



King Tut

A **pharaoh** is an ancient Egyptian ruler. Ancient Egypt had many, many pharaohs. That is because its history is very long. The ancient Egyptian empire lasted from about 3150 BCE to about 31 BCE.

You can figure out how long that is by doing a simple subtraction problem.

There were about 170 pharaohs in all. Most Egyptologists, those are people who study ancient Egypt, think that **Narmer** was the first pharaoh of Egypt, and they know that **Cleopatra VII** was the last.

FIGURE IT OUT!

$$\begin{array}{r} \text{About 3150 BCE} \\ - \text{About 31 BCE} \\ \hline \text{About 3119 Years} \end{array}$$

What the Pharaoh Wore

- 1) What is the pharaoh holding?
- 2) What might these objects represent?
- 3) What kind of crown does the pharaoh wear?

THINK INSIDE THE BOX



Egyptian pharaohs wore ceremonial clothes during rituals. Many of the things that they wore or carried were symbols of their power and position in Egyptian society. Look carefully at the pharaoh that is pictured above then **Think Inside of the Box!**

Let's start with the head of the pharaoh pictured above. The pharaoh is wearing a **nemes** crown. The nemes is a striped headdress which covers most of the head and extends down at the back and sides.

VOCABULARY

- 1) nemes crown
- 2) uraeus
- 3) false beard
- 4) flail
- 5) crook



Do you see that tiny cobra on top of the nemes crown? It is called a **uraeus**. The uraeus is an upright cobra. It means that the pharaoh is ready to strike at his enemies with venom at any time.

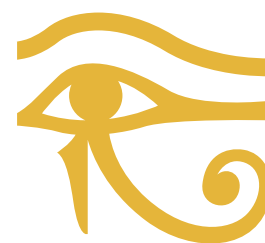
Have you ever noticed that pharaohs always have a beard? This is called a **false beard**. In real-life, most Egyptian men were clean-shaven, but pharaohs, even the female ones, wore false beards that they tied on. Usually, the beards were plaited like a big braid. No one is really sure why the ancient Egyptian pharaohs did this. Since some gods had beards, perhaps the pharaohs thought it connected them more closely to the gods.

Go back and look at the image of King Tut on page one. Do you see that brown object that he is holding? That is called a **flail**. The flail is a tool that helps to separate grains from their husks.

What do an ancient Egyptian pharaoh and Little Bow Peep have in common? That striped object which King Tut is holding is called a **crook**. A crook was a tool used by shepherds to help gather and move their flocks of sheep. **It's Time to Think Inside of the Box!**



uraeus/false beard



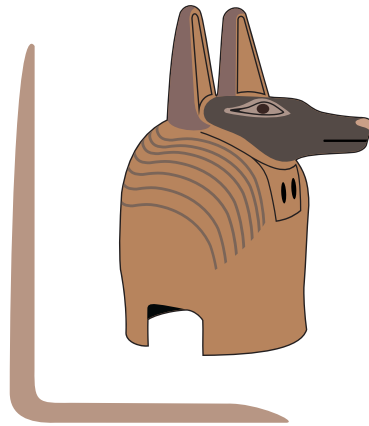
Wedjat Eye



How can an ancient Egyptian pharaoh and a shepherd be compared?

THINK INSIDE THE BOX





Symbols of Pharaohs

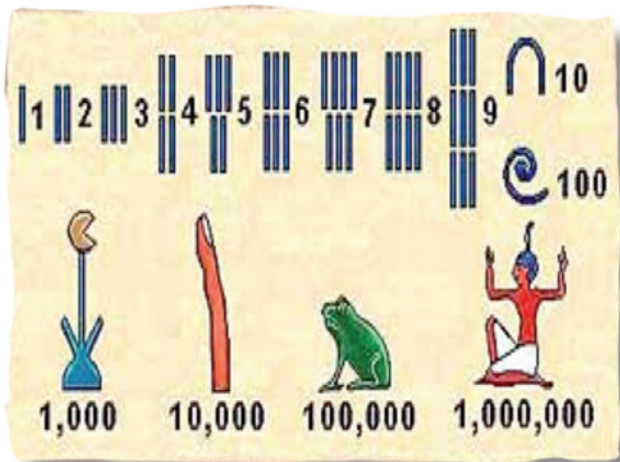
Ancient Egyptian pharaohs used many things to symbolize their power and leadership. Think of the nemes crown that looks like a lion's mane. The lion is strong and powerful. He is often called the king of the jungle! The uraeus is a venomous cobra about to strike! The crook, a tool of shepherds, shows that the pharaoh leads and protects his people.

