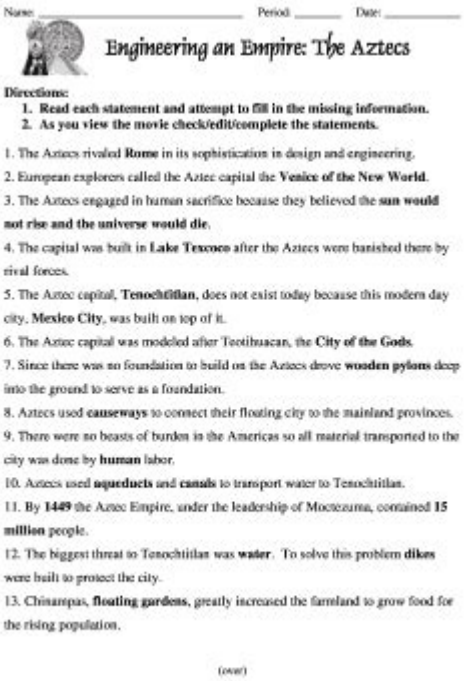
Engineering An Empire Aztecs Worksheet



Name: _____ Period: _____ Date: _____

Engineering an Empire: The Aztecs

Directions:
1. **Read each statement and attempt to fill in the missing information.**
2. **As you view the movie check/edit/complete the statements.**

1. The Aztecs rivaled **Rome** in its sophistication in design and engineering.
2. European explorers called the Aztec capital the **Venice of the New World**.
3. The Aztecs engaged in human sacrifice because they believed the **sun would not rise and the universe would die**.
4. The capital was built in **Lake Texcoco** after the Aztecs were banished there by rival forces.
5. The Aztec capital, **Tenochtitlan**, does not exist today because this modern day city, **Mexico City**, was built on top of it.
6. The Aztec capital was modeled after Teotihuacan, the **City of the Gods**.
7. Since there was no foundation to build on the Aztecs drove **wooden pylons** deep into the ground to serve as a foundation.
8. Aztecs used **causeways** to connect their floating city to the mainland provinces.
9. There were no beasts of burden in the Americas so all material transported to the city was done by **human** labor.
10. Aztecs used **aqueducts** and **canals** to transport water to Tenochtitlan.
11. By **1449** the Aztec Empire, under the leadership of Moctezuma, contained **15 million** people.
12. The biggest threat to Tenochtitlan was **water**. To solve this problem **dikes** were built to protect the city.
13. Chinampas, **floating gardens**, greatly increased the farmland to grow food for the rising population.

(over)

Engineering an Empire: Aztecs Worksheet is an engaging educational tool that focuses on the sophisticated society of the Aztec civilization. This worksheet is designed to help students explore the impressive engineering achievements, urban planning, and architectural innovations of the Aztecs. The Aztecs, who thrived in Mesoamerica from the 14th to the 16th century, created a complex society that showcased their ingenuity in various fields, including agriculture, water management, and city planning. This article will delve into the key aspects of the Aztec Empire, the significance of their engineering feats, and how a worksheet can facilitate learning about this remarkable civilization.

Overview of the Aztec Empire

The Aztec Empire was one of the most influential and powerful civilizations in pre-Columbian America. It was centered in present-day Mexico and reached its peak in the early 16th century. The Aztecs were known for their rich culture, advanced social structure, and impressive engineering capabilities. Their capital city, Tenochtitlan, was a marvel of urban planning and architectural design.

Key Features of the Aztec Empire

1. Location and Geography: The Aztec Empire was situated in the Valley of Mexico, surrounded by mountains and lakes. This unique geography influenced their agricultural practices and urban development.

2. Social Structure: The Aztec society was hierarchical, with a king at the top, followed by nobles, priests, warriors, merchants, and farmers. Each class had specific roles and responsibilities, contributing to the empire's stability and growth.

3. Religion and Culture: Religion played a crucial role in the Aztec civilization, with numerous gods and rituals. The famous pyramids, such as the Templo Mayor, were built as religious sites and served as centers for worship and ceremonies.

Engineering Marvels of the Aztecs

The Aztecs were exceptional engineers who developed innovative solutions to the challenges posed by their environment. Their achievements in engineering can be categorized into several key areas:

Agricultural Engineering

The Aztecs implemented various agricultural techniques to maximize food production:

- Chinampas: Often referred to as "floating gardens," chinampas were artificial islands created on the surface of lakes. They were constructed using mud and vegetation, allowing the Aztecs to grow crops like maize, beans, and squash year-round.

- Terracing: In hilly areas, the Aztecs built terraces to create flat land for farming. This method reduced soil erosion and improved irrigation efficiency, enabling them to cultivate crops effectively.

