THE DEVELOPMENT OF CIVILIZATION — HOW GEOGRAPHY GAVE SOME POPULATIONS A HEAD START (DISPELLING MYTHS OF RACIAL SUPERIORITY)

SUMMARY:

The full collection of Racial Literacy Grade 4 lessons are designed to help students understand how geography influenced the emergence of civilization. Humans are the only animals to build vast civilizations, and geography provided or denied the resources that allowed some groups of former hunter-gatherers to become farmers and herders and eventually develop some of the world's first civilizations. Students will explore the various engineering, technological, scientific, and mathematical innovations of such civilizations, tracing cross-cultural patterns in order to develop a more informed and eclectic worldview — enhancing their own cultural competency. A goal is for students to realize that humans of a given time and place created similar structures and/or inherited ideas to establish a common pattern that was dictated by geography. With such a lens, students will be able to analyze history and other social assertions that fabricate myths of racial superiority, including the ability to critique and dispel Eurocentric perspectives that favor a myopic view of race. We strongly encourage teachers to read carefully through all lessons, before launching the unit, to best understand the overarching objectives and to increase comfort with the scope and theme of topics.

GRADE 4 LESSONS BY TOPIC:

1. Where Did We Come From: Modern Humans Evolved in Africa
2. How the World's First Civilizations Formed: A Story of Geography
3. Tracing Cross-Cultural Patterns in the Development of Ancient Civilizations
4. How Geography Gave Some Populations a Head Start: Domesticated Animals
5. How Geography Gave Some Populations a Head Start: The Revolutionary Horse, Disease, and The Rise of Accidental Conquerors
6. How Geography Gave Some Populations a Head Start: Plant Power
7. How Geography Gave Some Populations a Head Start: The Shape of Continents
8. There are No "Geniuses" of History: Retelling the Story of Geographical Luck

LESSON 1

WHERE DO WE COME FROM?: MODERN HUMANS EVOLVED IN AFRICA

Grade: 4 | Suggested Time: 60 minutes (teacher may decide to extend)
Unit: The Development of Civilization – How Geography Gave Some Populations a Head Start (Dispelling Myths of Racial Superiority)
Related Subject(s): Reading/Literacy; Social Studies/History; Science

Background

OBJECTIVES

- To understand that modern humans — about 200,000 years ago — emerged in Africa.
- To understand that modern humans — at differents points in time, tens of thousands of years ago — migrated out of Africa.
- To understand that the human body evolved to adapt to the environment, such as the connection between melanin and skin color.

MATERIALS

- "Map Shows How Humans Migrated Across the Globe," video by *Science Insider* (of *Business Insider*). Available here: https://www.youtube.com/watch?v=CJdT6QcSbQ0
- *Early Humans* by DK Eyewitness Books.
- Note-taking supplies for students.
- To quickly gain greater insight into how modern humans evolved, a teacher may want to read portions of Jared Diamond's book, *The Third Chimpanzee for Young People*, such as Chapter Two, titled "The Great Leap Forward."

ESSENTIAL IDEA

- Where do we come from? When did we become modern humans? Why do we have physical differences, like skin color? This lesson will unpack these age old questions.
- It is believed that modern humans emerged in Africa. At various periods of time, tens of thousands of years ago, some modern humans began to migrate out of Africa, spreading into the Middle East, as well as Asia and Europe and beyond. As humans traveled into new environments, their bodies evolved in an effort to adapt and survive. This is why we have physical differences, though all modern humans are the same species. It should be noted that such physical differences are superficial, as our DNA has more similarities than differences. In fact, because they have been evolving longer, there is more genetic variation between two random chimpanzees than there are between two random humans. Race has no biological truth, but a social reality. This lesson will backtrack, tens and hundreds of thousands of years into the past, in an effort to simultaneously expose our common origins and foster a sense of shared humanity.

VOCABULARY

- Consider reviewing and/or defining the following geographical terms (ideally, this should happen before the lesson to reserve time): continents and regions, such as Africa, Sub-Saharan Africa, the Middle East, Asia, Australia, Europe, Eurasia, the Bering Strait, North and South America, etc.
- Review additional keys terms such as: modern humans, archaic humans, agricultural revolution, melanin (pigment, or coloring, in our skin), evolve and/or evolution.

Lesson Procedure

BACKGROUND

- Before the evolution of modern humans, there is evidence that various species of archaic humans existed, debunking the idea that modern humans evolved in one clean "line" of evolution. Somehow modern humans became the dominant species, and the only surviving humans on the planet. It may be noted that while many modern humans do carry DNA from archaic humans, or the "close cousins of modern humans," such as the Neanderthals and the Denisovans, all human beings living today are the same species of Homo sapiens, and are believed to have emerged from an original group of Homo sapiens somewhere in Africa. In fact, all living humans today can trace their ancestry, using mitochondrial information, to a single woman living in Africa about 150,000 years ago, whom scientists named "Mitochondrial Eve." Thus, Africa is the cradle of modern humans.

OPENING

- Tell students that they are about to dive into a fascinating study of the story of humans and how we created civilizations. How did some people evolve from hunter-gatherers to people who build cities and empires around the world?
- Before we explore the historical development of civilizations, let's first focus on the age old question: Where did humans come from?

GUIDED PRACTICE

- Ask students if they know the "birthplace" of modern humans? Listen to students' answers. Then tell students (if they didn't already correctly identify it): Before we migrated around the world, it is believed that modern humans emerged in Africa. In fact, using information stored in a part of our cells (called mitochondria), all living humans today can trace their ancestry to a single woman living in Africa about 150,000 years ago! Scientists have named her Mitochondrial Eve. That means all of us in the room share an ancient, ancient ancestor.
- If we all share an ancient ancestor, why do humans have physical differences? Listen to students' answers. Then move into a discussion of how we evolved with various physical differences: Even though modern humans originated in Africa, for the last tens of thousands of years, some humans began to migrate out of Africa, spreading to the Middle East, as well as Asia and Europe and beyond. As humans traveled into new environments, it is believed that our bodies evolved in an effort to better survive various climates. For example, if living in a place with more sun, like Sub-Saharan Africa, our skin needed more melanin, which created a darker color. If living in a place with less sun, like Northern Europe, our skin began to generate less melanin, which created a lighter skin color. (Please note this is a simplified explanation. For more information about the development of skin color, consider reviewing the resources listed in the Extensions section of this lesson plan.)
- Let's look at the patterns of migration. Consider showing the video, "Map Shows How Humans Migrated Across the Globe," by *Science Insider*. Link included in Materials section of lesson plan. Tell students to pay attention to the migration patterns and dates. After the video, ask students how long we have been modern humans (it's estimated to be about 200,000 years).
- Notice the video stated that the "agricultural revolution" began about 12,000 years ago? What was the agricultural revolution? Tell students that it marks the period of time when some humans began to farm on a larger scale, such as those living in what many refer to as the Middle East. Some of these early farmers eventually began to build cities, and even empires. We'll unpack the ideas and elements surrounding civilization in the next few lessons, but first let's focus on: What makes us modern humans?

INDEPENDENT AND/OR GROUP WORK

- Introduce the book *Early Humans*. Show the cover and review features of the book, such as the table of contents, glossary, and index.
- Either independently, or with a partner/small group, students should read through selected portions of the text. We recommend, for example, focusing on the development of modern humans, such as skimming pages 22–35. The sections of these pages include the following topics: Modern Human, The First Artists, Hunting and Gathering, Hunters of the Desert, Tilling the Soil, Clothing and Fabrics, Skin Deep (Body Decoration).
- For students who are interested in reading about archaic humans, consider allowing them to read the opening

pages of the book. Also, if students want to learn more about "Magic" and "Death and Burial," they may read beyond page 35. (A teacher should review the text ahead of time to make sure content seems appropriate for the dynamics of their classroom. For example, the images included in "Death and Burial" are of preserved human bodies, such as mummification.)

- Students may read large portions of text, or they may read shorter sections, assigned by the teacher. Whatever they read, give students the task of thinking about: What makes us human? Also, ask them to choose one sentence from their reading that stuck out to them, or a line that seemed important. They will share this later.

DISCUSSION AND CLOSING

- After students have skimmed through and/or read their assigned pages, have the class carry out a "select-a-sentence" exercise. In wraparound fashion, students will share a sentence from the reading that resonated with them. If time allows, encourage students to share why that particular sentence was powerful or seemed important. It is fine if sentences are repeated. Consider recording the students' sentences, such as jotting it down on the board, or typing it on a projected computer screen.
- Finally, perhaps while reviewing students' statements, ask the class to think about what makes us human. As we evolved, what kinds of actions, activities, or ways of thinking turned us into the people we are today? Encourage students to revisit the text, if needed. Guide the conversation so students begin to see the patterns of modern humans, such as making complex tools, to becoming people who are capable of abstract reasoning, such as becoming artists and musicians. Eventually, some groups of modern humans begin to build civilizations. In later lessons, we'll learn about the key factor(s) that led to this.

