

The Rise of Civilization: A Simulated Experience

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“Cultivation to the mind is as necessary as food to the body.” Marcus Tullius Cicero

Introduction

Food is emotional and exciting, energizing and inspiring. Humans spend numerous hours each week acquiring, preparing, and eating their food. Like many others, I enjoy researching and selecting the best recipes to prepare the perfect dish. I enjoy baking and sharing desserts with my loved ones and seeing their reaction when they taste it for the first time. Eating is social and the basis of the human experience. Eating is common to all cultures across the globe. Food acquisition has shaped the world as we know it today. The role of food can be traced throughout history and it forms the basis of the Neolithic Revolution. Through my research, I discovered that food production has had the largest impact on societies, more than any other variable.

In my school district, we are required to follow the Delaware Recommended Curriculum. In social studies, most of the Delaware content standards have a unit made specifically for each standard to ensure the rigor of the classroom discussions, activities, and assessments. One of the sixth grade units, *Culture and Civilization*, teaches students that each location on the Earth has specific characteristics that make it unique and its uniqueness came from its development and history. The Delaware Recommended Curriculum *Culture and Civilization* unit is an excellent context for my proposed unit of study.¹

Rationale

To better meet the needs of my students I would like to add a bridge between the “culture” portion of the *Culture and Civilizations* unit and the “civilizations” portion of the unit. This will allow the students to gain an understanding that civilizations did not just appear; there was a lengthy process to get to the point of having the ability to sustain a large population in one area of the world for an extended amount of time. Currently, the students learn about the components of culture and then the traits of a civilization but there is little content in the area of the actual development of the first civilizations. I want students to understand that the lives of hunter gatherer bands differed greatly in their lifestyle than the individuals living in a civilization.

Demographics

Skyline Middle School serves a diverse population of students in grades six through eight. Located in the suburbs of Wilmington, Skyline Middle School feeds from Pike Creek and Wilmington in northern Delaware. Each grade level is divided into two interdisciplinary teams instructing approximately 140 students per team. Each team includes teachers in the areas of math, English, science, and social studies as well as special education math and English classes including “push in” inclusion teachers. I teach four sections of sixth grade social studies, one of which is an inclusion class where the special education teacher “pushes in” facilitating the learning of approximately 10 special education students in my general education class. The age range of students that I teach is ten through thirteen. The students I work with come from diverse backgrounds and cultural groups, including African American, Asian American, Caucasian, Hispanic, and low income. With such diversity it is imperative that my lessons are student-centered and employ a variety of teaching strategies as each class period is sixty minutes in length.

At the sixth grade level, the students come with varying knowledge related to the cultures and geography of the world. In the past when discussing different societies of the world, the students have many questions related to the particular societies. It is important to have a means for the students to answer said questions whether through Internet resources or books and articles.

Content

Introduction

Approximately 10,000 years ago humans began to develop skills in farming and animal domestication. The movement toward agriculture allowed these early people to develop larger populations and sedentary lifestyles that eventually led to civilizations.² Regions with greater resource endowments and favorable climatic conditions made the transition to raising crops and domesticating animals much earlier than regions with fewer resources and unfavorable climatic conditions. Agriculture provided the economic benefits for societies to develop into large civilizations. Unfortunately, farming was not easy; many times farming required longer and more strenuous labor hours than hunter gathering.⁶ The large scale change in human lifestyle is referred to as the Neolithic Revolution and is marked by human settlements, advances in technology, and increased population.² Early Neolithic villages were motivated by shared kinship of the community. Communities were dependent on the climate, natural resources, crops, and animals. The abundance of usable and nutrient rich resources determined the amount of time that a small village can thrive in one locality. The span of time that a society thrives in one locality determines if they may eventually develop into a civilization.⁴

With the use of technology such as plows, sickles, irrigation systems and the wheel, crop harvests became more plentiful and allowed greater numbers of people to exist

together. Larger populations led to specialization and thus economic advancement. With specialization, government, leadership, religion, trade, writing, and the arts were able to develop.² This type of economic specialization of labor led to the development of civilizations that are dependent upon a large population density over a sizable area for an extended amount of time. This pattern of development occurred independently throughout the world in places such as Mesopotamia, China, Mexico, and Peru.⁵

Early human societies are categorized by the tools they developed and used: The Stone Age, Bronze Age, and Iron Age. The Stone Age is broken into several periods, the Lower Paleolithic, Middle Paleolithic, Upper Paleolithic, and Neolithic. The Stone Age lasted from 2,000,000 to 12,000 B.C., where the Lower Paleolithic was from 2,000,000 to 70,000 B.C., Middle Paleolithic was from 70,000 to 35,000 B.C., the Upper Paleolithic was from 35,000 to 12,000 B.C., and the Neolithic Age was from 10,000 to 5,000 B.C. The Bronze Age was from about 8,000 to 800 B.C. and the Iron Age lasted from 12,000 to 550 B.C. The actual date for each period is dependent on the area and date by which they acquired the technology necessary to meet the specifications of each age.

