

EGYPT'S GOLDEN EMPIRE

Egypt Lesson Plan 5: Architectural Marvels

Introduction:

This lesson gives students the opportunity to study pyramids, temples, and obelisks, all architectural marvels, even today. Students will learn about the purposes these structures served in Egyptian culture as well as how they were constructed and what we have learned from studying them. Students will work in groups to design their own pyramid, temple, or obelisk and create a model of their structure as part of a class presentation.

Subject Areas:

World History, Social Studies, Career Education: Engineering/Design, Art, and Communication Arts students

Grade Level: 6-12

Lesson Objectives:

Students will:

1. Work in cooperative groups to construct a pyramid using materials provided.
2. Discuss challenges faced, strategies used, and additional items that would have been useful in constructing their pyramids.
3. View the Egypt's Golden Empire video clips and Web site content related to the construction of obelisks, temples, and pyramids.
4. Discuss the purpose, religious and political significance, and the reasons for the construction of obelisks, temples, and pyramids by the ancient Egyptians.
5. Conduct research about pyramids, temples, and obelisks to obtain a greater understanding of the role they played in the lives of the ancient Egyptians.
6. Work in groups to design a diagram and a model of a pyramid, temple, or obelisk that is consistent with those created by the ancient Egyptians.
7. Compose a written description of their structure to explain its elements and design.
8. Present their projects to classmates and answer questions related to the design of the structure.
9. Compose a written response to an opinion question about the structures designed and built by the ancient Egyptians.

Relevant National Standards:

McRel Compendium of K-12 Standards Addressed:
World History

Standard 3: Understands the major characteristics of civilization and the development of civilizations in Mesopotamia, Egypt, and the Indus Valley.

EGYPT'S GOLDEN EMPIRE

Standard 5: Understand the political, social, and cultural consequences of population movements and militarization in Eurasia in the second millennium BCE.

Historical Understanding

Standard 2: Understands the historical perspective.

Language Arts

Writing

Standard 3: Uses grammatical and mechanical conventions in written compositions.

Standard 4: Gathers and uses information for research purposes.

Reading

Standard 5: Uses the general skills and strategies of the reading process.

Standard 7: Uses reading skills and strategies to understand and interpret a variety of informational texts.

Listening and Speaking

Standard 8: Uses listening and speaking strategies for different purposes.

Art

Standard 4: Understands the visual arts in relation to history and cultures.

Working with Others

Standard 1: Contributes to the overall effort of a group.

Standard 4: Displays effective interpersonal communication skills.

Estimated Time:

This should take three 90-minute class periods or five to six 50-minute class periods, plus additional time for presentation and extension activities.

Materials Needed:

- Building material for the construction of pyramids. Students could use any of the following: sugar cubes, Legos, wooden or plastic blocks or cubes, or any material of your choice.
- Video clips necessary to complete the lesson plan are available on the Egypt's Golden Empire Web site [<http://www.pbs.org/empires/egypt/index.html>]. If you wish to purchase a copy of the program, visit the PBS Shop for Teachers [<http://teacher.shop.pbs.org/product/index.jsp?productId=1406375>].
- How To Build a pyramid [<http://www.idolphin.org/pyramid.html>] article for each student – this is optional.
- You Be the Architect guide [[Download PDF here \(100k\)](#)], part of this lesson plan.
- Access to library/primary source information.
- Poster board for each group.
- Assorted building, craft, and art supplies for creating diagrams and models.

EGYPT'S GOLDEN EMPIRE

Procedures:

1. To create student interest, split students into groups of two to four. Give each group the building material of choice (see list of ideas under Materials Needed) and instruct them to build a pyramid using only the materials provided. Explain to students that they will have five to ten minutes to build their structure. Stress that the pyramid can be built only from the materials provided, and it must be able to stand on its own. As students work, visit each group to see what types of problems they are encountering and what type types of strategies they are using to construct their pyramids.
2. After each group has finished building their structure, have them work together to answer questions such as:
 - Was your group able to build a pyramid successfully from the materials provided?
 - What challenges did your group face when constructing the pyramid?
 - What strategies did your group use to build the pyramid?
 - If you could have had two additional items to use for creating your pyramid, what would they have been and how would they have helped you?
3. Once all groups have answered the questions, facilitate a short discussion about the building process by discussing each question. Finish by having groups bring their pyramids to a table or desktop in the front of the classroom.
4. Continue the lesson by explaining to students that some of the greatest architects and builders in the world were the ancient Egyptians. Stress that while they may be best known for constructing pyramids, the ancient Egyptians actually built many other great structures as well. View the video clips Episode 1: Hatshepsut's Obelisks [[insert pbs video link](#)] and Episode 3: Ramesses' Building Program [[insert pbs link](#)] to introduce students to the great obelisks commissioned by Hatshepsut and the great temples and pyramids built during the reign of Ramesses II.
5. Note: this step is optional and makes a good lead-in for Extension Activity 1, which is a math-related lesson.

