Ancient Egypt – Science Ideas Web

Age range: 5–7 years

ANCIENT EGYPT

BIOLOGY

Identifying things that are living, dead or never lived

Egypt is a hot country and there is not much rain. The river Nile provides a fertile oasis in the middle of great deserts and allowed ancient Egyptians to grow crops.

? Look at some potted, dried and artificial plants. Can you identify which plants are alive, which plants used to be alive, and which plants have never been alive? ? How can you tell? ? What is the difference between living and dead plants?

Observing and describing animals

The goddess Bastet, who looked like a woman with the head of a cat, was worshipped in ancient Egypt. Cats were sacred animals and worshipped because they looked like the goddess. Mummified cats were often buried in temples in honour of Bastet. Cats were also kept as pets.

? Can we create a chart to show which pets the children in our class have? ? Which is the most popular pet in our class? ? What else can we find out from our chart?

Food chains

There are big, dangerous crocodiles in the river Nile. Crocodiles prey on many animals such as antelopes, zebras and even giraffes.

? Can we create a food chain that includes a crocodile? ? Can we create another food chain that includes a different predator? ? Can we use drama to show how the food chain works?

CHEMISTRY

Identifying and grouping everyday materials

Ancient Egyptians used metals for making containers and jewellery, and wood for making boats and tools.

? Can we make a list of which materials the Egyptians used for some common things like combs, buttons, shoes and clothing? ? What are the same things made from today? ? Why do you think they used metals such as bronze to create mirrors? ? Can we make a mirror using metal? ? Which metals could we use?

Uses and properties of materials

Ancient Egyptians made boats to transport things on the river Nile. These boats had to be made of strong materials to be used on the water.

? Let's look at an ancient Egyptian boat and a modern boat: can you identify which materials are used to make the boats? ? Can we find out which of these materials floats best in water? ? Can we find out which of these materials is strongest?

Changes in materials

Ancient Egyptians made papyrus, a paper-like material, from a plant that grows on the banks of the Nile. The papyrus plant was also used for making sandals, ropes and baskets.

? What do you think are the changes that happen when papyrus is made into paper? ? Can we create a sheet of paper using scraps of old paper? ? How does our paper compare with new paper?

PHYSICS

Pushes and pulls

Ancient Egyptians had to move large limestone blocks to create the pyramids. The blocks were difficult to move because they were so big and the land was mostly sand.

? What happens when we push a big stone on different surfaces? ? Which surfaces are easiest/hardest for us to push the stone on?

Light sources

The Egyptians worshipped the sun god, Ra. He was the most important god because he gave light and warmth.

? What light sources can you identify, apart from the sun? ? Which is the brightest? ? The sun produces warmth as well as light. Do you think other light sources also produce warmth? ? Can you find some examples?

Seasonal change

The river Nile flooded once a year between June and September. Ancient Egyptians believed that the floods happened because the goddess Isis was crying tears of sorrow over her dead husband Osiris. Now we know that the water comes from melting ice and heavy rain during the summer months in the Ethiopian mountains.

? Why do you think the ice melts during summer? ? What do you think happened in the Ethiopian mountains during winter? ? Can we make a chart to show the differences between the summer and the winter where we live?

Written by: **Thomas Finch**

Edited by:

Millgate House Education

ROYAL SOCIETY OF CHEMISTRY

Ancient Egypt – Science Ideas Web

Age range: 7–9 years

ANCIENT EGYPT

BIOLOGY

Key organs in the body

When preparing a dead body for mummification, ancient Egyptians removed different organs such as liver, intestines, lungs and stomach from the body. They put these organs into Canopic jars because they believed that dead people needed these organs in the afterlife.

? Can we draw around someone on a big piece of paper and stick on where each of the main organs is? ? Can we create a table to show the organs and their functions?

Habitats and environment

In ancient Egypt, some animals were respected and represented as gods or goddesses; others were domesticated and used for farming. Some animals were dangerous so people feared them.

? What can we find out about which animals lived in ancient Egypt? ? Can we make a table to show which animals were respected, which were used for farming and which were feared? ? What would the table look like for animals living in Britain today? ? Which animals do children in our class fear? ? Why?

Conditions for growing plants

Egypt is a hot country with many deserts. There weren't many places where ancient Egyptians could grow crops. The banks of the Nile were a good place for growing plants as the river provided water and nutrients by flooding its banks once a year.

? What happens if we plant a seed in different soils? ? Which soil seems to be the best for growing plants? ? Can we create a graph showing how much each plant has grown over a period of time? ? What else do you think the plants need to grow and survive?

CHEMISTRY

Changes of state

Egypt is a hot country with temperature as high as 40 degrees Celsius in summer. Water was extremely important to the ancient Egyptians because it helped them grow crops. In hot weather water evaporates quickly.

? Can you find a good way to stop water evaporating quickly on a hot, sunny day? ? Are some containers better than others for holding water in hot weather?

Soils for growing plants

Ancient Egyptians used the banks of the river Nile to grow their crops. Every year, the river would flood the banks and make the soil on the river banks more fertile, ready for the new season's crops to be planted. The annual flooding was very important to the Ancient Egyptians, and they divided the year into three seasons: *akhet* (flooding), *peret* (growth), and *shemu* (harvest).

? Can we make two tables, one showing what soil is made from and one showing what plants need to grow? ? Can you explain how flooding might affect the soil and make it more fertile?

