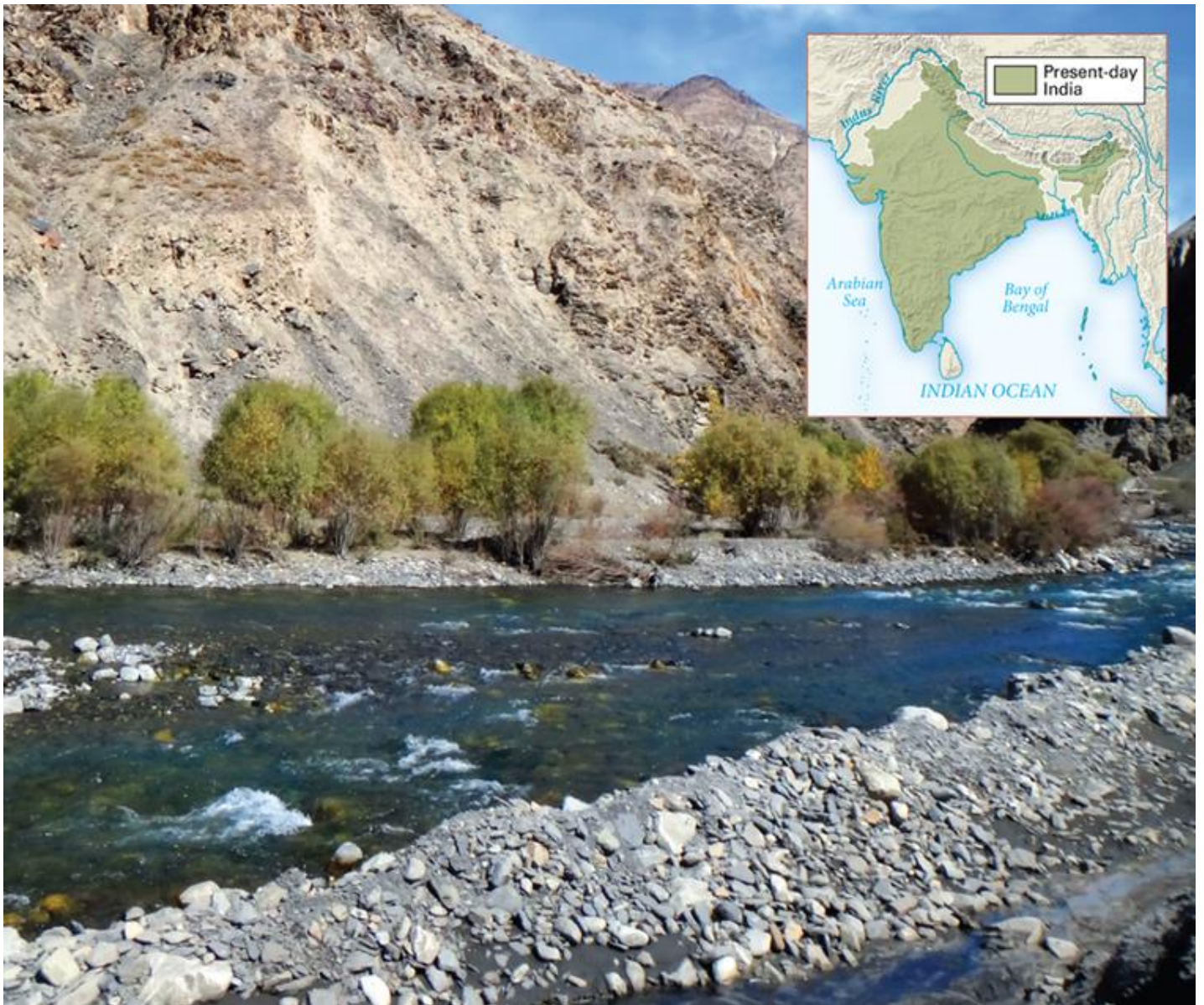
Interactive Student Notebook Section 6 see handout

Section 7. Indus River

The Indus River begins in the Himalaya Mountains. It gets most of its water from snow melting in the Hindu Kush mountains and the Himalayas. This runoff of melting snow and ice from the mountains changes the river's water levels throughout the year. Eventually, the river flows through present-day Pakistan and empties into the Arabian Sea.

The Indus River valley contains some of the best farmland in the world. Like the Ganges River, the Indus River carries silt from the mountains to the plains, leaving the surrounding soil rich and fertile.

The Indus River is sometimes compared to Egypt's Nile River because, like the Nile, the Indus is an important source of water for the farmland that lies along its banks. Most farmers prefer to settle near a good water source so that their crops can grow better.