Paleolithic Age

Early humans during the Paleolithic Age were hunter-gatherers; they had not developed the biogeographic knowledge necessary for successful agriculture. They depended on foraging the land for animals and plants to feed their small nomadic bands. These early humans are credited with creating and effectively using stone tools, controlling and producing fire, developing a simple language. These tools were constructed using stone, bone, and ivory and included hammers, knives, clubs, spears, and axes.²

Humans during the Paleolithic Age spent numerous hours of the day acquiring food. The hunting methods varied depending on the hunted animal and resources in the area. Animals would be trapped or hunted using spears. Early humans during this time gathered plants, firewood, and materials for creating tools and shelters. Sometimes the women and older children would spend extensive amounts of energy searching for resources. When food resources became sparse or climatic conditions too harsh, the early humans migrated to more lucrative locations. Changes in climatic conditions caused a change in early hunter-gatherer societies. As resources diminished they increased their flexibility, migrating to a new locality, eating a greater diversity of foods, and reducing the number of births.³

As hunter-gatherer populations increased, the Earth's resources became increasingly more difficult to acquire. With growing populations sharing the same regional resources, over-foraging was a problem. Hunter-gatherer bands living in proximity of each other began to fight for the resources. Hunter-gatherer bands with larger populations began to prevail as they had more strength to overtake a competing band of hunter-gatherers.³

Neolithic Age

As hunter-gathering productivity lessened, more individuals within a society adopted and devoted their time to farming. Over time, this led to societies built around a large farming sector, increasing the agricultural labor force. A decline in the living conditions of the environment led to a need to further develop farming methods. Hunter-gathering reduced the numbers of large game animals and depleted the food resources of the land.³ This new age, referred to as the Neolithic Age, marks the shift of some nomadic groups to becoming settled producer-raisers. They domesticated animals such as sheep and goats and had crops such as wheat and barley. A transition from hunter-gathering to producing-raising took thousands of years as methods and technologies were developed. More productive plant strains were developed and animal domestication methods were perfected over long periods.²

The movement toward agriculture was a process and not necessarily a deliberate “movement.” Some of the first farmers “discovered” plant domestication by accidentally spilling grains and they in turn sprouted and grew. There is not a distinct line between hunter-gatherer societies and early sedentary producer-raiser communities. Many producer-raiser communities supplemented their diets with plants and animals by foraging nearby lands. Even more contrasting, some sedentary societies did not even develop agriculture; their entire diet was fulfilled through hunter-gathering methods.⁶

The producer-raisers were able to more productively use the land to support a larger and growing population. The costs were high for these early groups as the adoption of successful agriculture required many more daily hours than the previous modality of hunter-gathering. Hunter-gatherers worked approximately less than six hours per day in search of food, whereas upon development of agriculture, approximately nine hours per day were spent on daily food production.⁷ Agriculture did not have the most positive outcomes when it was first adopted. Many early producer-raisers had smaller builds and lacked proper nutrition. The demanding labor of early farming resulted in shorter life spans, even shorter than the individuals living in hunter-gatherer bands.⁶ Early agriculture decreased the standard of living for generations of the first producer-raisers. In spite of these negative factors, societies still adopted this way of life, possibly due to pressures onset by sustaining a larger population and in turn having fewer available food sources.⁷

Farming may have been adopted by an early settlement in desperation. The early methods of farming came with a heavy tradeoff of time. Early farming communities faced quickly growing populations and thus had to increase their food production to meet their population's needs.³ The Neolithic Revolution was followed by a steep increase in birth rates. Some areas supported as many as 20 or more agriculturalists in the same area that had previously supported just one hunter-gatherer. Before the adoption of agriculture, many hunter-gatherer tribes conceived at the rate of replacement since a large

population was too burdensome to sustain. When the tribes adopted and developed agriculture, more children were conceived as the children were beneficial in food production. An older child could help in planting seeds and harvesting crops.⁷

Food production was based on labor, performed by adults and children, as well as shared resources in the community. A higher population translates to fewer shared resources per family. Children are completely dependent until they are old enough to help the community in food production. The cost of a child on his or her family is the amount of food they produce minus the food the child eats for sustenance. As a child ages they become more profitable to the family.⁷

Even some very successful hunter-gatherer bands adopted producing-raising as a means to better support a growing population and develop a non-farming labor force. This involved the development of trading by farmers and specialists. This trade compensated for the time lost in farming and developing specialized skills.³ Hunter-gatherers found the high crop yields and technological advances of adopting an agricultural lifestyle beneficial until their populations became too large and the wide distribution canceled the benefits of agriculture.⁷

The widespread practice of agriculture and animal domestication marked the Neolithic Age. Successful agriculture was dependent on botanical knowledge. Neolithic crops included wheat, millet, corn, barley, lentil, flax, chickpea, and pea. At first, wild seeds were planted, and then over time, more attention was given to selection of the best seed for the intended outcome.⁴ Early humans during the Neolithic Age learned strategies to cook crops that were difficult to digest in their raw form allowing more diversity in the foods eaten. Animals were domesticated through trial and error; specific animals were not suitable for farm life and early producer-raisers had to determine which animals best satisfy the community's needs. With the domestication of cereal crops and some animals, this knowledge spread and developed in different parts of the world as knowledgeable individuals migrated from one region to another.²

Neolithic technology included a spinning stick and loom for weaving animal and vegetable fibers, pottery for storing food, and dwellings. Small clusters of shelters were built around the storage facilities to allow for quick access and protection from the elements and outside invasions.²

Stable populations depend on the agricultural sector as their primary source of food but agriculture only comprises a small portion of the world's economic activities. Due to growing populations, once farming was adopted, it could not be reversed. The reliable food source of farming could not be given up to go back to past methods of hunting-gathering. The development of farming facilitated specialization among communities with a stable food supply. The specialization of individuals led to extensive technological

advances, eventually leading to the Industrial Revolution and the standard of living we enjoy today.³

The Bronze Age and Rise of Civilization

During the ninth century B.C., the climate of the Near East and Mediterranean became cooler than it had been in the past. This new climate allowed for greater food production that sustained larger populations. Clustering of small villages, towns, and settlements eventually developed into wider cities. As the cities grew, more people were attracted to the stability and opportunity and thus relocated to the city.²