Extension Activities

SUGGESTIONS

- In this lesson, for the sake of simplicity, we provided a brief statement about bodily adaptations, specifically skin color. If desired, consider a follow-up lesson, perhaps led by a science teacher. For example, you may want to review, in greater depth, the evolution of skin colors. It is commonly believed that early modern humans all had darker skin colors, and as they moved into environments with not just "less sun" but with lower levels of UV radiation, skin color evolved in order for the body to absorb more vitamin D. Daniel Lieberman explains this in his book, *The Story of the Human Body*. In his introduction, he writes, "Fair skin, for example, does not protect against sunburns but is an adaptation to help cells below the skin's surface synthesize enough vitamin D in temperate habitats with low levels of ultraviolet radiation during the winter." (11) For more information, consider the following: "The Science of Skin Color," TED-Ed Video by Angela Koine Flynn, and "Skin Color Is An Illusion," TED-Ed Video by Nina Jablonski. Links below:
  - https://ed.ted.com/lessons/the-science-of-skin-color-angela-koine-flynn
  - https://www.ted.com/talks/nina_jablonski_breaks_the_illusion_of_skin_color?language=en

LESSON 2

HOW THE WORLD'S FIRST CIVILIZATIONS FORMED: A STORY OF GEOGRAPHY

Grade: 4 | Suggested Time: 60 minutes (teacher may decide to extend)
Unit: The Development of Civilization – How Geography Gave Some Populations a Head Start (Dispelling Myths of Racial Superiority)
Related Subject(s): Reading/Literacy; Social Studies/History/Geography

Background

OBJECTIVES

- To review key ideas and terms for geography. To expand geographical awareness.
- To understand how geography impacts and shapes culture, and conversely, how humans can impact or shape the environment.
- To discover and connect the relationship between the emergence of ancient civilizations to geographic advantage.
- To correlate farming (and irrigation) to the formation of civilization.
- To understand the difference between wants and needs.

MATERIALS

- *Ancient Civilizations* by DK Eyewitness Books.
- *Peoples of the Ancient World: Life In Ancient Mesopotamia* by Shilpa Mehta-Jones.
- Note-taking supplies for students (including Post-it notes, chart paper, and markers).

ESSENTIAL IDEA

- What did the world's first civilizations have in common? They all began near rivers. Why would rivers be helpful? What do they provide? They provide access to water, which was not only valuable to drink, it provided water for crops. Nearby rivers also helped to create rich soil and provided the water needed for irrigation systems, which led to the development of larger scale farming.
- In this lesson, students will be encouraged to think about the advantages and disadvantages of living in different places around the world. For a human to survive, what is absolutely necessary? In order for humans to develop a civilization, what geographical factors are essential?
- Finally, consider the questions: How did some humans evolve from being hunter-gatherers to becoming farmers and herders? What role did geography have in this transformation?

VOCABULARY

- Consider reviewing and/or defining the following geography terms (ideally, this should happen before the lesson to reserve time): rivers, deserts, forests, mountains, tundra, hills, desert, marsh, swamp, steppe, plateaus, plains, buttes, canyons, valleys, basins, continents, hemispheres, latitude, longitude, etc.
- Review additional keys terms such as: nomadic, sedentary, civilization, agriculture, surplus, urban, rural, suburban, etc. Ensure students understand the terms "hunter-gatherers" as well as "farmers and herders." Understanding the importance of water sources (i.e. rivers) and "irrigation" systems is also essential, as well as the existence of the Fertile Crescent.

Lesson Procedure

BACKGROUND

- When humans live as hunter-gatherers, foraging for food and hunting animals are primary concerns (please note that some pockets of humanity still live a hunter-gatherer lifestyle, and that for most of modern human existence, we lived in this manner). As hunter-gatherers, humans are dependent on seasons — often traveling to follow natural rhythms of plant cycles, animals' migration patterns, etc. In short, such people are nomadic.
- Tens of thousands of years ago, at various points in time, humans (who emerged in Africa) began to migrate around the world. Eventually, some of these groups of humans began to settle, or live a more sedentary lifestyle, once they realized seeds planted in the earth turned into grains. (Some historians and academics, such as Jared Diamond, assert that the development of agriculture was an accidental discovery.) Eventually, whether accidental or not, farming allowed some of these societies to build villages, and cities, and sometimes city-states and empires. Why did this happen in some parts of the world and not others? Many theories have been suggested, but historians generally agree that civilization begins when there is an abundant food source, creating surplus, or extra food. With extra food, more time can be devoted to other activities and to developing specialities, such as building more permanent structures, making pottery and textiles, and sometimes creating weapons, systems of writing and counting, governing bodies, etc. We call this civilization. And to build one, humans needed "geographical advantage."

OPENING

- Tell students that they are about to explore the next chapter in the story of humans: how we created civilizations. How did some humans go from being hunter-gatherers to people who build cities around the world?
- Before we explore our origins, let's review essential aspects for human survival, or wants versus needs. What are the basic needs all humans have? (The need for appropriate shelter, food, water, etc.).
- How do the majority of humans live now? Do we live beyond our "needs"? Many of us live in cities, on farms, in suburbs. Many of us wear clothes that we didn't make, shop online, use electricity, etc. But did we always do this? At some point in history, all of us were hunter-gatherers, roaming the earth, hunting game and searching for edible plants. This changed as some people became farmers and herders, and eventually city and empire builders. Along the way, some humans built civilizations. What were these civilizations? Why and how were they built? What did they have in common? Why did some people build civilizations, or urban centers, and not others? We'll unpack these questions in the next few lessons, but first let's focus on: What makes something a civilization?

GUIDED PRACTICE

- Ask students to name ancient civilizations (such as Mesopotamia, Egypt, Ancient China, the Indus Valley, etc.). If there's time, consider sharing visuals, such as photos of artifacts from early civilizations. More about these civilizations and cultures will be explored in an upcoming lesson. For now, ask: What marks these moments of time in these exact locations as a civilization?
- Share an explanation of "civilization" with the class. Consider using the one provided in *Ancient Civilizations*, in "First Steps to Civilization," the opening section:
  - "Historians call a society a 'civilization' if it is complex and organized on lots of levels. In a civilization, some people live in cities — and perform a range of jobs. Those in the countryside produce food in plenty, which provides enough wealth for city living. Everyone is ruled by a central government. As a civilization grows, people develop writing systems and new knowledge and skills, such as mathematics and law... Every civilization grows according to some pattern, but not in exactly the same way."
- As a class, adapt the text and students' ideas to create a working, more digestible, definition for civilization.
- For one more example, the book *Life In Ancient Mesopotamia* (which will be used later in this lesson) defines civilization as: "A group of people that shares common languages, some form of writing, advanced technology and science, and systems of government and religion."
  - For a more advanced conversation, consider also introducing the concept of specialized jobs and the formation of a social hierarchy as features of civilization.
- Tell students: Now that we have an idea of what an ancient civilization was, how did it start? Why did civilizations emerge in some places and not others? What was the one factor all civilizations needed in order to begin, survive, and even thrive? One way we can answer this is by studying what is widely considered one the world's first civilizations: Ancient Mesopotamia. Ask students if they have heard of Mesopotamia, and what they may know about it. Where was it? How long ago did it emerge?

- Tell students that in order to better understand Mesopotamia, we're going to read more about it. Distribute copies of *Peoples of the Ancient World: Life In Ancient Mesopotamia*. Introduce the text. Point out the cover, and the structure of the book, such as the table of contents in the front, and the glossary, index, and timeline in the back. Give students a few minutes to explore the book. Then guide them to the sections that discuss geography: "Between the Rivers," and "Mountains to Marshes."
- Their task is to take note of the geographical features that allowed or encouraged the emergence of Mesopotamia as a civilization.

GROUP WORK AND GALLERY WALK

- Students may work together to read and take note of geographical features that led to the development of civilization. Provide Post-it notes.
- After students have had the chance to craft a first draft of ideas on Post-it notes, task them with writing down their groups' ideas on chart paper. Again, they are to write about the geographical features (and other developments, like irrigation) that led to the development of civilization in the ancient Near East.
- When students are done, post their chart papers on the wall (gently call out time warnings, so students finish within time restraints). Tell students that we are going to do a "Gallery Walk," meaning we will walk around and silently read the ideas of other groups. Consider giving students index cards, so they can jot down ideas as they silently walk around and read group posters.