Towns along the Indus River receive from 5 to 20 inches of rain a year. The heaviest rains fall between June and October, during the southwest monsoon.

Drag the terms to their appropriate locations.

Word Bank

Nile River

Arabian Sea

Himalaya

Hindu Kush

silt

salt

Bay of Bengal



The Indus River starts in the mountains and ends at the . The Indus is often compared to the . The Indus carries to the plains, which makes farming easier.

Interactive Student Notebook Section 7 see handout

Section 8 Thar Desert

The massive Thar (tahr) Desert in northern India is mostly sand and stone. Huge, rolling sand dunes stretch for hundreds of miles. Littered with rocks, the landscape has very little plant life except for grass and low, hardy shrubs. Most of the time, the heat is unbearable.

Water is a very precious resource in the desert. Rain is rare, although the monsoons may occasionally bring a **brief** but **intense** storm. The dry conditions make dust storms common.

Many animals and birds make their home in the desert. In fact, there are more than forty-five kinds of lizards and snakes. Gazelles lope across the sand. Birds include quail, ducks, and geese.

Camels are perfect for the dry climate of the desert because they can go for very long periods without drinking water. For this reason, many travelers choose to bring camels with them if they need to cross an area as harsh as the Thar Desert.



The Thar Desert receives about 4 to 20 inches of rain a year. The heaviest rains fall during the southwest monsoon between June and September.

Which animal DOES NOT live in the Thar Desert?



Check Answer

Reset

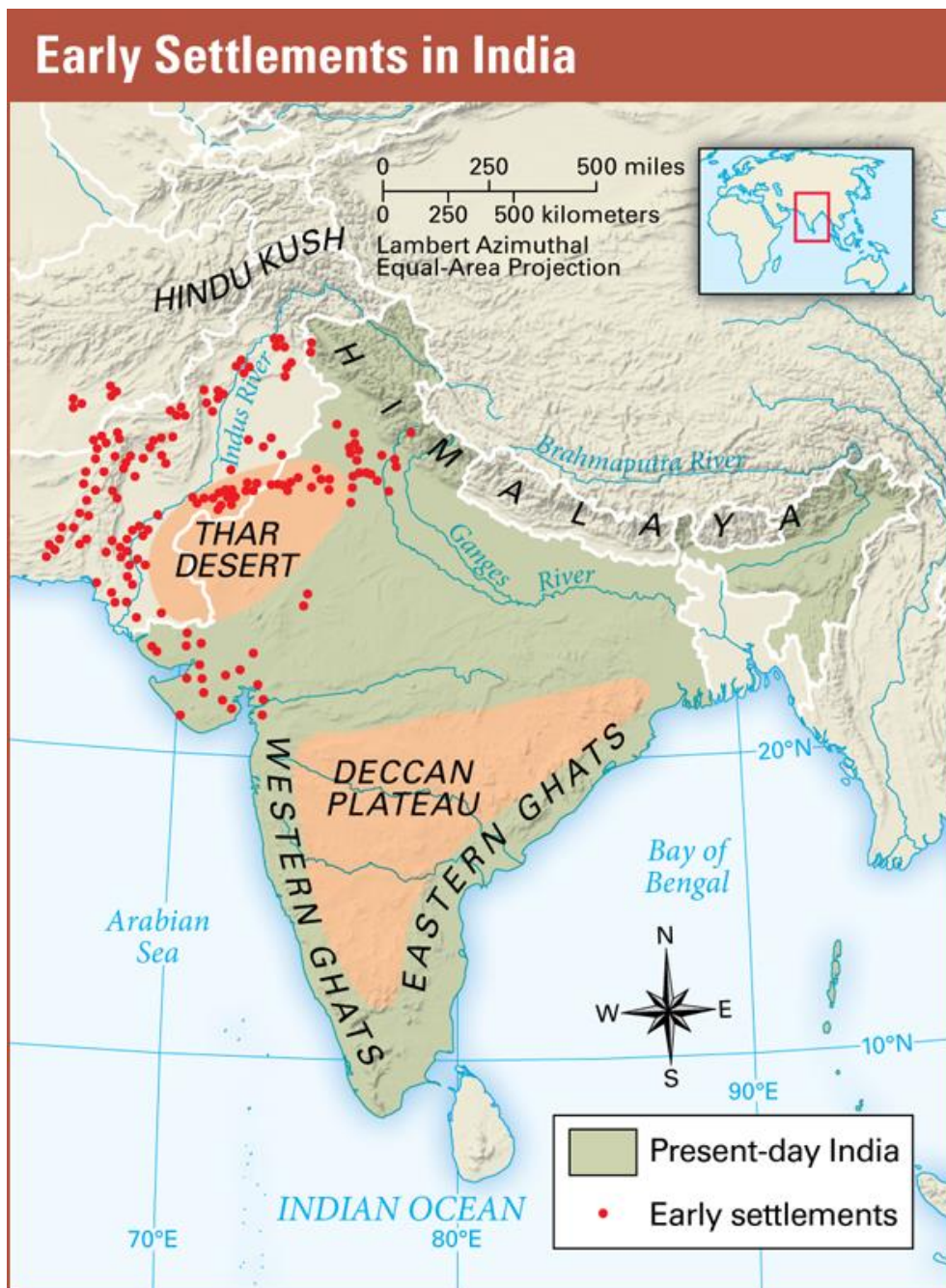
Interactive Student Notebook Section 8 see handout

