Indus River Valley Civilization

Video: https://youtu.be/Yd00anJT9jA

Standard: Grade 6; Social Studies
Strand: History
Topic: Early Civilizations
Content Statement: Early civilizations (India, Egypt, China and Mesopotamia) with unique governments, economic systems, social structures, religions, technologies and agricultural practices and products flourished as a result of favorable geographic characteristics. The cultural practices and products of these early civilizations can be used to help understand the Eastern Hemisphere today.

Standard: Grade 6; Social Studies
Strand: Geography
Topic: Human Systems
Content Statement: Variations among physical environments within the Eastern Hemisphere influence human activities. Human activities also alter the physical environment.

Standard: Grade 6; Social Studies
Strand: Geography
Topic: Spacial Thinking and Skills
Content Statement: Globes and other geographic tools can be used to gather, process and report information about people, places and environments. Cartographers decide which information to include and how it is displayed.

Standard: Grade 6; Social Studies
Strand: Geography
Topic: Spatial Thinking and Skills
Content Statement: Latitude and longitude can be used to identify absolute location.

Standard: Grade 6; Social Studies
Strand: Geography
Topic: Human Systems
Content Statement: Political, environmental, social and economic factors cause people, products and ideas to move from place to place in the Eastern Hemisphere in the past and today.

Standard: Grade 6; Mathematics (Common Core State Standards)
Strand: Ratios and Proportional Relationships
Topic: Understand ratio concepts and use ratio reasoning to solve problems
Content Statement: Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Standard: Grade 6; English Language Arts (Common Core State Standards)
Strand: Reading Literature
Topic: Key Ideas and Details
Content Statement: Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

Standard: Grade 6; English Language Arts (Common Core State Standards)
Strand: Writing
Topic: Research to Build and Present Knowledge
Content Statement: Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.

Introduction

The Indus River Valley Civilization originated along the Indus River in what is Pakistan and northwest India today from 2500-17000 B.C.E., respectfully. The Indus River Valley is unique in the fact that the civilization is not comprised of large monuments or tombs. Rather, the Indus River Valley Civilization is famous for its large, well-planned cities. Of the 1,052 cities and settlements that have been found in the civilization, the Harappa and Mohenjo-daro are two of the largest cities of their time.

While the exact governing system is unknown, the quality of urban planning indicates that the Indus communities were controlled by effective governments. As being the first to develop urban planning, the Indus River Valley Civilization is also known to have the world's first known urban sanitation systems. The Indus people were fully aware of the principles of health and sanitation and believed in sophisticated sanitation and drainage systems in their cities. The high priority given to water and sanitation by the Indus people has been linked to religions, such as Hinduism, which emphasizes ritual washing.

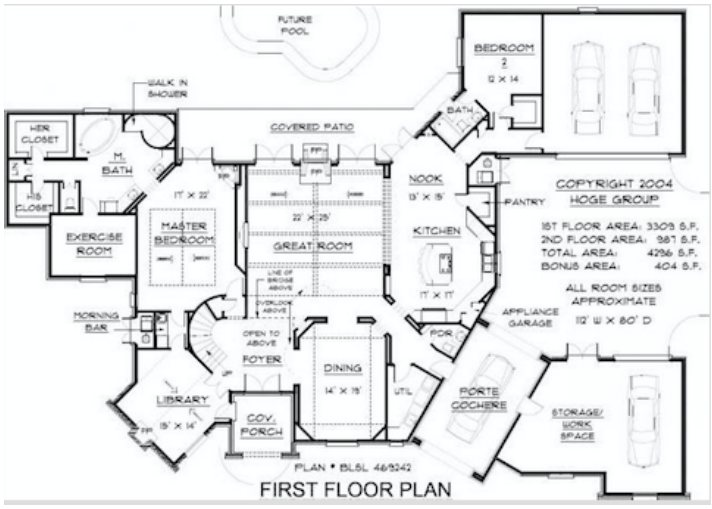
Although some houses were larger than other, elite buildings, such as mansions and palaces were missing from Indus cities. All homes also had access to water and drainage facilities, which gives the impression of a civilization where even the poor had a high standard of living. This information makes the social classes in this civilization difficult to fully understand. It is know, however, that the Indus people were traders and artisans, possessed advanced architecture and construction techniques, and achieved great accuracy in measuring length, mass, and time.

Through the Artifact Box that I have created you will find objects that represent the agricultural practices and products, economic systems, math/science contributions, technology, religious practices, and geological features of the Indus River Valley Civilization. The artifacts chosen symbolize an essential aspect of the Indus River Valley that will support students' thinking and understanding of this civilization as well as the 5 themes of geography.