CLOSING

- Regroup as a class. Ask students to share ideas they had during the Gallery Walk.
- Were there similarities and differences among the groups' ideas? Discuss.
- Now that we have had a chance to learn more about one of the world's first civilizations, discuss how the role of geography impacted development. Ask students specifically about the importance of water and about fertile land and irrigation systems. Define irrigation.
- As a class, develop a paragraph to summarize the main idea. Consider posting this on a password-protected class blog and/or physically displaying this in the classroom, or in student folders, so students may access it later.
- A summary may read similar to this:
  - Ancient Mesopotamia had the Tigris and Euphrates Rivers, which were fed silt and soil from tributaries, or streams, from the Taurus and Zagros Mountains. Melting snow and rain caused rivers to overflow, leaving behind minerals, or silt, making the land rich and fertile, in other words, ripe for cultivation. Because this region had access to water sources, fertile land, and effectively used irrigation systems, the people of Mesopotamia developed some of the world's first known methods of successful farming on a wide scale (growing wheat, barley, and other crops). This area is referred to as the Fertile Crescent. Thus, geography provided the necessary resources for such a civilization to emerge.
- Ask students to think about geography one more time. Why did some pockets of the world emerge as civilizations and not others? The answer lies in geographical advantage. Some people lived in places more "conducive" for developing early forms of farming and eventual civilizations (as mentioned above). We will continue to unpack this core idea in upcoming lessons.

Extension Activities

SUGGESTIONS

- For an extension activity, consider providing students with physical maps of what Ancient Mesopotamia, or the region of the Near East, looked like thousands of years ago. It was more fertile. Using satellite photos of today, or Google Earth, compare photos of the region now. Note how it has become more arid; it's now mostly desert. How may that impact those who live there today? With a change in climate, can people grow the same crops? Properly irrigate water? Is there an adequate supply of water available? To enhance the lesson, consider co-teaching with science faculty.

LESSON 3

TRACING CROSS-CULTURAL PATTERNS IN THE DEVELOPMENT OF ANCIENT CIVILIZATIONS

Grade: 4 | Suggested Time: A Series of Class Time is Suggested
Unit: The Development of Civilization – How Geography Gave Some Populations a Head Start (Dispelling Myths of Racial Superiority)
Related Subject(s): Reading/Literacy; Social Studies/History/Geography

Background

OBJECTIVES

- To discover and connect the relationship between the emergence of ancient civilizations to geographic advantage.
- To explore the various cultural contributions made by ancient civilizations.
- To understand the development of culture.
- To understand that humans — even if from different cultures and ethnic/racial groups — are inherently similar.
- To conduct research and present their findings.

MATERIALS

- A core text about ancient civilizations is recommended. For a fourth grade audience, we suggest a photo/image-rich text, such as *Ancient Civilizations* by DK Eyewitness Books.
- List of resources that would aid student research:
- *Life in Ancient Mesopotamia* by Shilpa Mehta-Jones; *The Ancient World: Ancient Mesopotamia* by Allison Lassieur; *The Ancient Near Eastern World* by Amanda Podany and Marni McGee; *Ancient Egypt*, DK Eyewitness Books by George Hart; *Mummy*, DK Eyewitness Books by James Putnam; *Pyramid*, DK Eyewitness Books by James Putnam; *The Ancient Egyptian World* by Eric Cline; *Ancient China*, DK Eyewitness Books by Arthur Cotterell; *The Ancient Chinese World* by Terry Kleeman and Tracy Barrett; *Ancient China* by Mel Friedman; *The Ancient South Asian World* by Jonathan Mark Kenoyer and Kimberley Heuston; *Aztec, Inca, & Maya* by DK Publishing; *Mayas, Incas, and Aztecs: World Cultures Through Time (Primary Source Readers)* by Teacher Created Materials; *The Ancient Maya (True Books: Ancient Civilizations)* by Jackie Maloy; *The Inca Empire (True Books: Ancient Civilizations)* by Sandra Newman; *The Aztec Empire (True Books: Ancient Civilization)* by Sunita Apte; *The Ancient American World* by William Fash and Mary E. Lyons.
- Note-taking supplies for students.

ESSENTIAL IDEA

- Estimates range, but most historians agree that early farmers emerged in pockets of the world sometime between 10,000-5,000 BCE, in places like China, the Indus Valley, the Middle East, and Northern Africa. Why did some people begin farming and not others?
- How did early farming lead to the development of civilization? What innovations did many of these early civilizations have in common? How were they different?
- Please note that additional civilizations emerged at a later time. This lesson will focus on some of the civilizations that are widely considered some of the "first."

VOCABULARY

- Vocabulary words to consider: agriculture, civilization, culture, metallurgy, textile, weaponry, bronze (copper + tin), iron, ziggurat, pyramid, cuneiform, hieroglyphs, astronomy, compass, navigation, quipus or khipu, temperate, climate, etc.

Lesson Procedure

BACKGROUND

- Ancient civilizations had something in common — they started with farming, or the emergence of agriculture. After they developed efficient farming techniques, other patterns emerged, such as the construction of more permanent, larger structures for religious purposes, like temples and tombs. Many civilizations developed systems of writing, such a cuneiform and hieroglyphs. Depending on the natural resources of the region and/or their proximity to other civilizations, some populations manipulated metal (forming bronze using copper and tin, and later, developing iron, an even stronger material) to make tools and weapons. Some civilizations used the wheel, for both pottery and eventually transportation, including utilizing the wheel for warfare, such as the chariot. But how did this chain of events begin? Why did some groups of people develop civilizations and others did not? (Geographical advantage was key!)

OPENING

- Begin by revisiting the working definition of civilization developed in Lesson 2, which may be viewed as a society, or large group of people, that is complex and organized. In a civilization, the following patterns may be observed: some of the population lives in cities, different jobs are performed, there is a central government of kingship/priesthood. Often, trade, writing, and other technologies emerged.
- With this definition in mind, the following are considered to be some of the world's first civilizations, along with their approximate periods of "power" and influence: Ancient Mesopotamia, 3500 to 2000 BCE; Ancient Egypt, 3100 BCE to 30 BCE; Indus Valley Civilization, 2600 to 1800 BCE; America's First Civilizations, from Mesoamerica to Peru, 2600 to 200 BCE; and Ancient China, 2000 BCE to 220 CE. (Please note that these time periods are estimates from suggested texts; other texts may cite somewhat different dates.)
- Show and/or write the list of civilizations, so students may read and follow along. Consider displaying as a timeline.
- Ask students: How did these groups of people in these timeframes develop a civilization and other groups did not? What innovations did many of these early civilizations have in common? How were they different?
- We're going to begin exploring these key questions today (and hopefully over a few class periods, as students will need time to research).

GUIDED PRACTICE

- Introduce core text: *Ancient Civilizations* by DK Eyewitness Books. Point out the cover and the structure of the book, such as the table of contents in the front, and the glossary, index, and timeline in the back. Give students a few minutes to explore the book. Then ask them to find the page that summarizes: "First Steps to Civilization." Read the paragraph out loud. Give students time to read captions and look at pictures.
- What do they notice? (If it's not mentioned, note key ideas, such as "social hierarchies," the development of writing, job specialization, farming, etc.)
- Tell students that over the course of multiple periods of group work, they will read through and annotate various texts to better understand the patterns, or recurring innovations, of ancient civilizations. (We've listed resources in the Materials section that are suitable for students to use for research.)
- If this is the first time students are learning about ancient civilizations, at the very least, introduce the main idea of each ancient civilization, especially its location on earth, including nearby mountain ranges and rivers, approximate dates of the height of each empire, and other important highlights, including cultural and technological innovations.
- For the next few class periods, such as over the next few days, students should be divided into groups, focusing on one of the following topics: 1) Structures – Temples and Tombs, 2) Metal Tools and Weaponry, 3) Communication – Writing Systems, 4) Numbers, Calendars, and Navigation, and 5) The Wheel, Draft Animals, and Transportation.
- Provide students with resource books and note-taking materials (Post-it notes, folders, blank templates, etc.) to record observations.

