



## South Florida Science Museum Secrets of Egypt Program Curriculum

### **PROGRAM DESCRIPTION**

Secrets of Egypt is a hands-on lab which transforms your students into Egyptologists. The students will execute the scientific method as they explore replica artifacts and use them to determine the culture, religion, and daily life of Ancient Egypt.

### **SUNSHINE STATE STANDARDS**

#### Grades 3-5

SC.3.N.1.2 Compare the observations made by different groups using the same tools and seek reasons to explain the differences across groups.

SC.3.N.1.5 Recognize that scientists question, discuss, and check each others' evidence and explanations.

SC.4.N.1.3 Explain that science does not always follow a rigidly defined method ("the scientific method ") but that science does involve the use of observations and empirical evidence.

SC.5.L.14.1 Identify the organs in the human body and describe their functions, including the skin, brain, heart, lungs, stomach, liver, intestines, pancreas, muscles and skeleton, reproductive organs, kidneys, bladder, and sensory organs.

SC.5.N.1.2 Explain the difference between an experiment and other types of scientific investigation.

SC.5.N.1.5 Recognize and explain that authentic scientific investigation frequently does not parallel the steps of "the scientific method ."

SC.5.N.1.6: Recognize and explain the difference between personal opinion/interpretation and verified observation.

#### Grades 6-8

SC.6.N.1.2 Explain why scientific investigations should be replicable.

SC.6.N.1.4 Discuss, compare, and negotiate methods used, results obtained, and explanations among groups of students conducting the same investigation.

SC.7.N.1.3 Distinguish between an experiment (which must involve the identification and control of variables) and other forms of scientific investigation and explain that not all scientific knowledge is derived from experimentation.

SC.7.N.1.7 Explain that scientific knowledge is the result of a great deal of debate and confirmation within the science community.

SC.8.N.1.5 Analyze the methods used to develop a scientific explanation as seen in different fields of science.

SC.8.N.2.1 Distinguish between scientific and pseudoscientific ideas.

### **Big Ideas**

1, 2, 14,

### **MATERIALS CHECKLIST**

-4 Canopic jars

-Stuffed organs: heart, brain, lungs, stomach, large intestines, small intestines

- Linen
- Scarab beetle
- Oil lamp
- Bastet statue
- Anubis statue
- Papyrus

### **VOCABULARY:**

Decay- to rot or decompose.

Decompose- to rot or decay.

Preserve- to keep from decomposing; to keep nice.

Organ- A body part with a specific function, such as the stomach or the brain

Ancient- very old; a very long time ago.

Tomb- a building or structure that a dead body is placed in (not to be confused with coffin/mummy case).

Mummy- Anything that has been dead for a long time but its flesh has been preserved

Mummify- To preserve flesh and soft parts of something.

Canopic Jar- The containers that the organs were put during the mummification process.

Linen- A type of cloth, used to wrap ancient Egyptian mummies.

Agriculture- Farming: Raising plants and animals for food and other products (linen, papyrus).

### **SCRIPT FOR CLASS**

#### Introduction:

(SLIDE 1) Good morning, today's show is called the "Secrets of Egypt."

When you all think of Egypt what are some of the first things that come to mind? *Mummies, pyramids, pharaohs, hieroglyphics.* Those are all excellent answers and we're going to talk about a lot of those things today. Does anyone know where Egypt is located? *In Africa.* (SLIDE 2) Has anyone been to Egypt?

When you all learn about Egypt in school, you are learning about ancient Egypt and what Egypt was like thousands of years ago. If you went to Egypt now (SLIDE 3), you would still see pyramids and mummies, but they are from a long time ago and not made any more. There are no more pharaohs either. Instead they have a president that they vote for just like we do. The president of Egypt is named Muhammad Hosni Mubarak. Try to say that five times fast. Modern Egypt has big cities with taxis and McDonalds, just like the US.

