



Directions:

print, complete, staple together, & submit pages: 1,4,5,6,7,10,11,12

Egypt, the Kingdom of Kush, and Mesopotamia

Preview

Activate Schema. Scan to see what you know about Egypt, kingdoms, and ancient cultures.

Establish a Purpose for Reading. What do you need to learn?

Vocabulary: complete page 6 before reading the selection.

Read & Integrate Knowledge

Predict Picture Relate Monitor Fix

Imagine a life directly defined by roughly a third of a year of rain and flooding. The people of ancient Mesopotamia, Egypt, and the Kingdom of Kush all lived that life: their economies, power, and simple survival depended on the seasons of the rivers that ran through each empire.

Ancient Egypt and Mesopotamia made up parts of the area known as the Fertile Crescent, which experienced rain every year for about 100 days, beginning in the late spring or early summer. For ancient Egypt, this caused the Nile River to flood, which saturated the normally arid land around it with water and nutrient-rich, river-born soil called silt. Ancient Egyptians are now revered as the masters of desert agriculture, for their irrigation technology allowed them to cultivate crops during the dry months, from a fall-season sowing to springtime harvest. Their expertise started with simply monitoring weather patterns and gauging the rise and fall of the Nile’s water levels, practices by which the nation’s people were able to plan their planting and harvest seasons accordingly.

Some special inventions revolving around the rainy season included the system of dikes and canals built to contain and direct the floodwaters of the Nile. By diverting water, ancient Egyptians were able to keep it from washing onto un-farmable desert terrain, where it would

essentially be wasted. Instead, the ability to move water to the crops that needed it allowed for a productive growing season and higher crop yield.

Ancient Egyptians grew a variety of crops, and they were able to build cities around the abundance. They traded grains like corn (and in surplus years, could store excess in granaries as well), made linen from flax, and sustained themselves on garden crops grown in smaller plots, often part of personal households. Cities thrived along the Nile, in large part because of the proximity to the obvious transportation, which facilitated trade. As the fruits of farm labor were traded, city merchants grew wealthier, and the metropolis thrived.

The same sort of growth was characteristic of the nearby kingdom of Kush, also known as Nubia. Kush was situated just south of ancient Egypt, in what is now southern Egypt and northern Sudan. Kush's two capitals, first Napata and then Meroe, were each situated along the Nile. The Kushites employed many of the same irrigation techniques as the ancient Egyptians did, taking advantage of the rainy season to keep the land fertile. Using dams and cataracts, the Kushites directed the flow of water to grow wheat, barley, lentils, peas, and even dates and mangoes. Waterwheels known as "saqia" allowed for even further movement of water to higher ground.

Midway through the golden years of Kush (called, too, the "Land of Gold" for its gold trade), the arrival of iron changed farming forever. An invasion by the Assyrians cut short the influence of Kush in Egypt, but while they lost power over their Northern neighbors, the Kushites gained knowledge of ironwork. The deserts east of the Nile near the city of Meroe were rich in iron ore, and as Kush began to make tools such as hoes and plows, crop yields increased. Again, with the proximity of the harvest to the river—the main means of trade and travel—cities like Napata and Meroe grew and enjoyed prosperity with the agriculture-driven commerce.

Located across the Red Sea and the Syrian Desert from Kush, there was the famous region of the Fertile Crescent called Mesopotamia. Framed by the Tigris and Euphrates rivers, it occupied what is now Iraq. The area experienced the same cyclical flooding periods that ancient Egypt and Kush did, and thus had to learn to adapt. The difference is, this "land between rivers" (the meaning of the origin of the name "Mesopotamia") had the flooding of not just one waterway but an entire flowing border to harness. However, like ancient Egypt and Kush, its location made it an ideal site for irrigation practices: as the people of the Nile did, Mesopotamians coaxed water into typically drier regions with canals. The land was routinely fertilized by rich silt washed up by the rivers; Mesopotamia supported the harvest of barley,

onions, grapes, apples, and turnips. Cattle and sheep grazed on fertile grassland, and fishermen made a living selling and trading their catch.

Like the famous cities of Thebes, Meroe, and Napata, Mesopotamian cities such as Ur and Babylon sat near the rivers, again seeing success on the water because of the agricultural and trade possibilities making commerce possible and merchants rich. In each city, and in each kingdom, success and power were facilitated by both agricultural advancements (such as iron tools and irrigation) and the means to trade and sell a harvest (the rivers). The reigns of ancient Egypt, Mesopotamia, and Kush were all dependent on an uncomplicated but involved cycle: the rivers provided the water needed to grow crops such as wheat and corn, technology made irrigation, plowing, and harvest possible, and trade generated income to the cities along the river. In this way, waterfront settlements in each region became seats of commerce and power: they were self-sustaining metropolises.