GROUP WORK / RESEARCH (PROVIDE AMPLE TIME AS TEACHER SEE FITS)

- Students will note common patterns, tracing similarities among innovations. If there's time, consider having students share information as a formal presentation. We've provided key ideas below, to help the teacher guide student work:
  - **Structures** – Ziggurats of Mesopotamia; Great Pyramids of Giza, the tallest standing stone structures in the world; grid-pattern towns of Indus Valley, made of mud-brick, multiple-storied buildings with the world's first system of indoor plumbing; early pyramids built by the Olmecs, and pyramids and temples built by the Aztec, the Maya, and the Inca civilizations, which emerged at different times; building technology of China eventually led to development of the Great Wall, the longest wall in the world; etc.
  - **Metal Tools and Weaponry** – Bronze technology believed to have emerged in western Asia (approximately around 3600 BCE), moved into Europe (approximately around 2500 BCE); metal tips used for advanced farming equipment; metallurgy technology used to advance weaponry – iron sword, bronze crossbow hinge (gunpowder later discovered in China). This topic provides a good opportunity to introduce the Silk Road, and how weaponry innovations from China spread westward. (For more information, the following TED-Ed video is a great resource – "The Silk Road: Connecting the Ancient World Through Trade.")
  - **Writing Systems** – Cuneiform on clay tablets in Mesopotamia; hieroglyphics on papyrus and walls in Egypt, including Book of the Dead; Mayan glyphs carved into walls and recorded onto barkcloth; knotted strings of Peru, called quipu or kipas (purpose still unknown, and while not a clear "writing system," they indicate a form of recorded communication); ancient system of writing in the Indus Valley (still not deciphered); pictographic writing system of Shang Dynasty in China.
  - **Numbers, Calendars, and Navigation** – Astronomy concepts and various calendars were developed, such as the impressively accurate system of calendars developed by the Maya, as well as their base-20 number system and use of zero. Cross-culturally compare civilizations' belief systems around the sky, or their belief in many gods (polytheism) and connection to weather and nature. Navigation technology exemplified by China's later development of magnetic compass. Later Middle Eastern cultures built upon ancient and inherited systems of thought to expand algebra and geometry.
  - **Wheel, Draft Animals, and Transportation** – In many civilizations, the wheel was used for pottery, farming and chariots (by those who had access to draft animals, like horses and cattle). Early civilizations developed boat technology using natural resources, such as bitumen in the Middle East. Regions close to the Fertile Crescent had access to domesticated animals, which not only provided textiles (wool, leather) and food sources (milk, meat), they provided draft power, which made for a more productive farming experience. Horses provided military strength. (Students will learn more about the advantages of having domesticated animals, including horses, in upcoming lessons.)

REGROUP AND SHARE FINDINGS

- Students should share findings, perhaps as a formal presentation, using student-created posters, slides, etc.
- After sharing information, regroup as a class to have a discussion to better understand the patterns that emerged cross-culturally. What sort of innovations did these early civilizations produce? Why were they able to produce them? Recognized similarities and celebrate the differences.
- By tracing their steps backwards, we'll note that each region had geographical advantage (especially those in Eurasia — or Europe, Asia, and especially the Middle East and Northern Africa). For example, these ancient civilizations could not form without a reliable source of water, such as nearby rivers, and the fertile soil that accompanied these river valleys. Also, all of these civilizations are in a more "temperate" zone, which is more conducive to wide-scale farming.
- As a class, create a concept map that begins with farming, and traces the steps of the development of civilizations. Geography impacts human lives by dictating: What you can eat. What kinds of structures you can build. What kinds of weapons you can invent. A concept may appear similar to this:
  - Fertile soil + indigenous plants (cereal grains like wheat, barley, rice) + access to potable water (and irrigation techniques) + large animals that can be domesticated → successful farming → a surplus in food (and boom in the population) → specialized jobs → metalwork and construction projects → development of military → a civilization with greater military strength...
- Discuss this theme of geography and generalized patterns. Ask the class why other pockets of the world may not have developed large urban centers. Does this make them inferior? No. Does it make societies that developed urban centers superior? No. Essentially, it boils down to geographic "luck" and the steps humans took to begin manipulating their specific environment.

- Tell students that they will continue to explore this idea with even greater detail in upcoming lessons. In the meantime, consider posting a timeline or student-made posters to illustrate the emergence of ancient civilizations, and provide students with smaller copies to keep in a folder or binder. This may serve as a helpful reference for students.

Extension Activities

SUGGESTIONS

For a fun exploration of aspects of culture — cuisine, art, mathematics — consider the videos below:

- "A Brie(f) History of Cheese," TED-Ed Video by Paul S. Kindstedt. This video explores the "invention" of cheese and how many cultures adapted technology to make cheese in new ways. Available here: https://ed.ted.com/lessons/a-brie-f-history-of-cheese-paul-s-kindstedt
- "The Complex Geometry of Islamic Design," TED-Ed Video by Eric Broug. This video explores the geometric designs of the Golden Age of Islam. While it is not considered an "ancient" civilization, learning about Islamic Art may be engaging for students, such as how four-fold, five-fold, and six-fold patterns can be constructed with a compass and straightedge. Available here: https://ed.ted.com/lessons/the-complex-geometry-of-islamic-design-eric-broug

LESSON 4

HOW GEOGRAPHY GAVE SOME POPULATIONS A HEAD START: DOMESTICATED ANIMALS

Grade: 4 | Suggested Time: 60 minutes (teacher may decide to extend)
Unit: The Development of Civilization – How Geography Gave Some Populations a Head Start (Dispelling Myths of Racial Superiority)
Related Subject(s): Reading/Literacy; Social Studies/History/Geography

Background

OBJECTIVES

- To understand how geography impacts and shapes culture, and conversely, how humans can impact or shape the environment.
- To correlate farming to the formation of civilization.
- To learn that differences in agricultural strength is a result of geographical advantage, not solely intellect.
- To learn to view the story of history with a critical lens. To dismantle a Eurocentric view of history, which favors a concept of "inherent victors and losers."
- To expand one's perspective of history, to include a more holistic and informed view that dismantles stereotypes based on false ideas of inequality.
- To begin to understand the roots of inequality in the modern, post-colonial world.
- To explore the geographical benefits of indigenous animals that were capable of being domesticated.

MATERIALS AND RESOURCES

- *The Third Chimpanzee for Young People: On the Evolution and Future of the Human Animal (For Young People Series)* by Jared Diamond adapted by Rebecca Stefoff. Recommended reading: Chapter 12, "Accidental Conquerors," introduction and sections titled, "Geography and Civilization" and "Different Domestic Animals."
- Note-taking supplies for students.

ESSENTIAL IDEA

- The goal of this four-part discussion is to negate the Eurocentric idea that European powers colonized the world through a unique sense of courage or bravery and intellectual authority. Using the theory carefully engineered by Jared Diamond, introduce students to the concept that Europeans didn't colonize the world because of inherent "superiority," but, rather, because of geographic luck.
- This lesson, the first of four parts, will focus on the role that domesticated animals played in the development of earlier civilizations. Out of the 14 large animals that have been successfully domesticated, 13 are indigenous to the Middle East: goats, sheep, pigs, cows, horses, donkeys, Bactrian camels, Arabian camels, water buffalo, reindeer, yaks, mithans, and Bali cattle. (The llama is found in South America.) Not by coincidence, the Fertile Crescent, a region in the Middle East, is considered the birthplace of farming.

VOCABULARY

- Consider reviewing and/or defining the following terms (mostly from Diamond's text) ideally before the lesson: aboriginal, political, organization, agriculture, industry, racist, loathsome, genetic, superiority, technological, ecosystem, herding, manufacturing, centralized, resistance, domestication, breeding, territorial, instinct, revolutionized, cavalry, asset, extinction, descendants, cereals, starch, pollinate, sickles, row, hemisphere, axis, temperate, staple, self-pollinators, geography and biogeography.

Lesson Procedure

BACKGROUND

- According to physiologist, ecologist, geographer, biologist, and historian, Jared Diamond, "Geography and biogeography, which is the pattern of species and ecosystems as they are distributed across various regions, have been molding human lives for thousands of years." His argument asserts that the key to the development of civilization is the continental differences of geography and biogeography (or the native plants and animals of a particular region). With well-documented research, Diamond argues: "Europeans did not conquer the Americas and Australia because they had better genes. They conquered because they had worse germs (especially smallpox), more advanced technology (including weapons and ships), information storage through writing, and political organization. All these things stemmed from continental differences in geography."
- The first of four, the focus of this lesson will be the influence domesticated animals had on a human population's ability to create a civilization.

OPENING

- Ask students: Who are some of the "strongest" nations or regions on earth? Who dominated the world for the last few centuries? Why? How did Europeans become so powerful? Assumptions, such as intellect and bravery may arise, as the common belief is that Europeans ruled the world for the last few centuries because they were better explorers and innovators. Tell students that geography was the key to such imperial success. And that some populations — those in or near the Middle East (including Europe, which is east of the region — were born to a geographically advantageous part of the world.