Section 9. Early Settlements in India

Like many ancient peoples, the first people in India most likely chose to settle near rivers. The rivers provided plenty of water, and the fertile soil was ideal for farming. The rivers could also be used for travel and trade.

The first known settlements in ancient India were in the Indus River valley. There were farming communities in this valley as early as 4500 B.C.E. By 3000 B.C.E., people also lived near the Ganges River. By 2500 B.C.E., there were walled settlements in the Indus River valley.

The geography of India greatly influenced the location of early settlements on the subcontinent. Both the Indus and the Ganges rivers carried rich silt from the mountains to the plains. When the rivers flooded, the silt spread over the plains and made the soil in the river valleys fertile for farming. Over time, an ancient civilization developed and flourished in these settlements.



Where were the first ancient settlements in India located?

A.

Thar Desert



B.

Deccan Plateau



C.

Indus River Valley



D.

Himalayas



Interactive Student Notebook Section 9 see handout

Lesson Summary

In this lesson, you explored eight physical features of the Indian subcontinent and how they affected early settlement in India.

Major Rivers In northern India, the Brahmaputra, the Ganges, and the Indus rivers carry rich silt from the mountains to the plains. India's early settlers farmed and later built walled settlements in the river valleys. This was the start of civilization in India.

Deccan Plateau In some parts of this raised area between two mountain ranges in southern India, rich black soil is good for growing cotton.

Mountain Ranges The Eastern and Western Ghats are near India's coasts. Between them lies the Deccan Plateau. The Western Ghats are higher and wetter than the Eastern Ghats. The Himalayas along India's northern border are the highest mountains in the world. The Hindu Kush range runs through present-day Pakistan. It provides access through the Khyber Pass to the Indian subcontinent.

Thar Desert This vast desert in northern India has huge sand dunes, little plant life, extreme heat, and a variety of animals. Dust storms are common.



Drag each term to its correct definition.

Vocabulary Term

plateau

monsoon

subcontinent

1. a flat area of land that is elevated, or raised, above the land around it

2. a large landmass that is smaller than a continent

3. a strong wind that brings heavy rain to southern Asia in the summer

Check My Answers

Reset

Interactive Student Notebook Lesson Summary see handout

Saving the Ganges

The Ganges is India's sacred river. In the Hindu religion, “Ganga,” as the river is called, is considered a goddess. Despite its sacred status, the Ganges has become one of the most polluted rivers in the world. How did this happen? What are people doing to correct the problem?

It is Saturday in Allahabad, India. A large crowd of Hindu pilgrims descends the steps of a *ghat*, or ritual bathing area, to step into the waters of the Ganges. Devout Hindus believe that a dip in the river washes away their sins. Millions of people take that dip every year. Children leap happily from the bottom step, as they would at a swimming pool. Mothers bathe their infants. People wash their hair, their clothes, even their mouth in the sacred river. One elderly man scoops up water in a pot. “I’ll use this for drinking and cooking and get some more tonight,” he says. “It’s absolutely clean. Of course it is, it’s Ganges water.”

The Ganges begins where a number of small streams form from melting glaciers in the Himalaya Mountains. The river flows for 1,560 miles along its southeast course to the sea and empties into the Bay of Bengal.

Indian civilization developed along its banks. About 400 million people—a third of India’s population—still live along the river and its branches. Water from the Ganges is their main source of water for drinking, cooking, and washing. Farmers depend on the river to grow rice, sugarcane, potatoes, wheat, and other crops.