The downfall of these cities was also woven with the success and failure of the agriculture of ancient Egypt, Mesopotamia, and Kush. Generations of tough farming and overgrazing sapped land of nutrients, and in Kush, the deforestation that accompanied the mining of iron ore caused devastating erosion. As land morphed from oasis to desert, cities lost their power: there was nothing left to grow, and nothing left to trade. In spite of their tremendous advances in agricultural technology, these ancient cultures could not combat dust for long, and when farms dried out, so too did the power and success of ancient Egyptian, Kushian, and Mesopotamian cities.

Recall**Comprehension Questions**

(circle the best answer)

- 1.** The economies, power, and survival of ancient Mesopotamia, Egypt, and the Kingdom of Kush depended on what?
 - A** the Sahara Desert of Africa
 - B** the trade of wheat, barley, lentils, and peas
 - C** the trade of iron and gold established in each empire
 - D** the seasons of the rivers that ran through each empire

- 2.** The normally arid land around the Nile River became saturated with water and nutrient-rich, river-born soil called silt. What caused this to happen?
 - A** The people in the Fertile Crescent were able to grow a variety of crops.
 - B** The people in the Fertile Crescent built effective irrigation systems.
 - C** The Nile River flooded due to heavy rains.
 - D** The Nile River dried out due to lack of rain.

- 3.** The Nile River was responsible for the success of the Ancient Egyptian cities. Which evidence best supports this statement?
 - A** Every year, beginning in the late spring or early summer, the area known as the Fertile Crescent experienced rain for about 100 days.
 - B** A system of dikes and canals were built in Ancient Egypt to contain and direct the floodwaters of the Nile.
 - C** Ancient Egyptians are now revered as the masters of desert agriculture because their irrigation technology allowed them to cultivate crops during the dry months.
 - D** Cities thrived along the Nile, in large part because of the proximity to the obvious transportation, which facilitated trade.

- 4.** Which main factor contributed to the downfall of Mesopotamia, Egypt, and the Kingdom of Kush?
 - A** bad agricultural practices
 - B** periods of drought
 - C** corruption and war
 - D** drastic population growth

- 5.** What is the main idea of this passage?
 - A** Ancient inventions made from iron ore were important to the success of the empires of Egypt, Mesopotamia, and the Kingdom of Kush.
 - B** Ancient civilizations in the Fertile Crescent relied on rivers and harnessed their power to develop into strong and wealthy empires.
 - C** The Kingdom of Kush and Mesopotamia depended on the Egyptians to develop technologies that harnessed the power of rivers.
 - D** Reliance on rivers was the cause of the downfall of many ancient empires.

6. Read the following sentences: "Some special inventions revolving around the rainy season included the system of dikes and canals built to contain and direct the floodwaters of the Nile. By **diverting** water, Ancient Egyptians were able to keep it from washing onto un-farmable desert terrain, where it would essentially be wasted."

As used in the passage, what does the word "**diverting**" most nearly mean?

- A drying
- B wasting
- C directing
- D drinking

7. Choose the answer that best completes the sentence below

The growth of Ancient civilizations in the Fertile Crescent was aided by inventions, _____ irrigation networks and ironwork.

- A instead
- B because
- C including
- D as a result

8. How did the Kushites benefit from their knowledge of ironwork?

9. According to the passage, what two things facilitated success and power in Egypt, the Kingdom of Kush, and Mesopotamia?

10. Read this sentence from the passage: "In this way, waterfront settlements in each region became seats of commerce and power: they were self-sustaining metropolises." Something that is **self-sustaining** is able to continue by itself without anyone or anything else becoming involved. Use evidence from the text to explain how the metropolises, or cities, described in the passage were "self-sustaining"



Using Cellphones and Computers to Transmit Information

By Alissa Fleck

Preview

Activate Schema. Scan to see what you know about computers, cell phones, and wireless transmission of information.

Establish a Purpose for Reading. What do you need to learn?

Vocabulary: complete page 12 before reading the selection.

Read & Integrate Knowledge

Predict Picture Relate Monitor Fix

Modern technology can do some pretty incredible things. It's possible, with current technological capabilities, to transmit digital information over long distances using coding and decoding processes without losing the contents of the original information. The best part is we don't have to do anything besides send the message and wait for it to be received.

Consider, for instance, the cellular phone. It wasn't until the early 1980s that this mobile variation on the standard telephone was even available for people to use, but now, in 2013, cellphones are everywhere, sending and receiving information in speedy ways invisible to the human eye

There's so much going on below the surface of what we can see when we use our cellphones. One difference between a mobile phone and a traditional landline telephone is you can move the cellphone just about anywhere geographically and still use it to talk to other phone users. No matter how far away you are from someone you call, you can usually still understand each other's voices over the phone, thanks to radio waves and something called a cellular network.

It took many evolutions in phone technology to get where we are today, but the current cellphone wirelessly transmits information by connecting to a cellular network. Mobile phone operators provide these cellular networks, which function with the help of cellphone towers, and then calls are made over what is known as a radio link. Through this process, information—in this case, voice input—is broken down and reassembled over the radio link, so the person on the other end instantaneously hears what is said.