GUIDED PRACTICE

- Revisit the concept map created in the previous lesson. As mentioned before, geography impacts human lives by dictating: what you can eat; what kinds of structures you can build; and what kinds of weapons you can invent. Display on the board, or provide students copies, a flowchart similar to the following:
    - ○ Fertile soil + indigenous plants (cereal grains like wheat, barley, rice) + access to potable water (and irrigation techniques) + large animals that can be domesticated → successful farming → a surplus in food (and boom in the population) → specialized jobs → metalwork and construction projects → development of military → a civilization with greater military strength → the ability to conquer → expansion of empire...
- Introduce the work and ideas of Jared Diamond. Based on scientific observation and historical analysis, Diamond argues: "Europeans did not conquer the Americas and Australia because they had better genes. They conquered because they had worse germs (especially smallpox), more advanced technology (including weapons and ships), information storage through writing, and political organization. All these things stemmed from continental differences in geography." Ask students: What does Diamond mean when he says differences in geography? What does geography provide? Answers may vary. Guide students to an understanding that before we developed vast trade networks, resources were limited to what was available locally, such as the native plants and animals. Today, we're going to focus on animals. Have all animals in the world been domesticated? (Domesticated = selective breeding of animals in captivity.) Of course not. Which animals have been domesticated successfully for long periods of time? Which of these animals are suitable to assist with farming? (Large animals provide draft power.)
- Tell students they will read a selection of *The Third Chimpanzee for Young People: On the Evolution and Future of the Human Animal (For Young People Series)*, the beginning of Chapter 12, "Accidental Conquerors."
- Before reading, set a clear purpose. Tell students that their task today is to note the role geography played in the development of civilization and conquering nations by focusing on the domestication of animals. We will read the introduction together, and then either independently, with a partner, or in small groups (the teacher may decide what is best), you will read the section titled, "Different Domestic Animals."
- As a class, begin reading the opening of Chapter 12, "Accidental Conquerors," as well as the first section titled, "Geography and Civilization." The teacher should read the first paragraph of the chapter, modeling "think-aloud" or annotation strategies for the text, such as highlighting key ideas, important facts, vocabulary, etc.

The teacher may read additional paragraphs out loud, asking students to turn and talk with a partner to share their thoughts about the author's purpose, main idea, etc. The teacher may circulate during "turn and talk" to check for students' understanding. For another method, consider guiding students so they practice "chunking" strategies while reading, or writing a word, or a few words, to capture the main idea of each paragraph. Summarize major points of the introduction as a class, while also reminding students that the text thus far is an introduction to Diamond's argument. Some big ideas were introduced in this reading! There is no need to memorize it now, as we will — over the course of four lessons — unpack this theory, one idea at a time, starting with domesticated animals.

INDEPENDENT AND/OR SMALL GROUP WORK

- In small groups, or independently, students will read and annotate a portion of the text, focusing on the section: "Different Domestic Animals."
- Remind students that as they read, they should look for ideas that support Diamond's argument, such as what types of animals were suitable for domestication, what kinds of characteristics did they have, where were these animals originally located, and how did these domesticated animals provide an advantage, etc.
- We've provided key ideas below, to help the teacher guide student work:
    - **"Different Domestic Animals"**
        - To be domesticated, animals need specific characteristics, such as being social, or living in packs or herds; the ability to "stand their ground," or not be vulnerable to a "flight" instinct; and the ability to reproduce in captivity. Some parts of the world had access to such animals, other areas only had animals that at best could be "tamed," but were incapable of being domesticated.
        - In the case of North America, for instance, bison could not be domesticated. In Africa, large game like rhinoceros could not be domesticated. At times, elephants could be temporarily tamed, but were not capable of long term domestication. Yet, in the Middle East — and, because of close proximity and similar climate zones, regions to the east and west of the Middle East — there were plenty of animals that could be domesticated. According to Diamond: "By around 4000 BC, people in western Eurasia already had the "Big Five" domestic livestock animals that are still the most common: sheep, goats, pigs, cows, and horses. East Asians domesticated four other cattle species that replace cows in various regions: yaks, water
        buffalo, gaur, and banteng. Together, these domestic animals provided food, power, and clothing. In addition, the horse was of enormous military value." Large animals suitable for domestication were not available in other places, like the Americas or Australia.
        - The domestication of these animals brought draft power, or the ability to farm on a scale much larger than human hands alone are capable of producing.

CLOSING

- Regroup as a class. To summarize, ask students to pick one piece of evidence from Diamond's argument that they found the most compelling. Have students share that piece of evidence, in a "wraparound" fashion, speaking one after another, such as row by row or table by table. Consider recording sentences (even repeats) to see what students found most interesting.

Extension Activities

SUGGESTIONS

- Consider reading the book *Guns, Germs, and Steel*, or viewing the TV series of the same name. It's a dense text/script. We've included notes below to provide more information to the teacher, to help guide class discussions throughout the unit.
    - **Biogeography (Available Plants and Animals) Were Key to Agricultural Success:**
        - Farming or plants and domesticated draft animals gave some civilizations a head start by providing food and draft power. Not only did animals provide textile (wool, leather) and food (milk, meat) benefits, they also provided a greater source of power than the human body alone, which increased farming production, creating a surplus of food. Indigenous to the Middle East, wheat and barley are widely considered to be the first seeds successfully cultivated.
        - The Fertile Crescent, or Middle East eventually known as Ancient Mesopotamia, was ripe for agricultural production. Out of the 14 large animals that have been successfully domesticated, 13 are indigenous to the Middle East: goats, sheep, pigs, cows, horses, donkeys, Bactrian camels, Arabian camels, water buffalo, reindeer, yaks, mithans, and Bali cattle. (The llama is found in South America.) This means that other geographical regions or continents only hosted wild game, or animals not suitable for domestication. Because of close proximity, modern-day Europe and China inherited these animals from the Middle East, giving them notable advantage and a head start toward global dominance. Again, the Americas and other parts of the world did not have access to these animals, until much later, such as during the era of colonialism.
    - **A Large Population Led to Specialized Jobs, Including Metalwork:**
        - Once a farming culture was established, the following were often developed and spread to nearby regions: metalworking technology, a writing system, and disease. With a greater population, more people could devote time to specialized jobs, such as metal working, which led to the discovery of bronze, iron, and eventually steel. Such innovations — steel and writing — gave civilizations an undeniable advantage, and stem from having early agricultural success and/or being in close proximity to the Middle East's Fertile Crescent. As mentioned before, isolated communities in the Americas, in the islands of Australia, or south of the Sahara desert did not benefit from the same trade and communication lines (i.e. Silk Road) that populations within latitude lines of the Middle East (current-day Europe and south and east Asia) received. Communities that developed metal work, often also developed systems of writing. With systems of writing, information technology could spread more efficiently, rapidly increasing cultural and military development. Evidently, almost every written language of Europe and Asia has "copied, adapted, or simply been inspired" by cuneiform. Thus, civilizations that arose in or near the Middle East had a head start developing military strength, compared to other societies around the world. This advantage eventually led to the global domination of Europe during the time of colonialism.

LESSON 5

HOW GEOGRAPHY GAVE SOME POPULATIONS A HEAD START: THE REVOLUTIONARY HORSE, DISEASE, AND THE RISE OF ACCIDENTAL CONQUERORS

Grade: 4 | Suggested Time: 60 minutes
Unit: The Development of Civilization – How Geography Gave Some Populations a Head Start (Dispelling Myths of Racial Superiority)
Related Subject(s): Reading/Literacy; Social Studies/History/Geography

Background

OBJECTIVES

- To understand how geography impacts and shapes culture, and conversely, how humans can impact or shape the environment.
- To correlate farming to the formation of civilization.
- To discover and connect the relationship between conquering other nations and having geographic advantage.
- To learn that differences in military strength is a result of geographical advantage, not solely intellect or heroic bravery.
- To learn to view the story of history with a critical lens. To dismantle a Eurocentric view of history, which favors a concept of "inherent victors and losers."
- To expand one's perspective of history, to include a more holistic and informed view that dismantles stereotypes based on false ideas of inequality.
- To begin to understand the roots of inequality in the modern, post-colonial world.
- To explore the revolutionary and "powerful" benefits of having horses and immunity to disease.

MATERIALS

- *The Third Chimpanzee for Young People: On the Evolution and Future of the Human Animal (For Young People Series)* by Jared Diamond adapted by Rebecca Stefoff. Recommended reading: Chapter 12, "Accidental Conquerors," the section(s) titled, "The Revolutionary Horse" and, for an extension, "Extinctions that Shaped History."
- For teacher use only (as the content of the article is written for an adult audience), we recommend reading, "The Arrow of Disease," an article in *Discover: Science for the Curious*, by Jared Diamond. Available here: http://discovermagazine.com/1992/oct/thearrowofdiseas137
- Note-taking supplies for students.