Uses and properties of materials

In ancient Egyptians poor people made houses out of mud bricks. Pharaohs, however, wanted their pyramids to last for a long time, so they made them out of stone bricks.

? Can we make a table to compare the properties of mud and brick? ? Do you think that hard stone or soft stone would be best for building the pyramids? ? What are the disadvantages of each type of stone?

PHYSICS

Effects of forces between two objects

When they were creating the pyramids, the ancient Egyptians had to move large limestone blocks across different surfaces such as sand and stone. It was easier to move the blocks on some surfaces than others.

? Can we find out on what kind of surface is easiest for moving a large stone? ? Can you identify which surfaces around school would be best to move the stone on? ? Is it easier to push or pull the stone?

Seeing things and light sources

Pyramids contained different chambers. The sarcophagus (a container for a dead body) and other burial items would be placed in the different chambers. Pyramids had no windows and it was very dark inside the chambers.

? Why do you think the Ancient Egyptians couldn't see anything without natural light? ? What ideas can you think of for how the Ancient Egyptians could have allowed natural light into different parts of the pyramids?

Day and night, the Earth and sun

In ancient Egyptian times the sun was thought to be a disk protected by the falcon-headed god Ra, who took it for a journey in a boat across the sky every day. Every evening Apophis, the god of chaos, would consume Ra and his sun boat. This meant that Ra had to travel though the underworld at night to be reborn in the East every morning.

? Can we create a sun dial that keeps track of the sun's position in the sky throughout the day? [SAFETY NOTE: Don't look at the sun directly as this can cause loss of vision or blindness.] ? How do we know that the ancient Egyptians were wrong in thinking that the sun moves in a boat across the sky?

Written by: **Thomas Finch**

Edited by:

Millgate House Education

ROYAL SOCIETY OF CHEMISTRY

Ancient Egypt – Science Ideas Web

Age range: 9–11 years

ANCIENT EGYPT

BIOLOGY

Healthy life choices

The *Sed* festival was a big event in ancient Egyptian times. The pharaoh had ruled for 30 years, and he needed to prove his fitness and ability to lead by taking part in a race.

? Why was it important for the pharaoh to be fit and healthy? ? How do the children in our class stay fit and healthy? ? Can we do a survey to find out what types of exercise are most common in the class?

Keeping teeth healthy

Rich people in ancient Egypt ate plenty of meat. Poor people ate more fruit and bread, and these often contained sand and dirt, which wore down their teeth.

? Can we make a list of things that people eat today that might wear down or damage their teeth? ? Can you identify and name the different kinds of teeth we have? ? What are their jobs?

Environments and animal adaptation

Dromedaries (Arabian camels) were used in ancient Egyptian times for transport in the desert. Dromedaries only need water every ten to 15 days and can store fat in the hump on their back.

? Can we make a list of how dromedaries have adapted to suit a desert climate? ? How do each of these adaptations help the animal survive? ? Choose another animal that lives in Egypt, but not in a desert. Can we make a list of how this animal has adapted to its environment? ? Can we use a world map to match different animals to where they live?

CHEMISTRY

Changes in materials

When preparing a dead body for mummification, ancient Egyptians removed different organs such as liver, intestines, lungs and stomach from the body. They put these organs into Canopic jars and preserved them with natron salt. The jars were kept with the mummified body to keep the organs safe for the afterlife.

? Can we find out how much salt was needed to preserve organs? ? We could use a tomato instead of a real body organ and see how long the tomato lasts in different conditions. ? Can we find out how salt helps to preserve things?

Changes in materials: environmental influence

Today, many people visit King Tutankhamun's tomb in Egypt. So many people visit the tomb that it is harmful to the delicate wall paintings, which have started to fade and crumble. People can now visit a replica tomb, which opened in 2014, just one mile away from the original site.

? Can we find out what happens in different conditions to a painting that is painted on stone? ? Does the painting keep better in hot or cold, wet or dry conditions? ? Why do you think paintings fade when lots of people visit them?

Separating mixtures

Ancient Egyptians made their own food such as bread, which they made from wheat flour. To get the grains that contain the flour, Egyptians had to separate them from the plant's inedible parts, the straw and the chaff; this process is known as threshing.

? Can you think of a good way to separate wheat grains from straw and chaff? ? What kind of tools or equipment will you need to do this?

PHYSICS

Forces: pulleys and levers

Ancient Egyptians moved huge stones to build the pyramids. These stones were difficult to move so make this task easier, Egyptians created pulley systems to move and lift them into different places.

? Can we create a pulley system to help lift a heavy book or a water-filled bottle?

Seeing things and light sources

Ancient Egyptians experienced different seasons just like we do. In summer the Nile would flood while the winter was drier.

? Why do you think there are different seasons? ? Can we make a model, using different sized balls, to explain how we get seasons?

Day and night

Ancient Egyptians created obelisks, tall structures made out of a solid piece of stone. Obelisks were covered in hieroglyphs to tell stories about things that had happened. They created shadows based on where the sun was at different times of the day; this helped people tell the time.

? Can we use a shadow to work out what time of day it is? ? Can we work out at what time of day the shadow is shortest? ? When is the shadow longest? ? Which direction does the shadow move in?

Written by: **Thomas Finch**

Edited by:

Millgate House Education

ROYAL SOCIETY OF CHEMISTRY