New technologies during the Bronze Age included the use of copper and its alloy bronze to create weapons and tools. Other technological advances included irrigation systems, river dikes, agricultural tools such as the plow, and using animal power to complete tasks. Urban homes featured indoor plumbing, light wells to illuminate rooms, ventilation, and art. Architectural improvements included large religious temples and buildings that signified the ruler's wealth and power.² Systems of writing developed to aid in economic activities; individuals kept records of their agricultural products and trade arrangements. Writing helped in the management of these early cities as leaders could document the laws and rules of conduct within the city.²

Migration is a factor in the development of civilizations, as early producer-raisers took their agricultural skills, technology, and knowledge with them. Successful development and spread of societies today can be traced back to their transition to agriculture and their facility to maintain a larger population. Agricultural developments have led to more complex social organizations, political units, and technological developments.⁵ The make-up of early societies included children, adults, and elders, each providing an advantage and burden over the span of their lives. Hunter-gathering is an adult role in which the "stock" is shared with the elders and children of the community. With producer-raisers most members of society, children, adults, and elders, could participate in different aspects of the farming process. Adults decided to have children at a rate in which they could be supported as young children and later develop their human capital contributing to the foraging or farming process. More children ensure the abundance of food for parents as they move beyond the ability to forage or farm. Their children will provide for them when they become elders and unable to provide for themselves.³ Even with a large population, living in urban areas poses challenges; not only do the people have to eat, but waste must be disposed of efficiently to keep people healthy and free from disease.⁸

Leadership was established to maintain order, facilitate trade, and secure resources. Resources can be used directly, for making tools and weapons (tin, silver, iron, stone), or traded to acquire needed materials.⁸ Property rights were established by early societies, not by government but with rules, taboos, and prohibitions. Without property rights

individuals would be less likely to develop the land to its full potential. A lack of property rights slowed the development of technology and learning; individuals need to directly observe the benefits to become incentivized to further develop and improve.³

Civilizations exist on the boundary between chaos and frozen order. Due to the abundance of variables, long-term stability is near impossible. This lack of stability is the basis for governmental practices and decisions among world leaders.⁴ Even with the risks of destruction and overthrow, urban buildings were used to project status to surrounding establishments. Many early civilizations built stone or mud-brick walls around the city to protect its inhabitants and resources from invaders. Other buildings include monumental buildings for religious purposes and markets for buying and selling goods.⁸

The economic structure of Neolithic Villagers can be placed along a continuum. At one end, agricultural laborers were forced to give their crops to a group with higher social status, whereas at the other end laborers were motivated by monetary gain in which the monetary value of labor is equal to the time spent producing. In the center exists a barter system in which goods are traded for other goods deemed to be equivalent to the other's value or time amount of labor. For example, a full time cloth weaver must barter to obtain food and materials to consume. The barter system can be difficult to establish; it involves a "double coincidence of wants." Each bartering party must desire and find valuable what the other party has to offer. This is all determined by supply and demand. Individuals want goods and services that are valuable and, in a sense, represent the time devoted to producing the good or service they are borrowing. Over time barter "amounts" can be set but more typically remain flexible considering natural occurrences such as drought or flood.⁴

As the trade and barter system developed, new specializations also developed in response to the needs of the community. Transportation workers emerged to help move goods from one region to another. People began building boats and fishing equipment as producers were bartering more and producing more goods.

Conclusion

Generations of crop production paved the way for the development of advanced civilizations that many times included a system of record keeping, specialization, metal tools and weapons, a money system to facilitate trade, and political organizations. As producer-raisers moved and migrated they transferred their agricultural knowledge, technology, domesticated animals, and crops. The spread and sharing of ideas has helped to develop some of the earliest civilizations. Adoption of agriculture has had a strong influence on the wealth of societies today, as well as economic growth.⁵

Description of Unit

This unit of study will take approximately one week. The students will learn how groups of human societies developed into civilizations through a cooperative learning simulation. The unit is broken into three main sections, beginning with the Paleolithic Age, followed by the Neolithic Age, and ending with the rise of civilization. The students will be organized into small cooperative groups living out the roles of early humans during different time periods.

Teaching Strategies

The simulation method of teaching is effective with my population of students. In the past I have found that this method encourages higher rates of engagement, therefore the students learn at a much faster rate. The simulation method of instruction immerses the students in content rich vocabulary which, with enough exposure, is assimilated into their daily speech. Each of my classes consists of mixed ability students, both socially and academically. In one class period I have students enrolled in the honors program, students below grade level, students in the average ability range, students with 504 Plans (individualized plan outlining accommodations to ensure student learning), students on behavior contracts for possible alternative placement, and students with IEPs (individualized education plan that requires a specialized instruction and related services.)

To maximize the learning of the students I use cooperative learning. Admittedly, this is not always the easiest strategy to implement with so many different social and academic levels in one classroom. To facilitate learning of all students I use Elizabeth Cohen's "Multiple-Abilities Treatment." I design activities with multiple intelligences and academic abilities in mind. The simulation method of instruction allows for students with different strengths to be successful.

It is imperative that the students feel comfortable in working with their classmates and appropriate social interactions are modeled. To model appropriate behavior in the classroom, I frequently use questioning strategies. I ask questions such as, "What should your discussion look like and sound like?" "Who should be doing the discussing and how will it be done?" "What are you going to do if someone doesn't understand the information?" and "Tell me how the work will be completed in the time allotted."⁹ Group sizes should be kept small; in my classroom four seems to work best. Larger groups tend to promote more off-task behavior. In smaller groups, the students have greater responsibility to the group and meeting the learning objectives. The simulation described in this unit works best with four students in each group.