Symbols of Presidents

Pharaohs are not the only leaders who are closely associated with symbols. This is the seal of the President of the United States. What things do you see here? What might they symbolize?



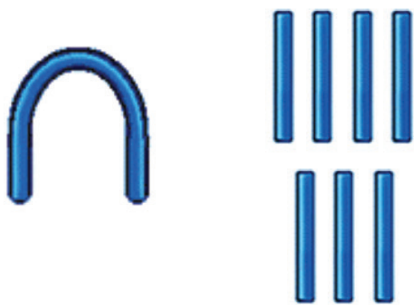
Ancient Egyptian Math





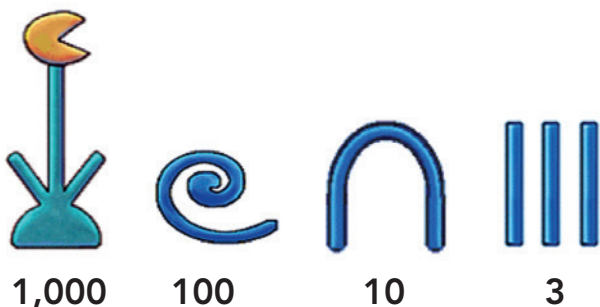
Just as we have symbols like 1, 100, and 10,000 to represent our numerals, so did the ancient Egyptians

The ancient Egyptians had to be pretty good at math too! Think of all those pyramids, tombs, sphinxes, massive statues, and palaces that they were famous for building. You can't make any of that stuff without mathematics. You also need math to trade goods and measure the land for planting crops.

Look at the symbols above to see how the ancient Egyptians wrote their numerals. Take a guess at what the numeral below and on the left is. **Hint! Read the numeral from left to right. The larger numbers always come first.**



Let's work it out! The  stands for **10** and the  stands for the numeral **7**. So **10** plus **7** equals **17**. **The number is 17!**



Let's try another one. Use the chart on this page to help you figure out the number to the left:

Look at each symbol carefully. What amount does each one represent? Look at the value of each symbol underneath of it to help you read this numeral. **The numeral is 1,113.**

Take a look at the ancient Egyptian numerals below. Add them altogether. What number do you get?



One (1) is a stroke.



Ten (10) is a hobble for cattle.



One hundred (100) is a coil of rope.



One thousand (1,000) is a lotus plant.



Ten thousand (10,000) is a finger.



One hundred thousand (100,000) is a frog.



One million (1,000,000) is an Egyptian god.

Problem Solving

Now that you know all of the symbols for ancient Egyptian numerals, try a little ancient Egyptian numeral translation. See if you can read the following numerals. Write the numeral in standard form in the spaces provided.



Write your answer here. _____



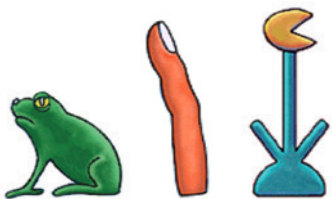
Write your answer here. _____



Write your answer here. _____



Write your answer here. _____



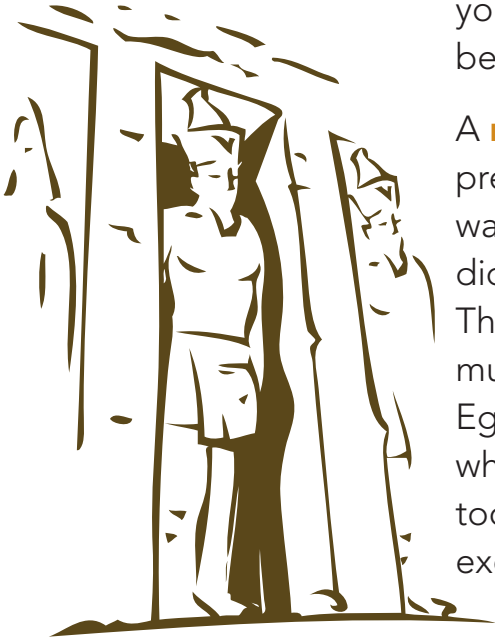
Write your answer here. _____



What is the first thing that pops into your head when you think about the ancient Egyptians? Is it a pyramid in the desert, some hieroglyphs carved on a block of stone, or a statue of a pharaoh?