What that elderly man said about his pot of Ganges water may have been correct—once. Until the 1980s, the Ganges was a remarkably clean river. Because it is rich in dissolved oxygen, disease-carrying bacteria did not live long in its waters. This was largely due to bacteria-eating viruses called *bacteriophages*. Unlike most river water, a pot of Ganges water would stay fresh for a long time. The river’s self-purifying nature may be one reason why the Hindu people considered the Ganges a goddess.

Today, however, the situation is very different. The Ganges has become so polluted that it no longer is able to clean itself. Its waters have become unhealthy not only for drinking and bathing but for farming as well.

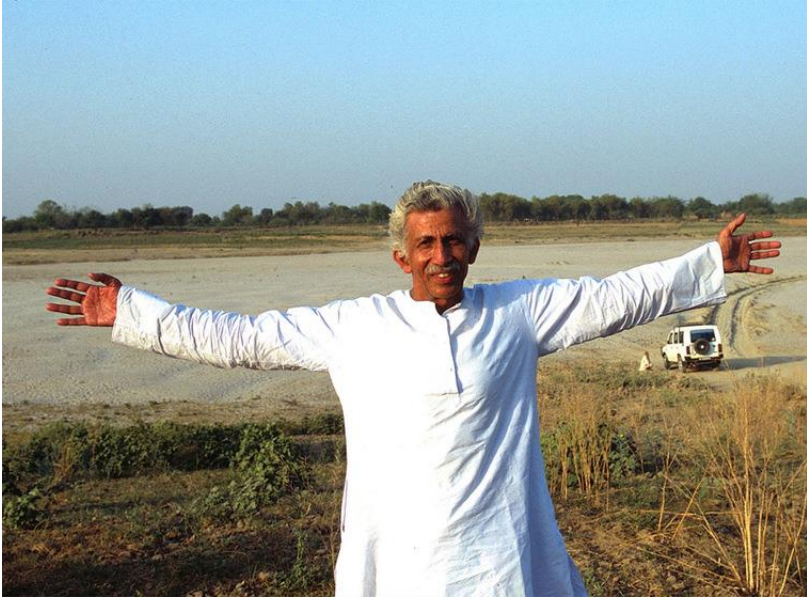
Ancient River, Modern Problems

The Ganges river basin is the most heavily populated river basin in the world. Today, more than 500 million people live in this region of the world. The Ganges also flows past some of India’s largest cities. While the Ganges river basin’s population and industry have grown enormously over the last several decades, modern forms of sanitation, such as industrial and sewage treatment, have not kept up.

Millions of gallons of waste water from more than 100 cities pour into the Ganges each day. Normally, treatment plants would sanitize this sewage before it reached the river. Because the Ganges river valley has such a large population, however, these plants often can’t handle a fraction of the waste water that is actually produced. Some scientists have estimated that nearly 1 billion liters of waste is produced each day in this area. Some waste water does not even reach the plants because sewers may be broken. Electricity also sometimes goes out, forcing the plants to shut down, but the sewage keeps flowing. Other areas along the Ganges may have no waste water treatment plants at all.

Factories and farms also influence the pollution levels in the river. Leather tanning, cloth making, and fertilizer manufacturing use cancer-causing chemicals that can end up in the Ganges. When farmers spray their crops to kill insect pests, these poisons flow into the Ganges, too.

To Hindus, Varanasi, a city downstream from Allahabad is the holiest of cities. Every year, millions of pilgrims bathe at its more than 75 ghats. But the pollution has become very bad at Varnasi. As it enters the city, the Ganges contains 120 times more disease-causing bacteria than is safe for bathing. Then it flows past several sewers, increasing the bacterial count to 3,000 times the safe level just four miles downstream. People who bathe in these once clean waters may become sick with diseases such as cholera, typhoid, or hepatitis. Sadly, the life-giving water of the Ganges, in some places, has become polluted enough to cause disease and death.



Dr. Veer Bhadra Mishra was both a Hindu priest and a water engineer. He worked for many years to clean up the pollution in the Ganges.

A Hero of the Planet

Dr. Veer Bhadra Mishra was a Hindu priest and the head of Sankat Mochan, a temple in Varanasi. Every morning, he took his ritual dip in the Ganges, but he knew better than to drink the water. Initially a university professor, Mishra became a scientist and water engineer who made it his life's work to clean up “Mother Ganga.”

“All our rivers have stories,” Mishra said. “All our rivers are important. But there is nothing anywhere like the Ganga.”

Mishra was born a priest. The leadership of his temple has passed from father to eldest son since the 16th century. He inherited the job when he was 14, but his mother urged him to attend college, too. No one in his family had ever been to school. Mishra believed it happened because the Ganges needed his help.