ESSENTIAL IDEA

- The goal of this four-part discussion is to negate the Eurocentric idea that European powers colonized the world through a unique sense of courage or bravery and intellectual authority. Using the theory carefully engineered by Jared Diamond, introduce students to the concept that Europeans didn't colonize the world because of inherent "superiority," but, rather, because of geographic luck.
- This lesson, the second of four parts, will focus on how the "revolutionary" horse and the presence of disease gave some populations an advantage over other populations around the world. Because of this, centuries later, some European powers emerged as "Accidental Conquerors," colonizing other parts of the world, which lacked a similar access to natural resources, or geographical luck.

VOCABULARY

- As already noted, for this series of lessons, students should be familiar with the following terms: aboriginal, political, organization, agriculture, industry, racist, loathsome, genetic, superiority, technological, ecosystem, herding, manufacturing, centralized, resistance, domestication, breeding, territorial, instinct, revolutionized, cavalry, asset, extinction, descendants, cereals, starch, pollinate, sickles, row, hemisphere, axis, temperate, staple, self-pollinators, geography and biogeography.

Lesson Procedure

BACKGROUND

- As mentioned in the previous lesson, physiologist, ecologist, geographer, biologist, and historian, Jared Diamond, argues that geography provided some human populations with agricultural and technological advancement. With well-documented research, Diamond argues: "Europeans did not conquer the Americas and Australia because they had better genes. They conquered because they had worse germs (especially smallpox), more advanced technology (including weapons and ships), information storage through writing, and political organization. All these things stemmed from continental differences in geography."
- The second of four, this lesson will focus on the role that horses and disease played in giving some populations a military advantage, including some European populations, who became ruthless, yet "accidental" conquerors in the time of colonialism.

OPENING

- Ask students about the previous lesson. What were some of the benefits domesticated animals brought to people of a particular region, such as the Middle East and Eurasia? What other animals do you think provided a great advantage? How about a great military advantage? The horse! Today, we are going to learn about the revolutionary advantages of horses. Also, we will learn more about the role of disease.

GUIDED PRACTICE

- Tell students they will read *The Third Chimpanzee for Young People: On the Evolution and Future of the Human Animal (For Young People Series)*, Chapter 12, "Accidental Conquerors," the section(s) titled, "The Revolutionary Horse" and, for an extension, "Extinctions that Shaped History."
- Before reading, set a clear purpose. Tell students that their task today is to note the ways in which horses and disease revolutionized warfare. Remind students to practice "chunking" strategies while reading, or writing a word, or a few words, to capture the main idea of each paragraph.
- The teacher should read the first paragraph of the chapter out loud, modeling "think-aloud" or annotation strategies for the text, such as highlighting key ideas, important facts, vocabulary, etc. Students will read the remainder of the assigned section.

INDEPENDENT AND/OR SMALL GROUP WORK

- In small groups, or independently, students will read and annotate a portion of the text, focusing on the section: "The Revolutionary Horse" (and, if desired, "Extinctions that Shaped History.") Remind students that as they read, they should look for ideas that support Diamond's argument, or how horses revolutionized warfare.
- We've provided key ideas below, to help the teacher guide student work:
    - **"The Revolutionary Horse"**
        - Horses have "high military value," and "revolutionized" warfare more than any other animal. As Diamond writes, "Hitched to battle chariots, horses became the unstoppable tanks of the ancient world."
        - Horses belong to an order of hoofed animals, called Perissodactyla. As Diamond writes: "Horses, tapirs, and rhinoceroses all belong to this order. Of the seventeen living species of Perissodactyla, all four tapirs and all five rhinos, plus five of the eight wild horse species, have never been domesticated. Africans or American Indians mounted on fighting rhinos would have trampled European invaders — but it never happened." Thus, whoever had access to the horse — a powerful animal capable of domestication — was at a military advantage and could more easily conquer other people.

    - With inventions like saddles, stirrups, and chariots, some societies went on to develop strong cavalries. Such cavalries were assets, which helped some societies conquer others, such as the Mongols, and eventually European powers. This is perhaps best illustrated with the example of how Spanish colonists conquered empires in the Americas. According to Diamond: "A few dozen horses helped the Spanish
      conquistadors Cortés and Pizarro, each leading only a few hundred Spanish fighters, overthrow the two most populated and advanced American states: the Aztec Empire in Mexico and the Inca Empire in South America." With no animals suitable for domestication (besides llamas), the people indigenous to the Americas could not respond with equal military strength.
- For another angle, consider adding the role that disease played in warfare. Though not specifically addressed in Diamond's text, *The Third Chimpanzee*, he does craft an argument for the potency of disease, in his other works, such as Guns, Germs, and Steel. We've provided key ideas below, if a teacher would like to incorporate this argument to classroom dialogue:
    - **The Surprise Weapon of Disease:**
        - Surprisingly, disease, or biological warfare, may arguably be the most successful, unintended factor of global domination and is also a product of geographic region. Societies that farmed, on a large scale, domesticated animals. Such animals often lived in close proximity to humans. When living in such close quarters, disease spreads between humans and animals. Disease, like smallpox and the flu, originate from animals. Even though epidemics spread through Asia and Europe, the offspring of survivors often carry genetic immunity. As history indicates, disease may have been the most "successful weapon" when Europe colonized the Americas. For example, when Europeans arrived in the Americas, it is estimated that 90-95 percent of Native Americans died immediately, from disease alone.
- Consider sharing portions of Diamond's article, "The Arrow of Disease," such as the following selections:
    - According to Diamond: "The major killers of humanity throughout our recent history — smallpox, flu, tuberculosis, malaria, plague, measles, and cholera — are all infectious diseases that arose from diseases of animals. Until World War II more victims of war died of microbes than of gunshot or sword wounds. All those military histories glorifying Alexander the Great and Napoleon ignore the ego-deflating truth: the winners of past wars were not necessarily those armies with the best generals and weapons, but those bearing the worst germs with which to smite their enemies."
    - As Diamond writes: "The grimmest example of the role of germs in history is ... the European conquest of the Americas that began with Columbus's voyage of 1492. Numerous as the Indian victims of the murderous Spanish conquistadores were, they were dwarfed in number by the victims of murderous Spanish microbes. These formidable conquerors killed an estimated 95 percent of the New World's pre-Columbian Indian population." (Consider addressing the use of the word "Indian." To clarify, in this curriculum we prefer the terms Native American and/or people indigenous to the Americas.)

CLOSING

- Regroup as a class. To summarize, ask students to think about how horses revolutionized warfare. How might the horse have given people of Eurasia a military advantage? (If more information is desired, consider the video referenced below, in the Extension Suggestions). If a teacher reviewed the role of disease, ask students to reflect on the devastating impact disease had on populations that did not domesticate animals. Ask students to write a brief response to the posed question(s). Give students time to reflect and revisit the text. When finished, ask for a few volunteers to share their writing.

Extension Activities

SUGGESTIONS

- To highlight some of the accomplishments other civilizations made, even without advantages like the horse, review the Inca Empire, before the arrival of the Spanish. Without wheeled vehicles and horses, or a known system of writing, or machines, the Inca Empire constructed an impressive infrastructure, including mountainside terraces, temples, and royal estates. For more information, watch "The Rise and Fall of the Inca Empire," TED-Ed Video by Gordon McEwan. Available here: https://ed.ted.com/lessons/the-rise-and-fall-of-the-inca-empire-gordon-mcewan
- To learn more about the advantages that arise with the domestication and use of the horse, consider watching "Horse Power Revolution," an episode of the history television series Big History. This episode highlights advantages of the horse beyond military might, such as how the horse impacted how many of us speak and what many of us wear.

LESSON 6

HOW GEOGRAPHY GAME SOME POPULATIONS A HEAD START: PLANT POWER

Grade: 4 | Suggested Time: 45-60 minutes
Unit: The Development of Civilization – How Geography Gave Some Populations a Head Start (Dispelling Myths of Racial Superiority)
Related Subject(s): Reading/Literacy; Social Studies/History/Geography

Background

OBJECTIVES

- To understand how geography impacts and shapes culture, and conversely, how humans can impact or shape the environment.
- To correlate farming to the formation of civilization.
- To expand one's perspective of history, to include a more holistic and informed view that dismantles stereotypes based on false ideas of inequality.
- To begin to understand the roots of inequality in the modern, post-colonial world.
- To explore the geographical benefits of certain indigenous plants.

MATERIALS

- *The Third Chimpanzee for Young People: On the Evolution and Future of the Human Animal (For Young People Series)* by Jared Diamond adapted by Rebecca Stefoff. Recommended reading: Chapter 12, "Accidental Conquerors," the section titled, "Plant Power."
- Note-taking supplies for students.