Unit Development Questions

Enduring Understandings

The students will understand that

- Civilizations developed in different parts of the world at different times.
- Humans make modifications to the natural environment to sustain life.
- Societies develop and change over time.

Essential Questions

- What are the variables that impact the development of a civilization and how do the variables have an impact on a society?
- How have humans altered the natural landscape to develop civilizations?

Lesson 1-I'm a what?!

Anticipatory Set

Many of my students are visual learners, they learn best when acquiring information through pictures, videos, and charts. Before beginning the simulation portion of this lesson, I suggest using pictures or a video clip to set the context for the students. There is an informative nine minute video segment on the *NOVA* website, titled “Last Human Standing: Chapter 3 of 5-On the Brink of Extinction,” that shows reenactments of early human interactions, hunting, and tool creation.¹⁰ Video clips are especially helpful for special needs students, it allows them to build their background knowledge and place the lesson’s activities in context. While looking at the pictures or after the video clip ask the students: “What can you tell about the lives of early humans by looking at the pictures?” and “What else would you like to know about early humans?”

Simulation

The first day of the simulation will require some introductory information. The mindset narrative below will help the students to understand their role throughout the simulation and set up the rules of the simulation.

Mindset Narrative: Read the following narrative to introduce your students to the simulation, “Imagine yourself living 10,000 years ago in a world that looked much different from our world today. The large buildings and roadways that we are familiar with don’t yet exist. People travel on foot as motorized forms of transportation have not been invented yet. There are no cell phones or fast food restaurants. There isn’t even a written language yet! In this simulation you will represent a member of a nomadic band of hunter-gatherers.

Your survival in this world depends on your ability to successfully hunt wild animals and gather nutrient-rich plants. The men in your nomadic band must work together to successfully hunt. Hunting wild animals requires patience, dedication, and skill. Gathering plants also requires knowledge; if you feed your population a poisonous plant the outcome could be disastrous. Be sure to choose your hunters and gatherers wisely.

You want to increase your population to have more community members live and grow with you. Members of the band of hunter-gatherers are assigned point values based on their ability to successfully gain food for the group. Adults are better suited to hunting animals and gathering plants so they have a higher point value. Elders are able to assist in the gathering and can offer their expertise so their point value is in the middle. The elders will be given “clue cards” to use throughout the game to represent their knowledge about the natural world. Hunter-gatherers had an average lifespan of about 35 years. The elders in this simulation are around 35 years of age. Children do not yet have the skills to hunt or gather and thus consume more than they are able to contribute. Children have the lowest point value. The choices your group makes throughout the simulation will determine the size of your population. The group with the highest population will win the civilization!”

Organize the students into groups of four. Using the “Rise of Civilization: Simulation Guide” (Activity 1.1), direct the students to name their nomadic band. Then tell the students to choose roles for members of their nomadic band. Each group must have at least one person in each category. Explain the roles of each individual to the students. Adult females in nomadic bands are responsible for gathering plants for the entire group to share. Adult males in nomadic bands are responsible for hunting wild animals for consumption by the entire group. Elders of the group provide their nomadic band with expertise in the areas of hunting, gathering, tool making, and fire. The children of the group are dependent on the other group members for their survival, they lack the ability to successfully hunt and gather until they grow older.

Have your students choose 15 more members by filling in Step 2 on the “Rise of Civilization: Simulation Guide” (Activity 1.1), only one copy per group is necessary. Explain to the students that they must have a balanced society, a group without children will not have longevity and a group without elders will lack in skill and expertise. Ensure that each group has a varied population. Distribute the population cards (Activity 1.2) according to the combination of adults, elders, and children that each group has selected. These cards will be used throughout the game to keep track of the population living in each group’s simulated society. As community members are gained you will give out the appropriate population cards and as they are lost you will take cards. Distribute the “Elder Clue Cards” (Activity 1.3) according to the number of elders each group has in their population. These cards represent the knowledge that the elder has gained throughout their lifetime. The cards can be used throughout the game to assist the students during the rounds of the game.

Simulation Questions & Challenges:

Scenario 1: Paleolithic Age

P1. You and your band of hunter-gatherers have limited time during the day. Would it be better to “learn to control fire” or “develop more tools”? Population outcome:

- control fire +1 adult
- develop more tools +1 adult

*Both are equally important skills for hunter-gatherers to develop.

NEWSFLASH! Shelter is critical for survival. Bonus Challenge: Pick a type of shelter to provide your family with protection from the elements. Every group will gain three children and three elders; shelter will keep the group healthier and provide protection from animals. Use the *Stone Age Habitats* webpage¹² for the selection of each family's shelter. I suggest limiting the students to four designs to pick from.

P2. You are hungry! It is time to start scouring the land for food. What would be a more beneficial animal to hunt, a deer or some rabbits? Population outcome:

- deer +1 elder
- rabbits +1 child

*The deer would feed more people.

NEWSFLASH! You have been living in this region for almost four months and the food is becoming scarce. Bonus Challenge: Each group sends one of their male hunter-gatherers from each group to a designated area in the room. The students will be challenged to pick up as many toothpicks from the floor in one minute. The student with the most toothpicks (representing food) wins an additional adult and elder.

P3. Food scarcity can threaten the survival of your people. Migration can also be risky. What will you and your band of hunter-gatherers do? Should you “stay and reduce your food intake” or “migrate to a new area”? Population outcome:

- stay and reduce your food intake -1 elder
- migrate to a new area +1 adult

*Bands of hunter-gatherers migrated when food became scarce, staying in one location without abundant food will negatively impact the health of your people.

