

Week 2: The Pyramids

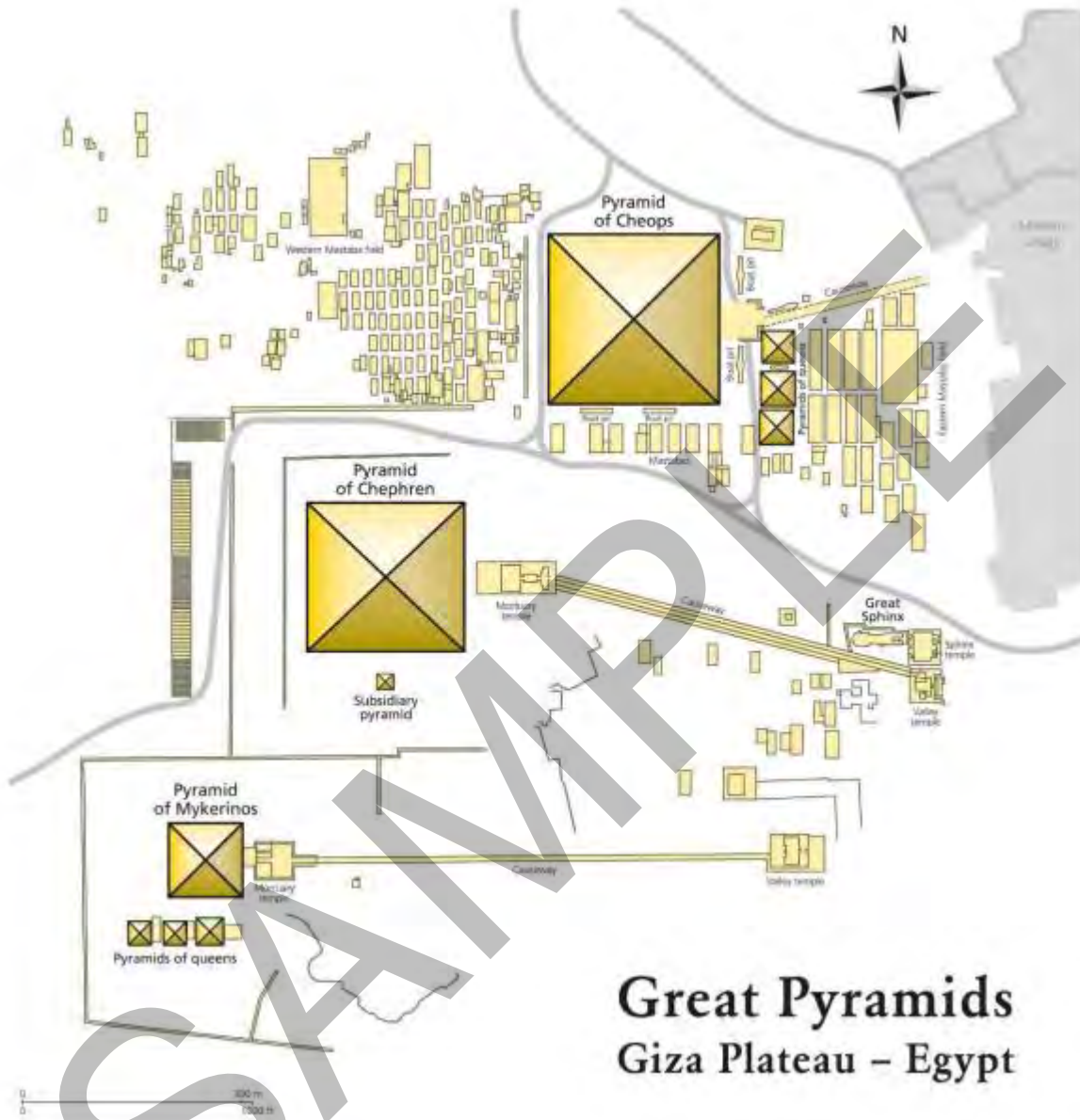
One of the Seven Wonders of the Ancient World—and the only one still standing today—is the Great Pyramid of Giza. Built circa 2500 BC, the Great Pyramid is the largest pyramid that has ever been constructed. This structure was created to serve as a tomb for Pharaoh Khufu. The two smaller ones standing beside it were built by Khufu’s son, Khafre, and his grandson, Menkaure. In the photo below, Khufu’s pyramid is on the far right, Khafre’s is in the middle, and Menkaure’s is on the left. The three smaller structures in the foreground are the Pyramids of Queens. Though it appears that Khafre’s pyramid is the tallest, it was simply constructed on a higher plateau. The diagram on page two shows the layout of the three pyramids, along with the Sphinx. The names you see—Cheops, Chephren, and Mykerinos—are the names attributed to them by the Greeks.