ESSENTIAL IDEA

- The goal of this four-part discussion is to negate the Eurocentric idea that European powers colonized the world through a unique sense of courage or bravery and intellectual authority. Using the theory carefully engineered by Jared Diamond, introduce students to the concept that Europeans didn't colonize the world because of inherent "superiority," but, rather, because of geographic luck.
- This lesson, the third of four parts, will focus on the role that plants had in giving early farming societies an advantage over other populations. Regions that had access to cereal grains, or grasses with "edible starchy seeds, such as barley kernels or wheat grains," were some of the first people to farm. These cereal grain crops, not available in all parts of the world, provided people of a particular region the ability to develop larger scale farming. As a result, populations and specialization soared, leading to the development of early, ancient civilizations, such as Mesopotamia in the region of the Middle East. It should be noted, like animals, only a small fraction of wild plant species are fit for domestication. Thus, plants, a feature of geography, gave some populations a head start.

VOCABULARY

- As already noted, for this series of lessons, students should be familiar with the following terms: aboriginal, political, organization, agriculture, industry, racist, loathsome, genetic, superiority, technological, ecosystem, herding, manufacturing, centralized, resistance, domestication, breeding, territorial, instinct, revolutionized, cavalry, asset, extinction, descendants, cereals, starch, pollinate, sickles, row, hemisphere, axis, temperate, staple, self-pollinators, geography and biogeography.

Lesson Procedure

BACKGROUND

- As mentioned in previous lessons, Jared Diamond, argues that geography provided some human populations with agricultural and technological advancement. With well-documented research, Diamond argues: "Europeans did not conquer the Americas and Australia because they had better genes. They conquered because they had worse germs (especially smallpox), more advanced technology (including weapons and ships), information storage through writing, and political organization. All these things stemmed from continental differences in geography."
- The third of four, this lesson will focus on the role that native plants hand in the ability for some populations to develop wide-scale farming methods, emerging as leaders of the agricultural revolution.

OPENING

- Ask students about the previous lesson. What were some of the advantages of having horses? How did horses provide military might to Eurasians? What was the role of disease?
- Beyond animals, indigenous plants also had a vital role in the development of large scale farming and the agricultural revolution. In today's lesson, we are going to explore which types of plants were suitable for domestication. Before we begin, do you have any guesses about which plants "planted the seeds" for the agricultural revolution?

GUIDED PRACTICE

- Tell students they will read *The Third Chimpanzee for Young People: On the Evolution and Future of the Human Animal (For Young People Series)*, Chapter 12, "Accidental Conquerors," the section titled, "Plant Power."
- Before reading, set a clear purpose. Tell students that their task today is to note the role plants had in the rise of civilizations. Remind students to practice "chunking" strategies while reading, or writing a word, or a few words, to capture the main idea of each paragraph.
- The teacher should read the first paragraph of the chapter out loud, modeling "think-aloud" or annotation strategies for the text, such as highlighting key ideas, important facts, vocabulary, etc. Students will read the remainder of the assigned section.

INDEPENDENT AND/OR SMALL GROUP WORK

- In small groups, or independently, students will read and annotate a portion of the text, focusing on the section: "Plant Power."
- Remind students that as they read, they should look for ideas that support Diamond's argument, such as what types of plants were suitable for domestication and which types were not suitable, what kind of characteristics domesticated plants had, where these plants were originally located, how farming provided an advantage, etc.
- We've provided key ideas below, to help the teacher guide student work:
    - **"Plant Power"**
        - The ability to feed a large population is an essential component for a civilization to emerge. As with animals, some plants are easier to domesticate than others. Some of these include self-pollinators like wheat.
        - As Diamond states: "Plant foods played a vital role in the rise of civilizations. In fact, most of the
        - calories consumed by the human race still come from plants — specifically, from cereals, which are grasses with edible starchy seeds, such as barley kernels or wheat grains. But as with animals, only
        - a tiny fraction of all wild plant species has proved suitable for domestication."
        - In Australia, there were no native plants "suitable for domestication." But some parts of the world did have natural resources that were ripe for farming. As Diamond writes: "In the Middle East and Europe, the grains were wheat, barley, oats, and rye. In China and Southeast Asia, they were rice, foxtail millet, and broomcorn millet. In Africa, south of the Sahara Desert, they were sorghum, pearl millet, and finger millet. But in the New World, only corn."
        - Why was corn not produced on a similar scale to wheat? The ancestor of corn, teosinte, was the crop available at this time. Compared to the easy harvesting qualities of wheat, which could be collected quickly with a slice of a sickle, corn was a less promising food plant. Its seeds had to be carefully planted one a time (while wheat seeds were "tossed") and the few kernels available on the ancient

"ear" of corn had to be scrapped or bitten off. In short, it took thousands of years of human intervention for corn to become the more desirable, recognizable crop we think of today.
- Regions that had wheat, on the other hand, were in a more advantageous position for wide-scale farming, and could better support population growth and the develop of specialized jobs, including feeding a military.

CLOSING

- Regroup as a class. To summarize, ask students to think about the main idea of the text. If they had to summarize Diamond's argument to someone younger, like a second grader, how would they explain it? What one question would they ask to make sure the student understood the main idea? Have students share their explanations and/or questions, in either a "wraparound" fashion, speaking one after another, or by writing it down on an index card, which could be collected and read out loud.

Extension Activities

SUGGESTIONS

- To learn more about the importance of cereal grains, consider having students conduct additional research. Cereal grains, or starch, still comprise a large portion of many diets around the world, such as wheat, rice, corn, sorghum, etc. Students could learn more about the various types of cereal grain eaten in different regions.

LESSON 7

HOW GEOGRAPHY GAVE SOME POPULATIONS A HEAD START: THE SHAPE OF CONTINENTS

Grade: 4 | Suggested Time: 45-60 minutes
Unit: The Development of Civilization – How Geography Gave Some Populations a Head Start (Dispelling Myths of Racial Superiority)
Related Subject(s): Reading/Literacy; Social Studies/History/Geography

Background

OBJECTIVES

- To understand how geography impacts and shapes culture, and conversely, how humans can impact or shape the environment.
- To correlate farming to the formation of civilization.
- To discover and connect the relationship between conquering other nations and having geographic advantage.
- To expand one's perspective of history, to include a more holistic and informed view that dismantles stereotypes based on false ideas of inequality.
- To begin to understand the roots of inequality in the modern, post-colonial world.
- To explore the role the shape of continents had on the development of farming and technological advantages (a comparison of the north-south axis and the east-west axis).

MATERIALS

- *The Third Chimpanzee for Young People: On the Evolution and Future of the Human Animal (For Young People Series)* by Jared Diamond adapted by Rebecca Stefoff. Recommended reading: Chapter 12, "Accidental Conquerors," the sections titled, "North-South versus East-West" and "Geography Sets the Ground Rules."
- Note-taking supplies for students.

ESSENTIAL IDEA

- The goal of this four-part discussion is to negate the Eurocentric idea that European powers colonized the world through a unique sense of courage or bravery and intellectual authority. Using the theory carefully engineered by Jared Diamond, introduce students to the concept that Europeans didn't colonize the world because of inherent "superiority," but, rather, because of geographic luck.
- This lesson, the fourth of four parts, will focus on the role that the shape of continents had on the ability for humans to trade and share information and resources.

VOCABULARY

- As already noted, for this series of lessons, students should be familiar with the following terms: aboriginal, political, organization, agriculture, industry, racist, loathsome, genetic, superiority, technological, ecosystem, herding, manufacturing, centralized, resistance, domestication, breeding, territorial, instinct, revolutionized, cavalry, asset, extinction, descendants, cereals, starch, pollinate, sickles, row, hemisphere, axis, temperate, staple, self-pollinators, geography and biogeography.

Lesson Procedure

BACKGROUND

- As mentioned in previous lessons, Jared Diamond, argues that geography provided some human populations with agricultural and technological advancement. With well-documented research, Diamond argues: "Europeans did not conquer the Americas and Australia because they had better genes. They conquered because they had worse germs (especially smallpox), more advanced technology (including weapons and ships), information storage through writing, and political organization. All these things stemmed from continental differences in geography."
- The fourth of four, this lesson will focus on the role that the shape of continents had on the ability for humans to trade and share information and resources.

OPENING

- Ask students about the previous lessons. What are some of the key ideas that you remember? Remind students that having access to certain plants and animals allowed some populations to develop agricultural methods and eventually civilization.
- Today, we're going to piece everything together, by talking about the role that the shape of continents had in the rise of civilization.