Maybe it is some of those things. Maybe it is none of those things. Maybe what you think about is something that has been dead for thousands of years!

A **mummy** is a dead body that has been preserved. There are lots of different ways to preserve a corpse, but nobody did it as well as the ancient Egyptians. The hot, dry climate, along with the special mummification techniques that the ancient Egyptians perfected over centuries, are why we are still discovering their mummies today. And some of these mummies are in excellent condition.



- 1) mummy
- 2) cremate
- 3) embalm
- 4) ka
- 5) ba

VOCABULARY

Make a list of some religions that you know.

- 1) _____
- 2) _____
- 3) _____
- 4) _____

THINK INSIDE THE BOX



Religious Beliefs

There are many different religions in the world. All of these religions have beliefs and rituals that are associated with death.

Some religions believe in a life after death, in heaven or hell. Others believe in reincarnation. There are people who don't practice any religion who believe that the life you live on earth is the only life you will ever have.



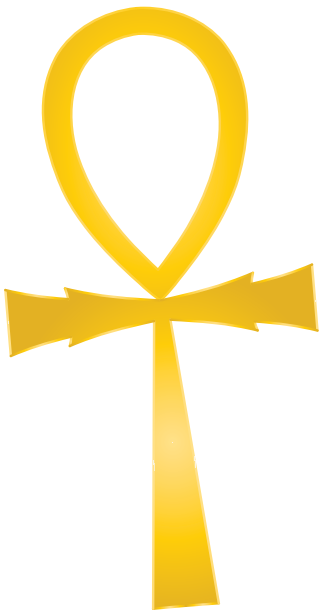
Different religions also have different rituals that they practice when someone dies. For example, Islam requires that Muslims be buried with their heads pointing toward Mecca. Mecca is the birthplace of the prophet Mohammad.

Traditionally, Jews believe that the body is the property of God and that it should not be defaced in any way. For this reason, Jews usually do not cremate or embalm their dead.

Cremate means to burn a body after death. **Embalm** means to use chemicals to temporarily preserve the body so it can be shown at a funeral.

Hindus and Buddhists prefer cremation. They believe that the burning of the body focuses the attention of the living on just how short and temporary life really is.

You can see that religious beliefs about what happens to a person after death determine what happens to the body at the time of death. Knowing this will help you understand why the ancient Egyptians practiced mummification.



Ancient Egyptian Religion

Like all civilizations, the ancient Egyptians held strong religious beliefs. They believed that all people had a ka and a ba. The ka is an invisible twin born at the same time as the individual. It was reunited with the individual after death. The ka needed food and drink in order to survive in the afterlife.

The **ba** is like a conscience or personality. It comes into being at the moment of your death. The ba acts as a communicator between the living, the dead and the gods.

The ancient Egyptians believed that after death the ka could leave the body but not the tomb. The ka stayed in the tomb



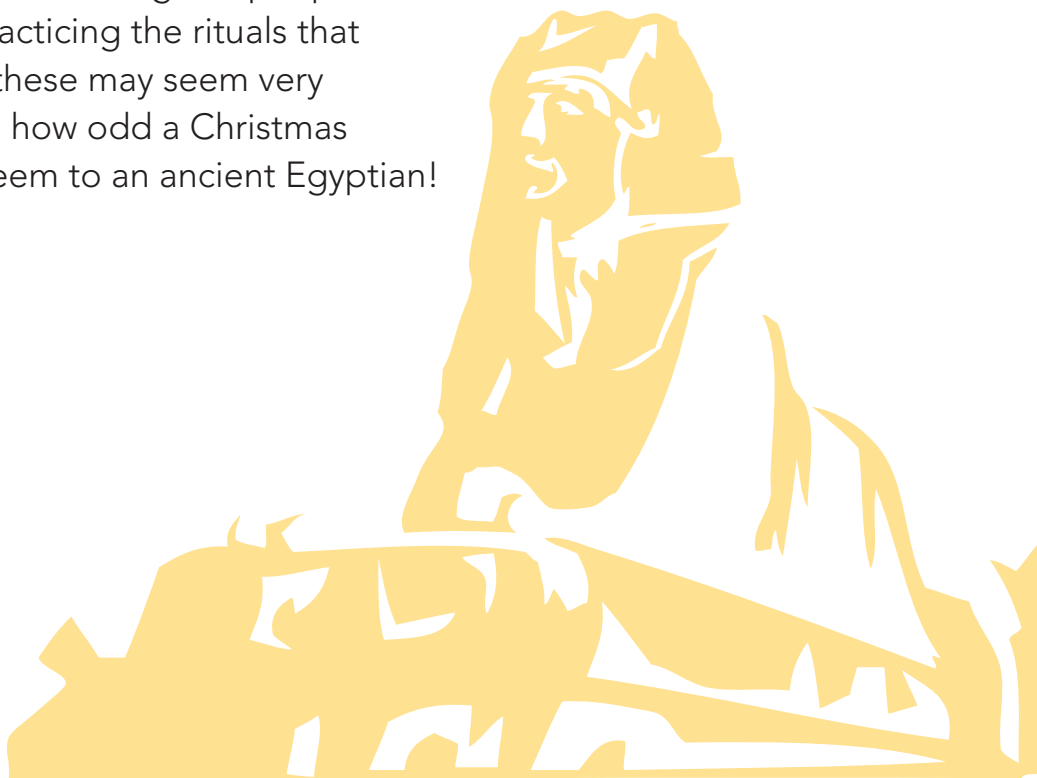
because it needed to receive nourishment from the food and drink that the friends and family would leave for the deceased.