Tell students that one way to better understand why people have been so awed by the construction of the pyramids, obelisks, and temples of ancient Egypt is because of the sheer size and cost of the structures. It is also the fact that erecting them was an engineering marvel. Explain that if people would attempt to construct a structure like this today, the cost would be astronomical in terms of time, resources, and money. To prove this, distribute and/or share the article

EGYPT'S GOLDEN EMPIRE

How to Build a Pyramid [<http://www.ldolphin.org/pyramid.html>] and read the article aloud as a class.

Note: Before reading, remind students that this article was written in approximately 1970, so the dollar amounts they are quoting would be much higher based on the inflation rate over the past 35+ years.

6. Using the Virtual Egypt feature

[http://www.pbs.org/empires/egypt/special/virtual_egypt/index.html] and the Architecture feature

[<http://www.pbs.org/empires/egypt/newkingdom/architecture.html>] on the Egypt's Golden Empire Web site, show students additional examples of the obelisks, pyramids, and temples that were constructed by the ancient Egyptians. Discuss questions such as:

- What was the primary purpose of the obelisk? pyramid? temple?
- What was the religious and/or political significance of each these types of structures?
- Why could these structures be considered a show of power? wealth?

7. Distribute the You be the Architect guide [[Download PDF here \(100k\)](#)] from this lesson plan to each student. Review how this will be used to help students learn more about temples, obelisks, and pyramids so that they can design one of their own. Remind them that they will need to find the answers to the research questions from Part 1 of You Be the Architect. This will help them learn about the specifics of what is contained in a temple and a pyramid, as well as the characteristics of an obelisk. Assign students to work in pairs or small groups to complete the research questions.

8. Once the questions are complete, have each pair/group of students begin work on Part 2 of the You be the Architect guide [[Download PDF here \(100k\)](#)] from this lesson plan. Here they will work together to create a design for a temple, an obelisk, or a pyramid. From this design, they will construct a model of the structure and create a written explanation of their design that can be shared with their classmates. Allow at least one class period for students to work on this part of the project.

9. When all projects are complete, set up an exhibit where students display their structures and/or present them to their classmates.

10. As a final activity, ask students to write a two to three paragraph response to the following:

- Why are the temple, pyramids, and obelisks constructed by the ancient Egyptians considered to be architectural and engineering marvels even today? Give specific reasons to support your answer using what you learned from your research and design experience.

EGYPT'S GOLDEN EMPIRE

Assessment Suggestions:

1. Students could receive participation grades for initial pyramid building and discussion activities.
2. Completion or accuracy grades could be given for doing research questions on You Be the Architect: Part 1.
3. Scoring guides, self-evaluation, and peer evaluation forms could be used to assess the You Be the Architect: Part 2 project and presentation.
4. A percentage or letter grade could be assigned for completion of the written response activity.

Extension Activities:

1. Using statistics from the article, How to Build a Pyramid [<http://www.idolphin.org/pyramid.html>], or independent research, have students calculate how much it would cost to construct the structure they designed if it was being built today. Be sure students account for issues such as the current cost of materials, labor, necessary equipment and the purchase of land when making these calculations. Have students create a pie graph showing the percentage of the total cost that each major category represents.
2. Compare the great temple, pyramids, and obelisks of ancient Egypt with some of the world's current superstructures such as skyscrapers, dams and bridges. Discuss the similarities and differences between the ancient and modern structures. Compare the reasons why today's superstructures have been built, versus the reasons the ancient Egyptians had for erecting obelisks, pyramids, and temples.

Related Resources:

NOVA: Secrets of the Lost Empires [<http://www.pbs.org/nova/lostempires/>] offers a detailed look at how the great obelisks were erected by the ancient Egyptians.

NOVA: Mysteries of the Nile [<http://www.pbs.org/nova/egypt/>] provides photographs and narrative about the temples, pyramids and other architectural wonders of Egypt.

NOVA: Pyramids [<http://www.pbs.org/nova/pyramid/>] offers a first hand look at the Great Pyramid and the role pyramids played in ancient Egyptian culture.

- The Pyramids: Houses of Eternity [<http://www.ancientegypt.co.uk/pyramids/story/main.html>] pages on the British Museum's Ancient Egypt site [<http://www.ancientegypt.co.uk/menu.html>], offer a description and diagrams of how pyramids were built. The same site also offers a similar look at temples [<http://www.ancientegypt.co.uk/temples/home.html>]. Be sure to select the Story, Explore, and Challenge links to get the most information from these pages.