ACTIVITIES:

1. Watch “Deconstructing History: The Great Pyramid”:
<https://www.youtube.com/watch?v=2zU0Vv-GaqM>
2. On your world map from last week, locate and mark Giza, Egypt.

Pyramids were not new to Egyptian culture. Khufu’s father, Snefru (or Sneferu), built a few during his reign, but none of them had the precision and stability of Khufu’s. He first built a step type of pyramid in Maidum that stood 306 feet tall. After moving to Dahshur, he had another constructed, which later became known as the “Bent Pyramid.” During construction, it was determined the slope was too steep, so the angle was changed. It rose to a final height of 344 feet.





Great Pyramids Giza Plateau – Egypt



The Bent Pyramid

After failing in this attempt to construct a stable pyramid, he tried once again. Remaining in Dahshur, he built the “Red Pyramid,” which stood 341 feet tall.



After moving the center of the kingdom once again, Khufu (Snefru’s son), built his own pyramid. Creating a workforce of conscripted farmers who could not plant during the Nile’s flood season, Khufu built his pyramid from stones quarried from the surrounding area. Using chisels, ropes, drills, levers, plumb rules, and so on, these men were able to construct a massive edifice that rose to an original height of roughly 481 feet (now only 450 feet due to erosion and theft) and weighing nearly 6,000,000 tons. More than 2.3 million stone blocks weighing between 2 and 30 tons each were painstakingly carved so they would fit together nearly perfectly. Twenty-ton swivel doors were built into the entrance. These closed seamlessly and couldn’t be detected or opened from the outside.

Ball-and-socket construction was built into the **cornerstones** to enable the stones to handle heat expansion and any movement caused by earthquakes.



The **mortar** used to hold the stones together is of an unknown origin. Its chemical composition is known, but it can't be reproduced. And it is stronger than the stones. Though the stones are eroding, the mortar remains intact.

FAMILY ACTIVITY: Using icing or peanut butter (unless you are allergic) as the mortar, create your own pyramid. You can use sugar cubes, rice crispy treats, cookies, cubes of bread or cake, etc., for the stones. Enjoy eating your pyramid!

When you think of today's buildings and how they are put together, you probably picture giant cranes lifting material to great heights. You may even live in an area where new high rises and office buildings are being constructed. What sort of equipment is used in this process? Now think about the Great Pyramid. How do you suppose those huge stones were transported to the top since they didn't have giant cranes to raise them? Several different theories exist.

ACTIVITIES:

3. Before watching the following videos, take a guess as to how you think the Great Pyramid was constructed.
4. This video provides a couple of suggestions for construction:
<http://www.youtube.com/watch?v=zfYFwXqknjM>.

Let's take a quick look inside. This pyramid was constructed with three burial chambers inside. It was believed that if the king were to die during early construction he could be buried in one of these lower chambers. The design of the pyramid included many decoy rooms and passageways

which were then blocked with granite so as to thwart would-be thieves from finding the burial chambers that would have had the king's treasure stored inside.

Upon completion of the framework of the pyramid, it was then covered with a **patina** of **casing** stones made of limestone so that it would shine like the sun. Only a small amount of these stones remain at the very top of the Great Pyramid, as Arabs removed them after they were loosened in an earthquake and used them to build mosques and other buildings. It is also widely believed there was once a pure gold **capstone**.

The Egyptian people would have seen the pharaoh as a kind of god, and though the pyramid was not constructed to be a place of worship (like ones we will discuss later), it served as a link to "heaven" in their minds.

ACTIVITIES:

5. Visit NOVA (<https://www.pbs.org/wgbh/nova/pyramid/explore/>) and explore the Great Pyramid and other structures in Egypt. Click "Enter Here" and then you will see a button that reads, "Launch Interactive." Click the button and then choose Khufu Pyramid on the next page. You can tour the pyramid in whatever order you choose. Takes notes along the way.
6. The Great Pyramid at Giza took millions of blocks of stone and nearly twenty years to build. You can build your own, but it won't take that long, and it won't be made out of stone. It will be made out of card stock and will only take a small chunk of time to build. You can download the pieces and instructions by going to Canon Creative Park: <https://creativepark.canon/en/contents/CNT-0010076/index.html>.

Vocabulary

1. circa: _____
2. patina: _____
3. cornerstone: _____
4. mortar: _____
5. casing: _____
6. concave: _____
7. capstone: _____
8. quarry: _____

SAMPLE