NEWSFLASH! There are some mushrooms in the area. Which ones should you eat? Which ones should you avoid? Bonus Challenge: Send an elder from your group to find an edible mushroom. Successful mushroom selection will result in an additional two adults, unsuccessful selection will result in the reduction of one adult. Use the *Missouri Department of Conservation* website¹³ to select several types of mushrooms for the students to choose from. I suggest the green-spotted lepiota, elbow morel, hen of the woods, and amanitas.

P4. Wolves are in the area and pose a threat to your band of hunter-gatherers. Should you “build and tend a campfire” or “fight them off with spears”? Population outcome:

- build and tend a campfire +1 child

- fight them off with spears -1 adult

*Hunter-gatherers used fire to ward off predators; fighting a pack of wolves with a spear would be very risky.

Lesson Closure

Have your students reflect on the simulation by answering the following questions on the “Rise of Civilization: Reflections” worksheet (Activity 1.4). This would be most effective if students worked individually and then discussed as a full class. Ask the students, “What was life like for hunter-gatherer bands?” “What are the disadvantages to a nomadic lifestyle?” and “Why did hunter-gatherers live in small bands instead of creating larger populations?”

Lesson 2 - I’m a farmer now!

Anticipatory Set

Read the following statements to your students and instruct them to give a “thumbs up” if they agree and “thumbs down” if they disagree. The students can record their answers on the “What do you think?” worksheet (Activity 2.1). Ask the students to explain why they agree or disagree with each of the answers but do not tell them the correct answer. The students will revisit the statements at the end of the lesson to make revisions to their initial ideas.

- The movement toward agriculture allowed early people to live in larger populations. (agree)
- The adoption of agriculture meant that early people had a much easier life than living as hunter-gatherers. (disagree)
- Communities were dependent on the climate, natural resources, crops, and animals.
- (agree)
- With the use of technology such as plows, irrigation systems, and the wheel, crop harvests became more plentiful. (agree)

Simulation Questions & Challenges:

Scenario 2: Neolithic Age

Mindset Narrative: Share the following narrative with your students, “As hunter-gatherer societies increased their population they needed a way to feed their people effectively. Hunter-gatherer societies slowly incorporated more farming products as part of their diet. Over time they learned to domesticate animals such as sheep and goats and produced crops such as wheat and barley. A transition from hunting and gathering to producing crops and raising animals took thousands of years as methods and technologies were

developed. Imagine yourself as a Neolithic farmer living in a small village just beginning to hone your skills.”

NEWSFLASH! The Neolithic Revolution has just begun and now you have a whole new set of problems. **Bonus Challenge:** The groups will work together cooperatively to create a marshmallow tower to represent the shelters of the Neolithic Age. The group with the tallest marshmallow tower will gain two adults and one child.

N1. You have learned some agricultural skills and techniques from you parents and grandparents. Which crop would be most effective in feeding your population; wheat or grapes? Population outcome:

- wheat +2 children
- grapes -1 child

*Wheat is a cereal crop that is fast growing and high in carbohydrates whereas grapes take three years to yield after planting and full production may take a decade.

N2. You are ready to add some animals to your farm. Which animal would be the best domesticated farm animal; zebras or goats? Population outcome:

- zebras -1 elder
- goats +2 adults

*The zebra is skittish and not a good candidate for domestication whereas the goat has a playful and intelligent demeanor, perfect for domestication.

N3. You have a few fields of wheat to harvest. This will not be easy without a plow and an animal to pull it. Which animal would be better for pulling the plow; a llama or a cow? Population outcome:

- llama -1 child
- cow +3 children

*The llama cannot pull plows, it is a not a load-bearing animal whereas the cow is able to pull the plow.

NEWSFLASH! It has been a harsh summer season. Your crops are on the verge of drying up due to the lack of rain in your area. **Bonus Challenge:** one student from each group will participate in a “water challenge.” The students will be required to balance a ping-pong ball on a spoon and walk with it across the room. The groups that have a successful representative will earn an additional three children. This represents the struggle in bringing water to the fields of crops.

N4. To combat the drought you need to water your crops. You have two options; “create animal skin bags to carry water from the river to your fields” or “dig canals to allow the water to flow to your fields.” Population outcome:

- create animal skin bags to carry water from the river to your fields +1 adult
- dig canals to allow the water to flow to your fields +2 adults

*Both methods would benefit your crops and keep them growing, but the canal system would have benefits that continue into the future.

N5. Your society of producer-raisers has been getting invaded by an outside nomadic group looking for tools and weapons. Which method would you rather use to protect your goods; “build a wall around the community” or “station adults with bows and arrows around the community?” Population outcome:

- build a wall around the community +2 adults
- station adults with bows and arrows around the community +1 adult

*Both methods would benefit your community but a wall would protect your city for years to come. (Note the groups who chose the option to build a wall for use later in the game.)

Lesson Closure

First, revisit the agree/disagree activity from the beginning of the lesson. Discuss each statement and how the student’s ideas changed after the lesson. Next, have your students reflect on the simulation by answering the following questions on the “Rise of Civilization: Reflections” worksheet (Activity 2.2). This would be most effective if students worked individually and then discussed as a full class. Ask your students, “How did agriculture change the way people lived?” and “Would you rather have lived during the Paleolithic Age or the Neolithic Age?”

Lesson 3: I’m specializing!