But the ba is different. It is not confined to the tomb. In fact, the ba can leave the tomb and visit the world of the living. It can spend time with the gods. This is why the ba is always pictured as a bird. It can fly away.

But the ba can't stay away forever. Each evening, when the sun sets, the ba must return to the tomb to be reunited with the mummy of the deceased.

The ancient Egyptians practiced mummification to preserve the body. If nothing was done to the body after death, it would decay naturally. And if there was no body, there would be no place for the ba to rest. The picture above shows the ba returning to the mummy to rest.

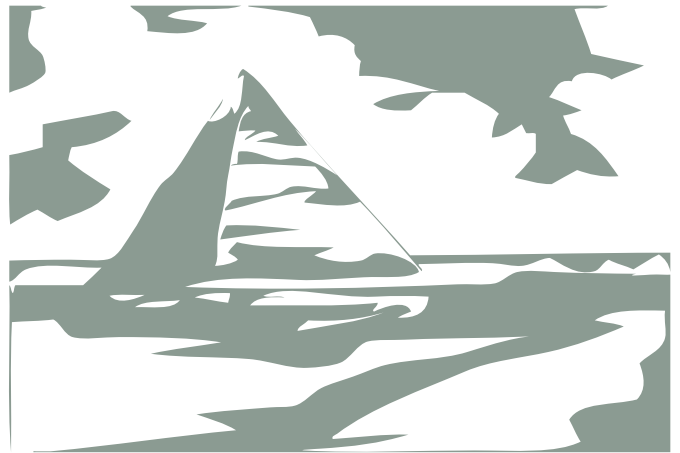
The ancient Egyptians, just like religious people today, had reasons for practicing the rituals that they did. To us, some of these may seem very unusual. But just imagine how odd a Christmas tree or a menorah may seem to an ancient Egyptian!



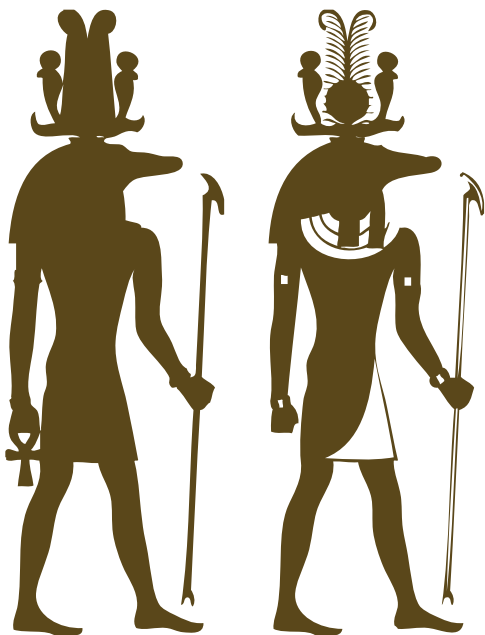
The ancient Egyptians are famous for making mummies. But it took them centuries to figure out the best ways to preserve their dead.

Their techniques, combined with the hot, dry conditions in Egypt are why we are still finding their mummies today. Embalmers performed the mummification process and the type of mummification you received depended very much on how wealthy you were. It was complex, took many days, and always began the same way...with a dead person.