People who study minerals are called mineralogists, so what do you think people who study Egypt are called? *Egyptologists.*

#### Egyptologists

Today we are going to be Egyptologists. Does anyone know what Egyptologists do? *Discover artifacts in archeological sites in Egypt, study the ancient Egyptian artifacts, research and write about the Ancient Egyptian culture.* Just like any scientists,

Egyptologists usually use some form of the scientific method to help determine information about a certain artifact that they found. In your groups, you will receive a replica artifact. Throughout this lab you will go through the steps of the scientific method to determine what role your artifact played in Ancient Egypt. Let's review the steps of the scientific method: (SLIDE 4)

1. Ask and define the question. (*How was my artifact significant in Ancient Egypt?*)
2. Gather information and resources through observation. (*describe what it looks like or what it could be used for*)
3. Form a hypothesis. (*Using observations, what was the significance on your artifact*)
4. Perform one or more experiments and collect and sort data. (*Go back in time and learn about Ancient Egypt*)
5. Analyze the data. (*Use the stories and information to determine the use of your artifact*)
6. Make conclusions. (*My artifact was used for...*)

(Hand out the artifacts) Once you receive your artifact, you can write down your question, make observations, and formulate a hypothesis. So in order to learn about Ancient Egypt and what your artifacts were used for, we should probably go back in time (SLIDE 5). Would you guys like to go back in time?! About how many years do you think we would need to go back in time? (2000-5000 years)

### Ancient Egypt

Alright we are going back thousands of years ago, to a time where there were no televisions, video games, or cars! Because we are now in a time where there is no air conditioning, showers, or shampoo, most of us would have our hair cut very short or even shaved, for comfort and so we don't get lice. (SLIDE 6) Don't worry though, for special occasions we would wear wigs. There was also no electricity, what do you think the Egyptians used for light? They used **oil lamps**. (SLIDE 7) Archeologists have found oil lamps dating to around 4000 BC in Egypt where they were used for centuries, not only for the illumination of the home, but also in religious ritual, which was an integral part of daily life at the time. In historical times one such ceremony, called Liknokaia (the burning lamp), was held in honor of the goddess Naiff, according to the historian Herodotus. During this celebration the ancient Egyptians lit thousands of oil lamps around the country and in their homes. One well-known Egyptian oil lamp was the luxurious lamp of Isis, which was used to illuminate the statues of the gods.

The Ancient Egyptians didn't even use the same paper that we use today. Does anyone know what they used as paper? It's called **papyrus paper**. (SLIDE 8) Can everyone say papyrus? *Papyrus*. They made this special kind of paper from the fibers of a papyrus plant that grows along the Nile River. The Nile River is considered the longest river in the world and provides water and fertile soil to Egypt.

(SLIDE 9) Now that we are all Ancient Egyptians, what do you think most of us do for work? We aren't all pharaohs, slaves, and pyramid builders. Most of us would have

probably been farmers along the Nile River, growing grain, and many different types of fruits and vegetables. Others would be fishermen, goldsmiths, stonemasons (construction workers), and artists.

### Pharaohs

Ancient Egyptians believed in many gods and goddesses. They believed that all of Egypt belonged to the gods, and that there was one person who was the representative on earth of the gods, or maybe a kind of god himself, and so everything in Egypt sort of belonged to this person. Does anyone know what this person was called? *The Pharaoh*. (SLIDE 10)

In ancient Egypt they didn't have a president like they do now. They had pharaohs who ruled over everyone. I'm going to need a boy volunteer. *Have the boy come up and put a beard on him*. You are now the pharaoh and every pharaoh is expected to wear a beard wig, just like you. The reason they wore wigs instead of growing their own beard is so that it wouldn't get dirty or full of lice. Also, sometimes the pharaoh would be a 9 year old boy or a girl. Can young boys or any age girls usually grow a full beard like this? No. So now I need a girl volunteer to show us how the female pharaohs would look. (If they laugh at the girl, ask them if they think the Egyptians laughed at their pharaoh, even if she was a girl wearing a beard?) On this PowerPoint slide there are two pharaohs. One is a male and one is a female, but because they would dress alike can you tell which one is the male and which one is the female? (Pharaoh Tut is male and Hatshepsut is female) Cleopatra was another female pharaoh.

Other important people could wear fake beards also, but the beards had to be shorter than the pharaoh's beard.

### Pyramids

(SLIDE 11) What are those triangular structures that were built in Egypt a long time ago? *Pyramids* Does anyone know why the pyramids were built? (Take Guesses) The pyramids are where the Pharaohs were buried when they died. The Egyptians believed that if the pharaoh's body could be mummified after death the pharaoh would live forever. The tombs, or pyramids, were designed to protect the buried Pharaoh's body and his belongings.