Anticipatory Set

Have the students categorize the statements into either Paleolithic Age or Neolithic Age using the graphic organizer (Activity 3.1). Then ask the students what they think would be in a category if “rise of civilizations” was added to the graphic organizer.

Simulation Questions & Challenges:

Scenario 3: Civilization Rises

Mindset Narrative: “The successful development of agriculture allowed larger groups of people to exist together. Agricultural developments led to more complex societies with social organizations, leadership and government, and specialized workers.”

C1. Some members of your civilization have heard from a group of nomads that a neighboring civilization has invented a loom for weaving cloth from wool. This group has been known to be violent and wary of strangers, should you face the risk and trade? Population outcome:

- trade +1 adult
- no trade+1 child

*Trading with new people could be risky but many times the benefits outweighed the costs. Societies benefitted when acquiring new technology and ideas from others.

NEWSFLASH! One of the children in your civilization is learning to make steel from iron ore. Bonus Challenge: To prove his or her specialized skills you must have one child from your group place the steps of steel production in order. If your child is successful you will earn an elder and two children. Use the steps on the *How to do Things* website.¹⁴ (Note the groups who chose the option to build a wall for use later in the game.)

NEWSFLASH! Nomadic barbarians wielding steel weapons have invaded your civilization on horses. If your civilization built a wall or successfully created steel you survived the attack. If you lacked a fortification to keep invaders out or don't have steel weapons to fight back you will lose two adults.

C2. The location of resources is important to the development of your civilization. Which map represents the best organization of land for your civilization? (Activity 3.2)

Population outcome:

- Map B +1 adult and 3 children
- Maps A or C -1 adult and 1 child

*B is the best choice; A and C have homes located in close proximity to domesticated animals. If you chose A or C, members of your population have been infected with smallpox. Smallpox is an infection transmitted to humans from animals. Your homes were located too close to the animal pens.

NEWSFLASH! Writing was essential in record keeping and communication. Bonus Challenge: The Ancient Sumerians were credited with making the first writing system. Match the following pictographs from 3200 BC to their corresponding wedge-shaped pictographs from 1000 BC. Groups with more than three correct matches will gain two adults and one child. Use the first and last columns on the chart of Sumerian cuneiform found on the *Ancient Scripts* website.¹⁵

Lesson Closure

Next, have your students reflect on the simulation by answering the following questions on the "Rise of Civilization: Reflections" worksheet (Activity 3.3). This would be most effective if students worked individually and then discussed as a full class. Ask your students, "What was life like in the earliest civilizations?" and "How did civilizations develop?"

Unit Closure

Upon completion of the simulation, the students will be required to research and compare three civilizations, focusing on the “variables” found in each civilization. The simulation will focus on the variables described in Jared Diamond’s book, *Guns, Germs, and Steel*. The variables include crops, animals, germs, technology, and geography. Crops located in a particular area are the predominate indicator of success in a region. For the development of civilization, crops must be nutritious and yield quickly in large quantities to feed a growing population. Some animals are more suitable for productive domestication, these animals are typically ones who produce offspring within the first few years of its life, reproduce in captivity, eat plants as opposed to meat, and include the ability to establish a dominance-subordinate relationship with humans. Highly populated societies face the risk of widespread disease; many diseases originate from living in proximity to livestock. Advanced technology, such as metal and steel production, allowed some societies to have an advantage over others. Societies with the understanding of the processes involved in using metals were able to create tools and weapons therefore increasing their productivity. The latitude and east-west spread of the continents had an impact on the development and dispersion of agricultural crops. Continents with an east-west land structure, namely Eurasia, have an advantage in crop production due to the similarity in climate across the continent.⁶

The students will use encyclopedias and Internet resources to meet the objectives of the research assignment. They will utilize a variety of sources to identify the variables presented in Jared Diamond’s book *Guns, Germs, and Steel*. The students will collect information on three civilizations and compare their data on each civilization to one another.

Implementing District Standards

This simulation and research project will connect Delaware geography standard 3 with the Common Core English language arts: history/social studies standard RH. 6-8.1. The Delaware geography standard provides the content base, the students are required to identify and explain cultural regions of the world. The Common Core standard will provide the method in which the students will gather the information as it requires students to cite specific textual evidence to support analysis of primary and secondary sources. Using the Common Core standard, the students will “read like a historian” finding facts to support and extend what they learned during the simulation.¹

Delaware Content Standard- Geography Standard Three 6-8:
Students will identify and explain the major cultural patterns of human activity in the world’s sub-regions.

Common Core-English Language Arts Standards: History/Social Studies: Grades 6-8

CCSS.ELA-Literacy.RH.6-8.1 Cite specific textual evidence to support analysis of primary and secondary sources.

Notes

1. Delaware Department of Education, "Delaware Recommended Curriculum." Last modified April 21, 2009. Accessed August 4, 2012. http://www.doe.k12.de.us/infosuites/staff/ci/content_areas/social_studies/standards/pilot_6-8.shtml.

2. Frankforter, A. Daniel, and William M. Spellman. Pearson Higher Education, "The West: A narrative history, Volume 2: Since 1400, Third Edition." Last modified Dec 27, 2011. Accessed November 8, 2012. <http://instructors.coursesmart.com/0205233635>.

3. Weisdorf, Jacob L. 2005. "From Foraging To Farming: Explaining The Neolithic Revolution". *Journal of Economic Surveys*. 19 (4): 561-586.

4. Maisels, Charles Keith. 1999. *Early civilizations of the old world: the formative histories of Egypt, the Levant, Mesopotamia, India, and China*. London: Routledge.