While the process of mummification changed over the centuries, by the late periods, the stages became more routine:

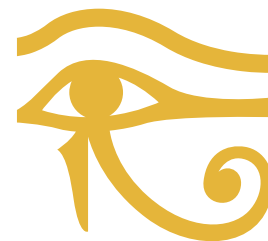


- Step 1:** Wash the body with palm wine and water from the Nile River.
- Step 2:** Make an incision on the left-side of the abdomen.
- Step 3:** Remove the lungs, stomach, liver and intestines through the incision.
- Step 4:** Push a brain hook up into the left nostril and jiggle it around to liquify the brain and remove the remains.

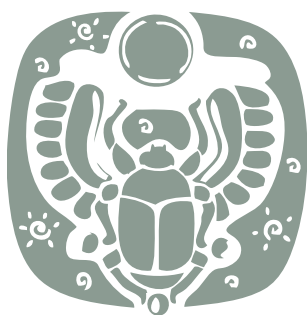


- Step 5:** Turn the body over and allow the brain to flow out through the nostrils and into a bowl.
- Step 6:** Preserve the internal organs separately and place them in canopic jars.
- Step 7:** Cover the body in a kind of salt called natron to dry it out.
- Step 8:** After 40 days, remove the body from the natron. The body will be dried out and much lighter in weight.
- Step 9:** Wash the body and stuff the cavity with resin-soaked linen.

- Step 10:** Call the make-up artist to apply make-up to the face. He might want to fit the deceased with a wig.
- Step 11:** Rub the body in scented oil.
- Step 12:** Brush the body in melted pine resin (sap) to seal it.
- Step 13:** Place a golden plate with a Wedjat eye (the eye of Horus) over the incision.
- Step 14:** Waft incense to purify the air.
- Step 15:** Wrap the body in linen.
- Step 16:** Insert amulets (charms) in-between the layers of linens.



Wedjat Eye



Heart Scarab

- Step 17:** Place a vulture amulet at the throat of the deceased.
- Step 18:** Place a special amulet called a heart scarab over the heart.
- Step 19:** Place a mask over the face of the deceased.
- Step 20:** Label the deceased with his or her name.
- Step 21:** Place the mummy in a sarcophagus.
- Step 22:** Place the sarcophagus in a tomb.

Spells from the Book of the Dead helped the deceased in the afterlife. Below is part of one of these spells.

Come for my soul, O you wardens of the sky! If you delay letting my soul see my corpse, you will find the eye of Horus standing up thus against you... Book of the Dead, spell 89

Part I Directions

Do you have what it takes to be an ancient Egyptian embalmer? Put the steps of the mummification process in order by placing numbers on the lines to show the order in which a corpse would be mummified.



-
- _____ Wrap the body in linens.
- _____ Place the sarcophagus in a tomb.
- _____ Remove the brain.
- _____ Wash the body in water from the Nile.
- _____ Apply make-up to the face.
- _____ Brush the body in pine resin.
- _____ Bury the body in natron.
- _____ Make an incision in the abdomen.
- _____ Place the mummy in a sarcophagus.
- _____ Put a mask on the deceased.
- _____ Stuff the cavity with linens.
- _____ Remove the lungs, stomach, liver, intestines.
- _____ Fan incense to purify the air.
- _____ After 40 days, remove the body from natron.
- _____ Insert amulets in between the linens.
- _____ Rub the body in scented oil.
- _____ Place the wedjat eye over the incision.
- _____ Label the deceased with his/her name.

Part I Directions

Do you have what it takes to be an ancient Egyptian embalmer? Put the steps of the mummification process in order by placing numbers on the lines to show the order in which a corpse would be mummified.