Artifacts

1. **A Blueprint**

   Advanced Urban Culture (Agricultural Practices and Products): The Indus River Valley Civilization is famous for its large and well-planned cities. There are over 1,052 cities and settlements within the Indus River Valley Civilization, but amongst them are Harappa and Mohenjo-daro, which are two of the largest of that time. The Indus civilization is recognized to be the first to develop urban planning. This is apparent in the streets of Mohenjo-daro and Harappa, which were laid out in a perfect grid pattern. The street layout showed that the Indus Valley people had an understanding of traffic, which is evident in the rounded corners to easily allow for the turning of carts and the city being divided into 12 blocks. The cities were a mile square with well-built defensive outer walls facing each direction and consisted of a few large buildings including a citadel, a large bath,



living quarters, flat-roofed brick houses, and administrative or religious centers enclosing meeting halls and granaries. The people of the Indus Valley Civilization did not build massive monuments like their contemporaries, nor did they devote large amounts of time and resources to the rich, the supernatural, and the dead. Instead, the Indus Valley civilization built functional and hygienic building plans that kept the civilization alive and in no apparent crisis with housing its people. Due to the city culture, life of the Indus Valley civilization was supported by extensive agricultural production and commerce, including trade with other civilizations. It is clear that stability, regularity, and conservatism are the trademarks for the cities built in the Indus River Valley Civilization.

Teaching Ideas: **(Human-Environmental Interaction, Place, Location)**
The teacher can support students' thinking of Human-Environmental Interaction by describing the blueprint and how that has changed the environment in which she lives. What does a blueprint show? How is a blueprint helpful in urban planning? The teacher and students can then have a discussion about how early civilizations modified, depended, and adapted to their environments. The students can create concept maps of each. The students could make their own blueprints of early civilizations displaying the human/environment interactions. Using the blueprints that the students created they can also analyze and add the physical and human characteristics of that location. The physical characteristics of a location include any natural formations (mountains, lakes, rivers, beaches, topography, and animal and plant life of a place). Human characteristics pertain to man-made structures (land use and architecture) as well as population and cultural descriptions of the area (religion, food, transportation, and communication networks). Exploring the early civilization even deeper, the students can add the relative and absolute locations of their blueprint of their early civilizations. Students could describe the latitude and longitude, hemispheres, distances from other early civilizations, etc.

2. **Blink Game Cards**

Seals (Economic Systems/Agricultural Practices and Products): Named the best-known artifact of the Indus river valley, seals were an essential aspect of trade to this civilization. Seals were carved out of stone and then fired in order to make them more durable. Seals are both unique in kind and quality, illustrating a variety of animals, such as elephants, tigers, rhinoceros, and antelopes. The most common seal created in the Indus River Valley Civilization is square and consisted of a set of symbols along the top and bottom with an animal in the center. The symbols on the seal are thought to form the script of the Indus language. When pressed into soft clay the seal left an impression of the picture and writing that was carved into the stone. When the clay hardened, it was used as a label of trade transactions indicating the identity of traders, markers or factories. Seals were also used to seal the mouths of jars and to create clay tags for sacks of traded goods, pots and baskets. The seals used in the Indus river valley also indicate that the people in this civilization wrote the first line from right to left, the second line from left to right, and so on.

Teaching Idea: **(Movement)**
The Blink Cards represent the different seals the Indus Valley people used in their civilization. To support students' thinking about seals and their role in trading, the teacher will pass out one card to each student. Each card is one of a kind with a different shape(s), color of the shape(s), and number of shape(s). The teacher will then split up the class into different civilization groups (Inca, Mayan, Aztecs, etc.) and ask them to come up with items and/or ideas their civilization exports and imports. The Blink Card they received will act as their seal when trading with other civilizations. When students trade their items and/or ideas they will use their seals as a label of a trade transactions indicating their identity.