5. Putterman, Louis. 2008. "Agriculture, Diffusion and Development: Ripple Effects of the Neolithic Revolution". *Economica*. 75 (300): 729-748.

6. *Diamond, Jared M. 1998. Guns, germs, and steel: the fates of human societies*. New York: W.W. Norton & Co.

7. Guzman, R.A., and J. Weisdorf. 2011. "The Neolithic Revolution from a price theoretic perspective". *Journal of Development Economics*. 96 (2): 209-219.

8. Freeman, Charles. 1996. *Egypt, Greece, and Rome: civilizations of the ancient Mediterranean*. Oxford: Oxford University Press.

9. Cohen, Elizabeth G. 1998. "Making Cooperative Learning Equitable". *Educational Leadership*. 56 (1): 18-21.

10. <http://www.pbs.org/wgbh/nova/evolution/becoming-human.html#becominghuman-part-3>

11. Common Core <http://www.corestandards.org/ELA-Literacy/RH/6-8>

12. <http://www.afghanchamber.com/history/stoneages.htm>

13. <http://mdc.mo.gov/discover-nature/field-guide/search-basic?fg-keys=Mushrooms>

14. <http://www.howtodothings.com/home-garden/how-to-make-steel>

15. <http://www.ancientscripts.com/sumerian.html>

Resources for Teacher Background

Clark, David P. 2010. *Germs, Genes, & Civilization: How Epidemics Shaped Who We Are Today*. Upper Saddle River, N.J.: FT Press.

“Talk of The Nation” Interview with Jared Diamond National Public Radio. *Jared Diamond: The Rise and Fall of Civilizations*. Recorded July 11, 2005. NPR. July 11, 2005. Web, <http://www.npr.org/templates/story/story.php?storyId=4738014>.

Resources for Students

DK Publishing, First. *World History Atlas*. NY: DK Adult, 2005. Lion Television, "Gun, Germs, and Steel." Last modified 2005. Accessed August 3, 2012. <http://www.pbs.org/gunsgermssteel/index.html>.

McGrath, Jane. “*How Animal Domestication Works*” April 14, 2008. HowStuffWorks.com. <http://science.howstuffworks.com/environmental/life/zoology/all-about-animals/animal-domestication.htm>

Roberts, J.M. *Prehistory and the First Civilizations*. NY: Oxford University Press, Inc., 1999.

Smithsonian National Museum of Natural History: Timeline Interactive. <http://humanorigins.si.edu/evidence/human-evolution-timeline-interactive> Stearns, Peter N. *World History in Documents: A Comparative Reader*. NY: New York University Press, 2008.

Appendix

Activity 1.1

| The Rise of Civilization: Simulation Guide | | |
|---|--|---|
| Step 1: Name Your Group | | |
| | | |
| Step 2: Assign Roles | | |
| Role | Description | Student Playing Role |
| Male Adult | Adult males in nomadic bands are responsible for hunting wild animals for the consumption of the entire group. | |
| Female Adult | Adult females in nomadic bands are responsible for gathering plants for the entire group to share. | |
| Male/Female Elder | Elders of the group provide their nomadic band with expertise in the areas of hunting, gathering, tool making, and fire. | |
| Male/Female Child | The children of the group are dependent on the other group members for their survival, they lack the ability to successfully hunt and gather until they grow older. | |
| Step 3: Member Selection | | |
| Other Members of Nomadic Group | Choose 15 more members (You must have a balanced society, a group without children will not have longevity and a group without elders will lack in skill and expertise.) | ____ Male Adults ____ Female Adults ____ Male Elders ____ Female Elders ____ Male Children ____ Female Children total _____ |

| Round 1: Paleolithic Age | | |
|------------------------------------|------------------------|-------------------------|
| Population | Number of Cards | Number of Points |
| Adult-5 points | | |
| Elder-3 points | | |
| Child-2 points | | |
| Total Points: | | |
| Round 2: Neolithic Age | | |
| Population | Number of Cards | Number of Points |
| Adult-5 points | | |
| Elder-3 points | | |
| Child-2 points | | |
| Total Points: | | |
| Round 3: Civilization | | |
| Population | Number of Cards | Number of Points |
| Adult-5 points | | |
| Elder-3 points | | |
| Child-2 points | | |
| Total Points: | | |
| Total for all three rounds: | | |

Activity 1.2

| Population Cards | | | | |
|-------------------------|-------|-------|-------|-------|
| Adult | Adult | Adult | Adult | Adult |
| Elder | Elder | Elder | Elder | Elder |

| | | | | |
|-------|-------|-------|-------|-------|
| Child | Child | Child | Child | Child |
|-------|-------|-------|-------|-------|

Activity 1.3



















| Sample Elder Clue Cards |
|--|
| The green-spored lepiota mushroom is known to cause violent stomach upset, which may include vomiting and severe stomach pain, sometimes requiring hospitalization. |
| Many mushrooms in the Amanitas genus contain the psychoactive chemicals ibotenic acid and muscimol. Many are toxic to humans. They are best known for their distinctive appearance (bright reds and yellows with white spots). |
| Wheat is a cereal crop that is fast growing and high in carbohydrates. Surpluses of wheat can be easily stored for times when food is not as abundant. |
| The llama was domesticated due to its intelligence and diet. When llamas become irritated they become very difficult to manage as they are stubborn and may even hiss or kick. |
| A system of canals allowed early farmers to bring water from the nearby rivers to their crops. It allowed for more productive farming which led to higher crop yields. |