Pharaohs were not the only people that were mummified. Some of you mentioned that when you think of Ancient Egypt, you think of mummies. While the Egyptian ones are the most famous, mummies have been found in many places throughout the world, from Greenland to China to the Andes Mountains of South America. The ancient Egyptians believed that mummifying a person's body after death was essential to ensure a safe passage to the afterlife, so any Egyptian that could afford the fairly expensive mummification process would do it.

### Mummification

(SLIDE 12 & 13) A mummy is the body of a person (or an animal) that has been preserved after death. Normally when we die, bacteria and other germs eat away at the soft tissues (such as skin and muscles) leaving only the bones behind. The Egyptians

would dry out the body immediately after death, using special chemicals or extreme temperatures. The body could be so well preserved that we could even tell how the dead person may have looked in life. Also, the intestines, the liver, the stomach and the lungs were removed and put in special jars called *canopic jars*. (SLIDE 14) Can everyone say canopic jars? The brain is also removed and thrown away since the ancient Egyptians didn't think the brain was important. So the only organ left would be the heart (SLIDE 15), which the Egyptians viewed as the most important body part. Why do you guys think the Egyptians thought the heart was the most important? (They thought that the heart was where their wisdom, memory and emotions came from). The mummification process was also known as embalming and the people who were hired to make the mummies were known as embalmers.

(SLIDE 16) Egyptians would put gold, jewels and protective charms on the mummies and then wrap them from head to toe in bandages made of *linen*. (SLIDE 17) Now there was a very special type of jewelry that ancient Egyptians would wear and that is called the *scarab beetle*. Can everyone say scarab beetle? It looked similar to a dung beetle. How many of you would wear jewelry shaped like a dung beetle, raise your hand? Well the ancient Egyptians believed that it was supposed to ward off evil. When a mummy was buried, a scarab beetle was almost always put over the mummy's heart to drive evil out of the heart that may weigh down the heart during the "weighing of the heart" ceremony which we'll talk about in a little bit.

Do you think that the faces of mummies were very beautiful or handsome looking? No. (SLIDE 18) So most mummies who came from wealthy families had a sarcophagus mask placed over the face of the mummy. Can everyone say sarcophagus? This way, when people saw the mummy they were able to celebrate the beauty of the person when they were alive. How long do you guys think this whole mummification process took? (Take 3-4 guesses.) It could take up to 70 days.

Once the mummy was finally prepared, it was time for the funeral. The mummy and its canopic jars were put into a tomb. The more money you had when you died, the fancier your burial was.

### Weighing of the Heart

(SLIDE 19) The weighing of the heart ceremony occurred right before the soul of the dead Egyptians went through the Underworld, on its way to the Afterlife. The soul had to overcome many obstacles, including crossing a river full of snakes, and reciting spells. For the final obstacle before going into the Afterlife, the soul had to complete the "the Weighing of the Heart" Ceremony. Maat, the goddess of truth and justice, would weigh the heart on the golden scale against the Feather of Truth. The Egyptians believed that evil could collect in your heart and so evil people had heavy hearts and good people have light hearts. Therefore, if a heart was heavier than the Feather of Truth, their soul would not be allowed to go into the Afterlife.

### Famous Gods and People:

Now that we know a little about what ancient Egypt and the mummification process was like, we are going to meet some famous gods from the Ancient Egyptian times.

**Bastet:**

(SLIDE 20) This is Bastet, everyone say hi Bastet. How many of you guys have cats as pets? Well in ancient Egypt, your cat would be considered sacred. They were also associated with agriculture because they hunted the mice that would destroy the grain in storage. Cat mummies are common. If a family's cat died, the entire family would shave their eyebrows to show grieving. Bastet had a head of a cat and a body of a woman and she was the cat goddess of love and agriculture. Everyone say bye Bastet.

**Anubis:**

(SLIDE 21) (call up a volunteer to hold up *Anubis*) This is Anubis, everyone say hi Anubis. Anubis is the Jackal-headed god (jackal is similar to a dog or coyote) of death and mummification. He is a species of wild dog associated with death because jackals like to hunt. Anubis guides and protects the souls of the dead on their journey to the Afterlife.

Reviewing Replica Artifacts

(Have each group share the name of their artifact and what it was used for in Ancient Egypt. Then have the students pass around their artifacts or walk around and look at the artifacts.)