Mishra's education as a civil engineer helped him better understand that the Ganges was in trouble. Unfortunately, it seemed to him that nobody in India's government was interested in doing anything about the dangerous pollution.

So, in 1982, Mishra started the Sankat Mochan Foundation to help people living along the Ganges. The foundation created a program called “Campaign for a Clean Ganga,” which aimed to educate people about the causes of pollution. It maintains a Web site, posting articles about environmental issues. India's news media may use the information for free.

Donations and support came from foundations, governments, and people from all around the world. In 1999, Dr. Mishra won a *Time* magazine “Hero of the Planet” award. The United Nations also honored him.

The Indian government began to pay attention, too. In 1986, it launched the Ganga Action Plan, or GAP, which worked to use sewage treatment plants to clean up the Ganges. The GAP was an expensive failure because there were neither enough plants to handle the amount of sewage, nor enough power to run the plants. By 2002, the Ganges was more polluted than ever.

Dr. Mishra did not give up, and he pursued another plan that would use simpler technology. With a group of California scientists, he developed a system that did not need electricity. Instead, it used gravity to divert pollutants from the Ganges into ponds where they would be stored for 45 days. Helpful bacteria, algae, and sunlight would break the pollutants down into harmless substances.

Mishra wanted to try out this plan in Varanasi, believing it would be cheaper and more effective than the government's plan. The Varanasi city council accepted the idea, but the state and national governments turned it down.

Mishra knew that it would take time to gain acceptance for his plan. In the meantime, he began to educate the people of his city. He wanted to change their age-old habits that harmed the river. His foundation met with pilgrims. It organized citizens and children. Young workers cleaned up litter from the banks of the Ganges, but the problem was so huge that these efforts had little effect.

Scientists from other countries heard about Mishra's project. Steve Hamner, a scientist from Montana State University, traveled to India in 2003. He met with Dr. Mishra and other Indian scientists. Hamner and an Indian government lab made detailed studies of Ganges water. After the pollution was measured in a scientific way, the Indian lab brought the findings to India's Supreme Court.

This time the government listened. In 2007, India's prime minister met with Dr. Mishra. A year later, Mishra heard what he called “the best news in 20 years.” The government was agreeing to support a pilot program of his plan in Varanasi. If it worked there, it could be put into effect all along the Ganges.

The Ganges' story is not over. Despite Mishra's death in 2013, the foundation he established still remains. Mishra's efforts are not forgotten as the struggle to clean up the Ganges continues.

In 2014, the Government of India launched the “Namami Ganga” project. The purpose of the project was to speed up the cleaning and rejuvenation of the river. One of the primary goals of the project is to fix issues that have caused pollution in the Ganges. Among these is finding better ways to treat sewage and industrial waste so that no more pollutants are released into the water.

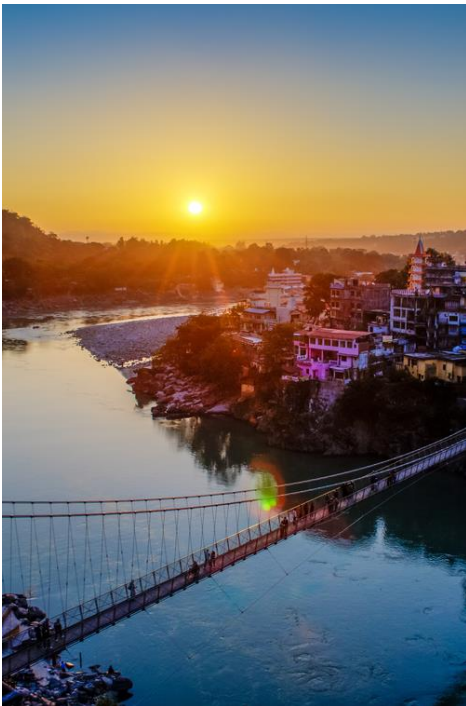
Today, more people are learning about the troubles facing the Ganges. Each day, people throughout India work hard to help conserve and revive the river that they love and respect so much.



The Ganges begins in the Himalaya Mountains and flows southeast for 1,560 miles until it joins with other rivers and empties into the Bay of Bengal. The river is important to millions of people and is considered sacred by the Hindus.



Pollution in the Ganges comes from sewage as well as chemicals from factories and farms. It also comes from litter and garbage that people put in the river.



Today, other scientists and the Government of India are experimenting with new ways to return the Ganges to its former unpolluted state. Many remain confident that the river can still be saved.

Interactive Student Notebook see handout