GUIDED PRACTICE

- Tell students they will read T*he Third Chimpanzee for Young People: On the Evolution and Future of the Human Animal (For Young People Series)*, Chapter 12, "Accidental Conquerors," the sections titled, "North-South versus East-West" and "Geography Sets the Ground Rules."
- Before reading, set a clear purpose. Tell students that their task today is to note how the shape of continents impacted the rise of civilization. For example, pay attention to references to latitude and climate. Remind students to practice "chunking" strategies while reading, or writing a word, or a few words, to capture the main idea of each paragraph.
- The teacher should read the first paragraph of the chapter out loud, modeling "think-aloud" or annotation strategies for the text, such as highlighting key ideas, important facts, vocabulary, etc. Students will read the remainder of the assigned section.

INDEPENDENT AND/OR SMALL GROUP WORK

- In small groups, or independently, students will read and annotate a portion of the text, focusing on the sections: "North-South versus East-West" and "Geography Sets the Ground Rules."
- We've provided key ideas below, to help the teacher guide student work:
    - **"North-South versus East-West"**
        - One of the final geographical factors that allowed some societies to transform into civilizations was their location on the globe, such as where they existed along lines of latitude, and even the shape of the continents (such as proximity and availability of coastline). Since the Middle East hosted the most abundant crops and animals that were capable of being domesticated, people in and/or near this region were at an advantage in regard to creating a civilization. According to Diamond: "The mainly north-south axis, or central line, of the New World made it hard for food plants to spread over large areas. The mainly east-west axis of the Old World made it easy." (Clarify Diamond's use of the terms "New World" and "Old World." In this curriculum, we generally refer to regions of the world by using the names of continents instead.)
        - Why was the "east-west" axis "easier" for plants (and animals) to spread across? Along similar lines of latitude, regions have similar climates. If a plant or animal spreads within a similar climate zone, it has a better chance of successfully transplanting. When looking at map of Eurasia, it's easy to note that Europe and Asia fall on an "east-west" axis. This suggests that they can more easily share plants and animals. As a result, Diamond asserts: "The ancient Romans grew wheat and barley from the Middle East, peaches and citrus fruits from China, cucumbers and sesame from India, and hemp and onions from central Asia, along with local oats and poppies. Horses that spread from the Middle East to West Africa revolutionized military tactics there. African sorghum and cotton reached India by 2000 BC, while bananas and yams from

tropical Southeast Asia crossed the Indian Ocean to enrich agriculture in tropical Africa."

- When looking at North and South America, the "height," or vertical span, of these continents illustrates how disparate their climate zones can be as they spread to such high degrees north and south. This "tall" continent shape makes it more difficult to successfully share plants and animals up and down the land mass. Diamond notes: "In the New World, the temperate zone of North America is isolated from the temperate zone of South America by thousands of miles of tropics, where temperate-zone species can't survive. The domesticated llama, alpaca, and guinea pig of the South American Andes never spread to Mexico or North America. Potatoes also failed to spread from the Andes to North America, while sunflowers never spread from North America to the Andes."

DISCUSSION AND CLOSING

- To close, regroup as a class. Ask students to reflect on the main idea and supporting details we've been discussing for the last four lessons. Using drawing strategies, like arrows and boxes, ask students to form a concept map to summarize Diamond's argument. How did plants, animals (including horses), and the shape of continents give some populations, such as those in the Middle East and/or Eurasia, a head start?
- Consider reading a summary to review the major ideas of the last four lessons. As a suggestion, we've included the following: When reviewing geography, it is no coincidence that the world's first known civilization arose in the Middle East. As the land bridge between North Africa and Eurasia, the Middle East had fertile soil and indigenous plants and animals that were ideal for domestication. The geographic neighbors of the east (Asia) and the west (Europe) benefited from the farming and technological success of the Middle East, through trade and communication. Other places, like the Americas, the islands of Australia, and many nations south of the nearly impenetrable Sahara desert, were isolated. As a result, they developed military strength at a slower pace. This is how, centuries later, Europeans were able to colonize other parts of the world. Thus, colonization was not a result of some form of "racial superiority." More accurately, some populations had what we may call "geographic luck" or advantage, especially when compared to others.

Extension Activities

SUGGESTIONS

To understand how the shapes of continents impacted trade, and the transmission of disease, including how the Bubonic plague of the 14th century "accidentally" strengthened European society, consider viewing the following:

- "The Silk Road: Connecting the Ancient World Through Trade," TED-Ed Video by Shannon Harris Castelo. Available here: https://ed.ted.com/lessons/the-silk-road-history-s-first-world-wide-web-shannon-harris-castelo
- "The Past, Present, and Future of the Bubonic Plague," TED-Ed Video by Sharon N. DeWitte." Available here: https://ed.ted.com/lessons/the-past-present-and-future-of-the-bubonic-plague-sharon-n-dewitte#watch

LESSON 8

THERE ARE NO "GENIUSES" OF HISTORY: RETELLING THE STORY OF GEOGRAPHICAL LUCK

Grade: 4 | Suggested Time: A Series of Class Time is Suggested
Unit: The Development of Civilization – How Geography Gave Some Populations a Head Start (Dispelling Myths of Racial Superiority)
Related Subject(s): Reading/Literacy; Social Studies/History/Geography

Background

OBJECTIVES

- To synthesize the information, concepts, and ideas woven throughout this unit.
- To conduct additional research about the ways geography gave some populations a head start.
- To use various presentation formats to share information with peers.

MATERIALS

- Access to books and materials used in previous lessons, as well as library resources.
- Art and writing material for students, including software to create presentations.

ESSENTIAL IDEA

- Throughout the unit, we introduced ideas to explain how geographic luck gave some groups, such as Eurasians, advantage over other groups of people, such as by having the following: access to animals and plants that could be domesticated, early interaction with disease, close proximity to the Fertile Crescent and/or Middle East, or whether they were on a north-south or east-west continental layout. For a culminating activity students will choose the most compelling aspect of the argument, will conduct research to understand more information, and will create presentations that tap into various learning modalities.
- If available, consider teaching this lesson in conjunction with the school librarian.

VOCABULARY

- At this point, students should be familiar with relevant terms. If new terms arise throughout their research, assist students as needed.

Lesson Procedure

BACKGROUND

- To summarize the unit, consider the following: Geography tells the story of history — as "success" was not dictated by social identity (race, gender, religious beliefs, etc.), nor innate ability. Since humans are inherently similar, one of the biggest differences among ancient communities was the geographic world they lived in, or the natural resources they had access to, such as the plants and animals. This biogeography created a domino effect of advantages for those near the Middle East and along lines of latitude (Europe, North Africa, and mainland Asia). History, in many ways, is a story of geography.

OPENING

- Remind students of the various ideas they've learned thus far. For instance, they learned about the roles animals, plants, and the shapes of continents had on the rise of civilization. Because of a particular set of geographical factors, some populations had an advantage over others.
- Today, our students are going to choose a topic that we've covered in this unit that they'd like to learn more about. Encourage students to pick something that resonates with them. Allow them to utilize a creative approach. For example, if they want to learn more about indigenous plants of Eurasia or the Americas, perhaps they can create a poster board to display relevant information. If they want to learn more about military advancement, perhaps they can research more about chariots, stirrups, or saddles and create miniature replicas. In short, encourage students to tap into various learning modalities for their presentations, including writing, singing, performance, the creation of diagrams or dioramas, etc.

GUIDED RESEARCH

- Ideally, with a school librarian, guide students through resources to conduct research about their topics. If using the library, how do we find physical books? How do we find and use online resources? Consider reviewing digital literacy ideas, such as safety parameters for online research. Provide students with support on gathering their information, such as how to store it and keep track of it (i.e. folder systems, notecards, online bibliography tools, etc.)

INDEPENDENT AND/OR GROUP WORK

- As students read through materials, provide them with either graphic organizers, templates, or guided questions to help them record what they've learned. Provide ample time for research, such as a few class periods.

PRESENTATIONS AND CLOSING

- Students will present their findings. If a larger celebration is desired, consider inviting parents/guardians ahead of time to view the presentations. We encourage the teacher, and the class as a whole, to also focus on what we have in common as humans. When given certain kinds of geographical factors, what kinds of cultural commonalities do many populations across the world share? Finally, remind students that no matter which society we are studying, all cultures should be valued.

Extension Activities

SUGGESTIONS

- For another culminating activity, consider having students generate questions and answers to create a game of *Jeopardy*.
- While many of these lessons have surveyed the role geographic luck has had on the development of civilizations, the lessons have not explored the downside of civilizations. For example, when many humans left a hunter-gatherer existence, a set of negative health and social consequences also emerged. What were they? For 90 to 95 percent of modern human existence, we lived as hunter-gatherers. What were the benefits of this type of lifestyle? Are there ideas we can adapt into our lives to improve the way we live in civilizations? To gain a better understanding of such ideas, consider reading, *The Third Chimpanzee for Young People* by Jared Diamond, Chapter 8, "Agriculture, For Better And Worse." We recommend keeping the conversation both honest and hopeful.