3. **Measuring Cups**

A System of Uniform Weights and Measures (Math/Science Contribution): The Indus River Valley Civilization were among the first to develop a system of uniform weights and measures. In particular, the people of the civilization achieved great accuracy in measuring length, mass, volume and time. Their measurements were extremely precise with their smallest length measuring approximately 1.704 mm, which was the smallest ever recorded on the scale of the Bronze Age. Engineers and traders from the Indus valley used a combination of binary and decimal measurements based on the number series: 0.05, 0.1, 0.2, 0.5, 1, 2, 5, 10, 20, 50, 100, 200, and 500. For example, masses for weighing were shaped as hexahedrons and were based on the recurrence of multiples of the three value number series: 1, 2, 5 …, which can be made larger using 10, 20, 50 or smaller using 0.1, 0.2, 0.5. Another example of how the Indus valley showed development in measuring was their invention of a thick ring-like shell with four slits each in two margins, which served as a compass to measure angles on plane surfaces or in the horizon in multiples of 40 degrees, up to 360 degrees. In conclusion, the uniform weight and measure system greatly supported the Indus river valley civilization. Merchants used smaller weight to measure luxury goods while larger weights were used for buying bulkier items, such as food grains. Having a standard system across the entire civilization proved how the carefully measured cities and structures done by the Indus people could withstand over the years and not fail due to poor construction techniques. This uniform unit of measurement was used in the planning of many Indus cities such as Lothal, Harappa, and Mohenjo-daro. Overall, the system of uniform weights and measures that the Indus people created helped build stable and reliable cities as well as supported their trade economy with the successful construction of boats, carts, and measurement of goods.

Teaching Idea: **(Movement, Human-Environmental Interaction)**
The teacher and students will have a discussion about the measurement system that they use in the United States, such as length (inch, foot, yard, mile), volume (tablespoon, cup, fluid ounce, pint,

quart, gallon), and weight (ounce, pound). The teacher can use the measuring cups to support students' thinking. The teacher and students will create an anchor chart of their ideas. The teacher will pass out individual whiteboards to each student and ask them to think of a time when they measured or weighed something (measuring the length of a room in feet, measuring a cup of milk when baking, weighing themselves at the doctors office). The teacher will rotate around the room looking at their experiences. The teacher will ask the students to share their measuring/weighing experiences with their tables. To better understand the importance of a uniform system of weights and measures as well as precise measurements within that system the teacher will challenge students to solve the following dilemma: Each of your groups is a different city in the Indus River Valley Civilization. It is your job to create a religious meeting hall building made out of brick in your city. However, the only form of measurement you have is a piece of string that is 2 feet long. It is important to remember that the Indus people expect all the buildings in their civilizations to be the same size. Each group will have 15 minutes to create a drawing of your building on a piece of chart paper. After the 15 minutes the students will display their drawing in the front of the room. The teacher and students will discuss their thinking as well as difficulties they ran into throughout the process of creating their buildings. The students will then work in their groups to research how the Indus people develop a system of uniform weights and measures. In particular, the students will focus on ways the Indus people depended, modified, and/or adapted to their environment to support their uniform system and how the Indus people had a standard system across the entire civilization.

4. **Toilet Paper**

<u>Sewage Drainage Systems and Sanitation Practices (Technologies/ Economic Systems/ Religion)</u>: The Indus River Valley Civilization is recognized to be the first to develop urban planning, which also includes the world's first known urban sanitation systems. The Indus people were fully aware of the principles of health and sanitation and believed in sophisticated sanitation and drainage systems in their cities. Within the city, the people got water from wells. Within many households, rooms had facilities in which waste water was directed to covered drains that outlined main streets. Bathing was also common and sanitation was highly valued in Indus civilizations. People would clean themselves standing up by pouring water on top of themselves, just like a shower. The water would drain into a hole in the floor where Limestone was used to assure the pipes were stabile and would not leak. Towns people used a bath that was located in the center of the city. These baths were approximately 49 feet long, 28 feet wide and 8 feet deep. The wall of the bath was made of burnt brick to prevent water from leaking and was drained regular to assure its cleanliness. The water was drained using a long pipe that led outside the city. Although these systems helped keep the Indus civilization sanitary the most unique aspect of urban planning was the underground drainage system. The main sewer of the underground drainage systems was 1.5 meters deep and 91 cm across and connected to many north-south and east-west sewers. The sewer dropped at regular intervals in order to act as an automatic cleaning device. Homes that had baths and drains also emptied through soakage jars that were underground. Although little is know about religion in the Indus River Valley Civilization the existence of public baths, such as the "great bath" found in the city of Mohenjo-Daro, highly suggests that the Indus people believed in ritual bathing.