In other words, as you speak into the phone, your voice is converted into an electrical signal, transmitted in the form of a radio wave by these towers, and then converted back into the sound of your voice by the phone on the receiving end. All this happens in the blink of an eye while you chat over the phone without any distortion.

The process of transmitting digital information is not exclusive to telephones. Computers are another instrument that can receive, decode and convert information, though typically this information is not a person's voice, but written content.

We may take for granted the ease with which we can pass along information with computers and the Internet, but many forces are hard at work processing information to make computers easier for us to use and communication more reliable.

The first computer showed up around 1941, but it was much more limited in its capabilities than computers now. In fact, computers are everywhere—sometimes they are so small we do not think of them as computers at all, though they serve the same function as the computers we have at home, the office or school.

Much like cellular telephones, computers were actually first used to transmit sensitive information across geographical spaces by the military at a point when government officials worried it would be possible to knock out a country's entire telephone grid.

Computer engineers began finding ways to link their computers together in order to share information among them. This linking began with just a couple of computers and grew to the millions which connect regularly today. Ultimately, that's how what we know as the Internet was developed.

Wireless computer networking is also similar to cellular phone use in that computers use the same networks our mobile phones use

While you speak into the telephone using your voice, you typically insert data into your computer by typing on the keyboard. You may decide to share information through an email or access information on a website by typing in or visiting what is known as a hyperlink.

When you use the Internet to share and access information, you connect to the relevant network. You can send a message from your computer to another computer anywhere in the world and it will arrive almost immediately, going through many different networks in the process.

Still, the information you send does not travel in a single piece as it might through the standard mail service; instead, it is broken down into smaller digital information. As with a cellphone, the information you send is fragmented into tiny pieces and then reconstructed once it's reached its destination. Along with your message comes other information, for instance about ordering, or how the message should be restructured to make sense to the reader. Your message will also include more basic data about where it came from and where it is supposed to go.

Computers and the Internet require many high-tech and complicated pieces to run properly, but something known as a router is a key instrument that keeps information being sent from one computer to another going along the correct pathway. The Internet also relies on telephone wires and satellite links for wireless information sharing

.It's important to note that for the Internet to work as it does, many companies have to agree to work with one another. The Internet is really a collection of networks working together toward a common goal of allowing information to be shared.

Recall**Comprehension Questions**

(circle the best answer)

1. What are two examples of technology that send information over long distances?

- A the human eye and computers
- B government officials and computers
- C cellphones and the human eye
- D cellphones and computers

2. What does the author compare to cellphones in this passage?

- A The author compares companies to cellphones.
- B The author compares engineers to cellphones.
- C The author compares computers to cellphones.
- D The author compares cellular networks to cellphones.

3. A cellphone sends and receives information in a speedy way invisible to the human eye. What evidence from the passage supports this statement?

- A When a person speaks into a cellphone, his or her voice is broken down and reassembled over a radio link, so the person on the other end instantaneously hears what is said.
- B When computers first showed up around 1941, they were used to transmit sensitive information across geographical spaces by the military because of worries government officials had.
- C Although people may take for granted the ease with which they can pass along information through computers, many forces are at work to make computer communication more reliable.
- D Like cellphones, computers can receive, decode, and convert information, though typically this information is written content rather than someone's voice.

4. What is one way that computer use has changed over time?

- A Computers were first used in homes, schools, and offices to send different kinds of information, but now they are used only by the military to send sensitive information.
- B Computers were first used by the military to send sensitive information, but now they are used in homes, schools, and offices to send different kinds of information.
- C Computers used to send a person's voice from one place to another, but now they send only written content.
- D Computers used to send a person's voice from one place to another, but they have been gradually replaced by landline telephones.

5. What is this passage mostly about?

- A computers, the Internet, and how the military uses technology to protect people
- B cellphones, landline telephones, and the reasons people have trouble hearing each other over the phone
- C mobile phone operators, government officials, and companies that work with one another
- D cellphones, computers, and how they send information from one place to another

6. Read the following sentence: "It's possible, with current technological capabilities, to **transmit** digital information over long distances using coding and decoding processes without losing the contents of the original information."

What does the word "**transmit**" mean in the sentence above?

- A harm
- B fold
- C hear
- D send

7. Choose the answer that best completes the sentence below.

Information is transmitted by different kinds of modern technology, _____ cellphones and computers.

- A in conclusion
- B instead
- C especially
- D never

8. According to the passage, what are cellphones used for?

9. How does a cellphone transmit information using cellular networks?

10. At the end of the passage, the author writes, "The Internet is really a collection of networks working together toward a common goal of allowing information to be shared." Could cellphones be described in the same way? Explain your answer using evidence from the passage.

Vocabulary

Word = Useful vocabulary in this reading selection (Some are provided. You supply more).
Definition = Define each word.
Synonym = Provide a synonym for each word.
Etymology = Circle any etymological words parts in each word and define them in this column.

Word	Definition	Synonym	Etymology
technology			
incredible			
variations			
cellular			
reassemble			
instantaneously			
typical			
restructured			
destination			
mobile			
exclusive			
transmit			
converted			