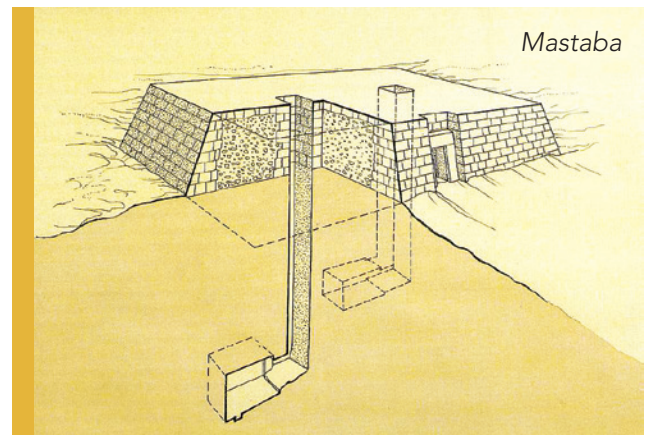
- | | |
|-----------|---|
| <u>13</u> | Wrap the body in linens. |
| <u>17</u> | Place the sarcophagus in a tomb. |
| <u>4</u> | Remove the brain. |
| <u>1</u> | Wash the body in water from the Nile. |
| <u>8</u> | Apply make-up to the face. |
| <u>10</u> | Brush the body in pine resin. |
| <u>5</u> | Bury the body in natron. |
| <u>2</u> | Make an incision in the abdomen. |
| <u>16</u> | Place the mummy in a sarcophagus. |
| <u>14</u> | Put a mask on the deceased. |
| <u>7</u> | Stuff the cavity with linens. |
| <u>3</u> | Remove the lungs, stomach, liver, intestines. |
| <u>12</u> | Fan incense to purify the air. |
| <u>6</u> | After 40 days, remove the body from natron. |
| <u>14</u> | Insert amulets in between the linens. |
| <u>9</u> | Rub the body in scented oil. |
| <u>11</u> | Place the wedjat eye over the incision. |
| <u>15</u> | Label the deceased with his/her name. |

One of the things for which the ancient Egyptians are most famous is building pyramids. Pyramid building requires great skill, mathematical and engineering knowledge and practice! It took the ancient Egyptians a long time to figure out how to build the types of pyramids that are most closely associated with them.

Take a look at the **Pyramid of Djoser (Joe-zer)**. It is Egypt's oldest (first) pyramid. It is located in an area called Saqqara. **Saqqara (sak-kar-ah)** is a large ancient Egyptian burial ground. Most ancient Egyptian pyramids marked the location of where a pharaoh was buried.

What does this pyramid remind you of? Are you thinking of a flight of steps? The Pyramid of Djoser is called a **step pyramid**. A step pyramid is a kind of ancient Egyptian tomb that is constructed out of a series of **mastabas**. A mastaba is a rectangular structure that has sides that slope inward.

Mastabas were made of mud bricks. Look carefully at the diagram of the mastaba on the left. Do you see how the walls are sloped inward? This helps to keep the weight of the structure evenly distributed. The Step Pyramid of Djoser is made of five levels one on top of the other. Do you see the burial chambers that descend beneath the mastaba?



Pyramid of Djoser, 2667 BCE



- 1) Pyramid of Djoser
- 2) Saqqara
- 3) step pyramid
- 4) mastaba

Bent Pyramid of Sneferu, 2560 BCE



This is the **Bent Pyramid of Sneferu (sen-ef-eru)**. **Sneferu** was a pharaoh. This is his burial place. It is located in an area called Dahshur. Do you see how it appears to be slanting toward one side?

The pyramid to the left is called the **Great Pyramid of Giza**. It is also one of the most famous structures that has ever been built. It is one of the Seven Wonders of the ancient world; the only one still standing.

Great Pyramid of Giza, circa. 2550 BCE



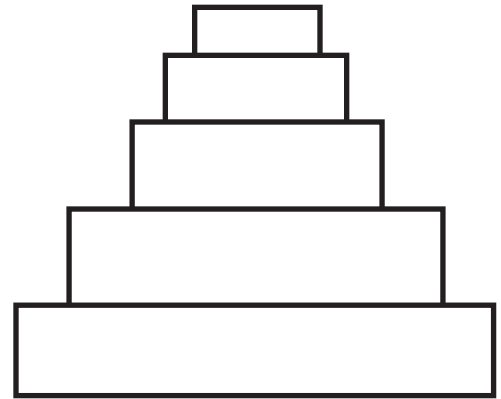
Look carefully at the dates of each pyramid. How many years have elapsed between each one? What conclusions can you draw about ancient Egyptian construction methods by considering when these pyramids were built and how the techniques changed?

Examine the three pyramids on the next page. Can you see how they changed over time? They are all fundamentally the same shape, but as the ancient Egyptians advanced, and their knowledge of engineering and mathematics improved, the pyramids they made became more structurally sound.