Activity 1.4

| |
|---|
| <p>Name _____ Date _____</p> <p style="text-align: center;">The Rise of Civilization: Reflections</p> <p><i>Scenario 1: Paleolithic Age</i></p> <p>1. What was life like for hunter-gatherer bands?</p> <p>_____</p> <p>_____</p> <p>2. What are the disadvantages to a nomadic lifestyle?</p> <p>_____</p> <p>_____</p> |
|---|

3. Why did hunter-gatherers live in small bands instead of creating larger populations?

Activity 2.1

| What do you think? | | Before Lesson | After Lesson |
|---|---|---|---|
| Name _____ | | | |
| Read each statement. Circle  if you agree and if  you disagree. | | | |
| 1 | The movement toward agriculture allowed early people to live in larger populations. |   |   |
| 2 | The adoption of agriculture meant that early people had a much easier life than living as hunter-gatherers. |   |   |
| 3 | Communities were dependent on the climate, natural resources, crops, and animals. |   |   |
| 4 | With the use of technology such as plows, irrigation systems, and the wheel, crop harvests became more plentiful. |   |   |

Activity 2.2

Name _____ Date _____

The Rise of Civilization: Reflections

Scenario 2: Neolithic Age

1. How did agriculture change the way people lived?

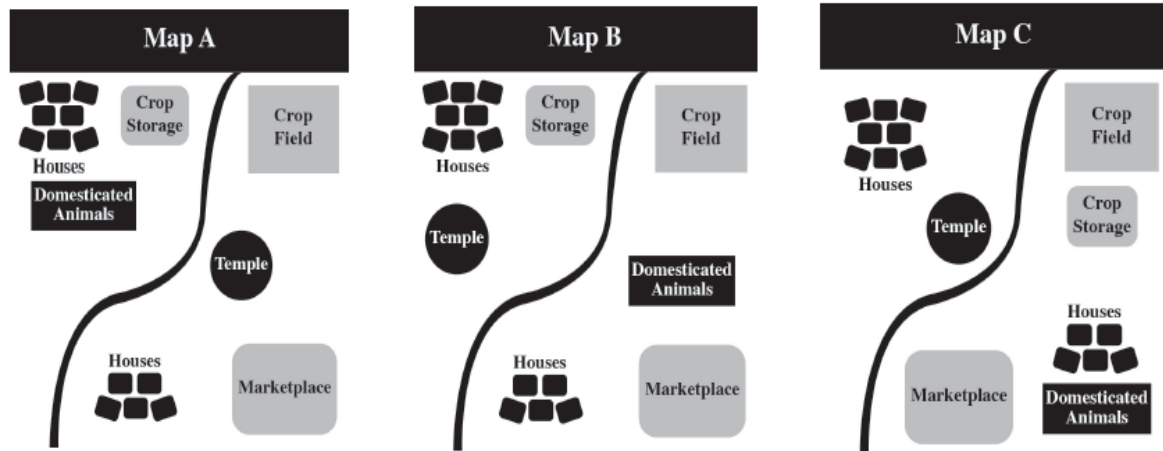
2. Would you rather have lived during the Paleolithic Age or the Neolithic Age? Support your answer with a specific example.

Activity 3.1

| Paleolithic Age | Neolithic Age |
|------------------------|----------------------|
| | |
| | |
| | |

| | |
|--|---|
| 1. These early people depended on foraging the land for animals and plants to feed their small nomadic band. | 4. These early people are credited with creating stone tools, controlling and producing fire, and developing a simple language. |
| 2. These early people learned to domesticate animals such as sheep, goats, and llamas. | 5. The development of farming allowed individuals within the community to specialize in areas such as carpentry, weaving, and government. |
| 3. These early people may have begun farming crops like wheat, barley, millet, corn, and flax to support a growing population. | 6. As resources became scarce, these early humans migrated to a new location. |

Activity 3.2



Activity 3.3

Name _____ Date _____

The Rise of Civilization: Reflections

Scenario 3: Civilization Rises

1. What was life like in the earliest civilizations?

2. How did civilizations develop?

Curriculum Unit
Title

The Rise of Civilization: A Simulated Experience

Author

April Higgins

KEY LEARNING, ENDURING UNDERSTANDING, ETC.

The students will understand that

- civilizations developed in different parts of the world at different times
- humans make modifications to the natural environment to sustain life
- societies develop and change over time

ESSENTIAL QUESTION(S) for the UNIT

- What are the variables that impact the development of a civilization and how do the variables impact a society?
- How have humans altered the natural landscape to develop civilizations?

CONCEPT A

CONCEPT B

CONCEPT C

Hunter-Gatherer Lifestyles

Agricultural Revolution

The Rise of Civilization

ESSENTIAL QUESTIONS A

ESSENTIAL QUESTIONS B

ESSENTIAL QUESTIONS C

What was life like for hunter-gatherer bands?

How can agriculture advance a society?

How and why did civilizations form?

VOCABULARY A

VOCABULARY B

VOCABULARY C

Paleolithic Age
band
technology

Neolithic Age
agriculture
domestication

surplus
specialization
society

variables
productivity
organization

ADDITIONAL INFORMATION/MATERIAL/TEXT/FILM/RESOURCES

Resources for Teachers and Students

- Lion Television, "Gun, Germs, and Steel." Last modified 2005. Accessed August 3, 2012. <http://www.pbs.org/gunsgermsteel/index.html>.
- McGrath, Jane. "How Animal Domestication Works" April 14, 2008. HowStuffWorks.com. <http://science.howstuffworks.com/environmental/life/zoology/all-about-animals/animal-domestication.htm>
- Roberts, J.M. *Prehistory and the First Civilizations*. NY: Oxford University Press, Inc., 1999.