Water Management Systems

Water management was vital for sustaining the large population of Tenochtitlan. The Aztecs engineered sophisticated systems to ensure a reliable water supply:

- Aqueducts: The Aztecs constructed aqueducts to transport fresh water from nearby springs to the city. These structures used gravity to move water over long distances, showcasing their understanding of hydraulics.

- Canals: Canals were built throughout Tenochtitlan to facilitate transportation and irrigation. They connected various parts of the city and allowed for the efficient movement of goods and people.

Urban Planning and Architecture

Tenochtitlan itself was an architectural wonder, built on an island in Lake Texcoco. The city was meticulously planned, reflecting the Aztecs' engineering prowess:

- City Layout: Tenochtitlan was organized in a grid pattern, with main roads

leading to significant structures like temples and marketplaces. This layout facilitated trade and communication.

- Pyramids and Temples: The most iconic structures in Tenochtitlan were its pyramids, particularly the Templo Mayor. These monumental buildings were constructed with precise alignment to astronomical events, highlighting the Aztecs' knowledge of astronomy.

Using the Engineering an Empire: Aztecs Worksheet

The Engineering an Empire: Aztecs Worksheet is a valuable resource for educators and students alike. It serves multiple purposes in the learning process:

Educational Objectives

- Understanding Engineering Concepts: The worksheet helps students grasp fundamental engineering concepts through the lens of Aztec achievements, making the subject more relatable and engaging.

- Developing Critical Thinking Skills: By analyzing the engineering methods used by the Aztecs, students can develop critical thinking skills as they evaluate the effectiveness and creativity of these solutions.

- Encouraging Research and Exploration: The worksheet prompts students to conduct further research on specific topics, deepening their understanding of the Aztec civilization and its contributions to engineering.

Activities Included in the Worksheet

The worksheet may include various activities designed to engage students and enhance their learning experience:

1. Matching Terms: Students match engineering terms with their descriptions, reinforcing vocabulary and comprehension.

2. Diagram Labeling: A diagram of Tenochtitlan may be provided, where students label key features such as aqueducts, canals, and chinampas.

3. Essay Questions: Students might be asked to write short essays on topics such as the significance of chinampas in Aztec agriculture or the impact of water management on urban growth.

4. Group Projects: Students could work in groups to present on specific engineering feats of the Aztecs, encouraging collaboration and teamwork.

Conclusion

The Engineering an Empire: Aztecs Worksheet serves as an excellent

educational tool that highlights the remarkable engineering accomplishments of the Aztec civilization. By exploring the intricate agricultural systems, advanced water management, and urban planning of the Aztecs, students gain a deeper appreciation for this ancient culture. The worksheet not only facilitates learning about the Aztecs but also encourages critical thinking and creativity in understanding how engineering shapes societies. Engaging with this material allows students to connect past innovations with contemporary engineering challenges, fostering a sense of curiosity and exploration in the field of engineering. Through such resources, the legacy of the Aztecs continues to inspire future generations.

Frequently Asked Questions

What is the main focus of the 'Engineering an Empire: Aztecs' worksheet?

The worksheet primarily focuses on the architectural and engineering achievements of the Aztec civilization, including their urban planning and construction techniques.

What engineering techniques did the Aztecs use to build their capital, Tenochtitlan?

The Aztecs employed techniques such as chinampas (floating gardens), causeways, and aqueducts to manage water and cultivate crops in their capital.

How did the geography of the Valley of Mexico influence Aztec engineering?

The mountainous terrain and lakes in the Valley of Mexico prompted the Aztecs to develop innovative solutions for agriculture, transportation, and water management.

What role did religion play in Aztec engineering projects?

Many engineering projects, such as temples and pyramids, were designed to serve religious purposes, reflecting the importance of religion in Aztec society.

What materials were commonly used by the Aztecs in their construction projects?

The Aztecs primarily used materials such as volcanic stone, adobe, and wood for their construction projects, which were readily available in their environment.

Can you name a significant structure built by the Aztecs and its purpose?

The Templo Mayor is a significant structure built by the Aztecs, serving as a main temple dedicated to their gods and a site for religious ceremonies.

How did the Aztecs manage water supply in their cities?

The Aztecs constructed aqueducts and canals to transport fresh water from nearby springs to their cities, ensuring a reliable water supply for the population.

What was the significance of chinampas in Aztec agriculture?

Chinampas allowed the Aztecs to create fertile farmland on the lake surface, significantly increasing agricultural productivity and supporting a growing population.

What challenges did the Aztecs face in their engineering endeavors?

The Aztecs faced challenges such as limited resources, the need for flood control, and the complexities of building on a lake, which they overcame with innovative engineering solutions.

In what ways did Aztec engineering influence later civilizations?

Aztec engineering techniques, particularly in agriculture and urban planning, influenced later Mesoamerican civilizations and contributed to the development of sustainable practices in the region.

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