- 5) Bent Pyramid of Sneferu
- 6) Sneferu
- 7) Great Pyramid of Giza

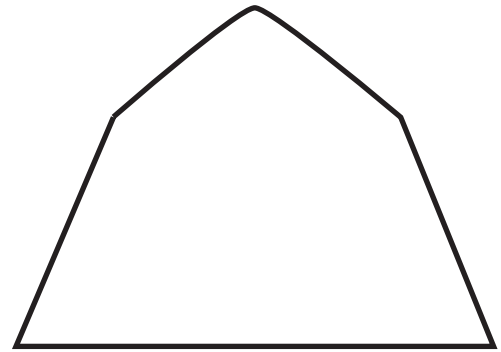


Step Pyramid



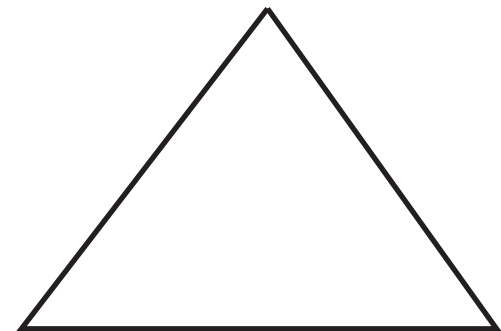
The Pyramid of Djoser was built in 2667 BCE.

Bent Pyramid



The Bent Pyramid of Sneferu was built in 2600 BCE, 67 years later.

Great Pyramid



The Great Pyramid of Giza was built in 2550 BCE, 40 years later.

The ancient Egyptians were not the only civilization to have sphinxes. The Greeks had them too, but they were very different. A Greek sphinx was really a female monster who had a serpent's tail and wings. Her job was to punish trespassers. According to Greek myth, any traveler who passed by the sphinx, outside the ancient city of Thebes, had to answer a riddle. If they were unable to answer, the Sphinx would kill them. See if you can figure out the answer to this riddle.

What goes on four legs in the morning, on two legs at noon, and on three legs in evening?

Give up? The answer is Man. He crawls on all fours as a baby, walks on two legs as an adult, and walks with a cane in old age.

Directions

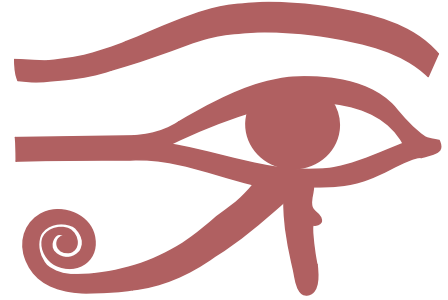
Ancient Egyptian sphinxes were not so scary. In fact, the sphinxes in ancient Egypt were thought of as guardians and protectors. The sphinx of Ramesses II, who you can see at the Penn Museum, has a few more riddles for you. Can you figure out the missing words?

From my face there once arose
 A sculpted slender regal nose
 But now it's gone not from corrosion
 But from a process called _____ .

For over 60 years I reigned
 My enemies were all contained
 By fear I struck within their marrow
 In Egypt I was called the _____ .



My cartouche is carved into the stone
 For millennia my name's been known
 Of my greatness there is no denial
 Along the banks of river _____ .





The Canaanites were duly quelled
 The Nubians were soon dispelled
 I expanded the Egyptian state
 I'm known as Ramesses the _____ .

I ruled in ancient desert lands
 This monument to me still stands
 The antique past and present links
 A granite statue called the _____ .




























Over 5000 years ago, the ancient Egyptians developed a unique and complex written script we call hieroglyphs. Hieroglyphic writing used pictures and symbols to stand for letters and words. This form of writing was in use in Egypt for over 3000 years.







There were over 700 hieroglyphic signs used to write the sounds and symbols of the ancient Egyptian language. Over time, the number grew to several thousand different images. That's a lot to memorize!



Most ancient Egyptian hieroglyphs show things from nature and from the world around the Egyptians. Some hieroglyphic signs are pictures of animals, plants, body parts, parts of buildings, and different kinds of vessels and tools. You can say that Egyptian hieroglyphs are pictures, but ancient Egyptian script was not *picture writing*. It was more complicated than that. Although some pictures could represent words, most of the time Egyptians used a number of signs to spell out words. For example, the  sign is a horned viper (a type of snake), but it does not mean the word "viper." Rather, it is sound of "f." The  sign shows a human foot and leg. It represents the sound "b."