Teaching Ideas: **(Movement/ Place)**
The teacher will support students' understanding of the sewage drainage systems and sanitation practices in the Indus River Valley Civilization by leading a discussion about the drainage systems and ways in which students are sanitary in their community, at school, at home, etc. The students will first brainstorm ideas in their small groups. The students and teacher will then sit on the floor in a circle. The teacher will begin this discussion by saying one way in which our school is sanitary is through the use of toilet paper. The teacher will then roll the toilet paper to another student who will add information that their group brainstormed about the drainage systems or ways in which students are sanitary in their community, at school, at home, etc. The students will then work in their small groups to research the sewage drainage systems and sanitation practices in the Indus River Valley Civilization. Students will analyze the movement of the sewage drainage systems and sanitation practices throughout India and the world. Students will also analyze how the sewage drainage systems and sanitation practices describe the Indus people and their culture. Students will then create a broadcasting video, commercial or skit to explain their findings pertaining to the above questions as well as to compare and contrast sewage drainage systems and sanitation practices of the Indus River Valley Civilization to the community they live in.

5. **A Globe**

Geological Features/Characteristics: The climate and environment in the area surrounding the Indus river valley civilization was extremely diverse. The region varied from mountain ranges to desert, to wooded highlands. The Indus people dealt with unpredictable periods of drought, floods, earthquakes, monsoons, and changes in river courses. The Himalayas blocked the northern part of India, which created isolation and caused the Indus civilizations to create their own culture. This natural barrier forced the civilizations to find creative ways to trade. Mountain ranges and surrounding oceans also played a role in monsoonal rainfall that the Indus people experienced. However, the varying geological and environmental features provided a large amount of raw resources deposits, which allowed the Indus people to be exporters of many items such as ivory. The Indus River Valley Civilization was dependent on the environment for survival, which greatly impacted their cultural development. This influence is seen in the Indus people's beliefs of worshipping natural elements such as animals, fertility gods, and sacred animals.

Teaching Ideas: **(Region)**
The teacher and students can begin with a discussion about the importance of globes and maps. The students will work in small groups to create a list of different information you can learn from globes and maps. After the students create a list on chart paper the teacher and students will come together as a class and discuss their ideas. The teacher and students will create a class list combining their ideas about important information globes and maps can tell you, such as where a country is, where a state is, where a city is, the different hemispheres, what countries are near each other, geological features of a location (mountain ranges, rivers, oceans, etc.), how big countries are, the latitude and longitude of a location, and the ordinal directions of different locations. After creating the class list

the teacher will pass out globes and maps to the small groups. Each group will analyze the maps and globes to identify geological features of India that would affect the Indus River Valley Civilization. Instead of assigning the Indus River Valley Civilization to each group, the students could also complete a jigsaw activity and analyze different civilizations. The students could then act as broadcasters and create a video explaining the different geological features of a region and how that could affect their civilization. After hearing each video created by the different groups the students would write a journal entry explaining which region they would start a civilization in and why.

Resources

A chronological history of the modern metric system (to 2008) [PDF]. (n.d.). from http://www.metricationmatters.com/docs/MetricationTimeline.pdf

Geography of Early Indian Civilization - Video & Lesson Transcript | Study.com. (n.d.). Retrieved July 12, 2016, from http://study.com/academy/lesson/geography-of-early-indian-civilization.html#transcriptHeader

Health and Sanitation. (n.d.). Retrieved July 12, 2016, from http://indus-valley-civ.weebly.com/health-and-sanitation.html

History of Measurement Systems in India. (n.d.). Retrieved July 12, 2016, from http://www.liquisearch.com/history_of_measurement_systems_in_india

Indus Valley Civilization. (n.d.). Retrieved July 12, 2016, from http://www.newworldencyclopedia.org/entry/Indus_Valley_Civilization

Indus Valley Civilization. (n.d.). Retrieved July 12, 2016, from http://www.newworldencyclopedia.org/entry/Indus_Valley_Civilization

Sewer History: Photos and Graphics. (n.d.). Retrieved July 12, 2016, from http://www.sewerhistory.org/grfx/wh_region/indus1.htm

Teaching History with 100 Objects - Seals from the Indus Valley. (n.d.). Retrieved July 12, 2016, from http://www.teachinghistory100.org/objects/about_the_object/indus_valley_seals

The Editors of Encyclopædia Britannica. (n.d.). Indus civilization. Retrieved July 12, 2016, from https://www.britannica.com/topic/Indus-civilization

The History of Ancient India. (n.d.). Retrieved July 12, 2016, from http://www.ancient.eu/article/294/

The Role of the Physical Environment on Religion and Technology. (n.d.). Retrieved July 12, 2016, from https://ant3145indusvalley.wikispaces.com/The Role of the Physical Environment on Religion and Technology

TimeMaps. (n.d.). Retrieved July 12, 2016, from http://www.timemaps.com/civilization-ancient-india2