Some signs had only one sound. These single-sound signs make up the ancient Egyptian alphabet. Some of these signs like *š* ("sh") and *t̄* ("tch") and *d̄* ("dh") are sounds that English uses more than one letter to represent. Others like *ꜥ* and *ꜣ* are sounds for which the English language does not have letters.

 ꜣ	 i	 y	 c	 w
 b	 p	 f	 m	 n
 r	 h	 ḥ	 ḥ	 ḥ
 s	 s	 š	 q	 k
 g	 t	 t̄	 d	 d̄


One thing you might notice is that there are no vowels in the ancient Egyptian alphabet. The ancient Egyptians did not have signs for vowels. The signs you see are all consonants. Even today, some Near Eastern languages like Arabic and Hebrew do not have signs for vowels.

Some signs were made up of more than one sound. Biliterals like  (“*wn*”),  (“*mr*”) and  (“*mn*”) have two sounds. Trilaterals like  (“*hpr*”),  (“*nfr*”), and  (“*stp*”) have three sounds. The prefixes “bi” and “tri” give a clue about how many sounds these signs contain.


If hieroglyphs do not include vowels, how do we pronounce them? American Egyptologists usually put a letter “e” between the consonants to help pronounce the word. The sign  (“*wn*”) becomes “wen.” We pronounce the sign  (“*nfr*”) as “nefer.” We do not know exactly how these words sounded to the ancient Egyptians. A later phase of Egyptian language is called Coptic. Coptic was not written with hieroglyphs. The Coptic language used the Greek alphabet and a few signs from a late form of Egyptian writing called Demotic. Vowels were written in Coptic. If we have a Coptic word, we can make a guess as to how the earlier hieroglyphic word sounded.

Some hieroglyphs are pictures of the word for which they stand. Egyptologists call these ideograms. With this kind of sign, the word meant what the sign represented. The sign  (*pr*) can mean “house.” The sign  (*r*) can mean “sun.” The word  (*ib*) means “heart.” If a word is what the sign represents, a small stroke was placed under or after the sign. So for house, sun and heart, we would see  or  or . It can be tricky! The sign  by itself is the letter “r” but  means “mouth” or “spell.”

Another category of hieroglyphs is the determinative. Determinatives are signs that came at the end of a word and helped to define its meaning. Determinatives were not pronounced.

The following three words all have a sun determinative, which is not pronounced. Each of these words has something to do with the sun, the sky or time. Many other words are determined by the sun sign .


 *hrw* “day”

 *wbn* “to shine”

 *rk* “time”

Write Like An Egyptian!

The following words are determined by a seated man or a seated woman hieroglyph. This last sign in each word a determinative. It is not pronounced.

The addition of the  ("t") indicates the word is feminine.



sn "brother"




sn.t "sister"



nb "lord"



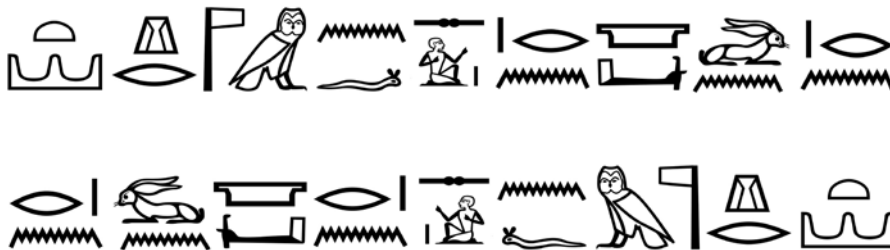
nb.t "lady"

To make the plural of a word in English, we usually add an "s." In Egyptian, to show a plural, three strokes  are added to the end of the word, or the determinative is tripled.



Although the way the Egyptians wrote their language is different from the way we write English, both ancient Egyptian and English have parts of speech like verbs, nouns, pronouns, adverbs and prepositional phrases.

Unlike English, Egyptian hieroglyphs can be read from right to left or from left to right.



This text says "A spell for opening the mouth of a man for him in the necropolis." It is the title of the spell for the "opening of the mouth" ritual performed before the mummy.

Texts could also appear in horizontal lines or in vertical columns. To find the direction in which a text should be read, find a hieroglyph of a person or an animal. If they are facing to the left, you read from left to right. If they are facing to the right, you read from right to left. The top line reads from right to left. The bottom line reads from left to right.

The literacy rate in ancient Egypt was very low. Egyptologists estimate that less than 5% of the population could read and write with any fluency.