Build like an Egyptian

Made by the Learning team at RIBA

RIBA Architecture.com

About this pack

This pack is aimed at upper Key Stage 2 students (ages 9-11) and is a cross curriculum project which covers History, DT, Maths and Geography.

In this PDF you will find:

- Some key information for adults to help understand how this project can be used to supplement and cover aims of school learning.
- Sheets for children to learn about Ancient Egyptian life and architecture in a self-led project which results in them building a burial site for a pharaoh.

The project is split into three parts;

- **Understanding the Ancient Egyptians:** This section provides the historical and cultural context they will need to complete their architecture challenge.
- **Exploring the architecture:** This section looks more closely at the architecture of burial sites and how maths is a part of the architecture.
- **Meeting the challenge:** The section introduces the design challenge, setting a brief and asking students to design and build a solution in response.

What the National Curriculum says children should learn:

History

- The achievements of the earliest civilizations – an overview of where and when the first civilizations appeared and a in depth study of one of the following: Ancient Sumer; The Indus Valley; Ancient Egypt; The Shang Dynasty of Ancient China

Maths

- Draw 2-D shapes and make 3-D shapes using modelling materials
- Identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- Draw 2-D shapes using given dimensions and angles
- Recognise, describe and build simple 3-D shapes, including making nets

Design

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Geography

- Use the eight points of a compass, four and six-figure grid references, symbols and key
- Describe and understand key aspects of vegetation belts and rivers

Materials Needed

- Paper
- Pencil
- Colouring pencils, felt tips
- Ruler
- Recyclable materials (make sure they are clean first!)
- Glue or tape
- Scissors

Travel Back in Time

For this architecture challenge you will be travelling over 4,000 years back in time to visit Ancient Egypt.

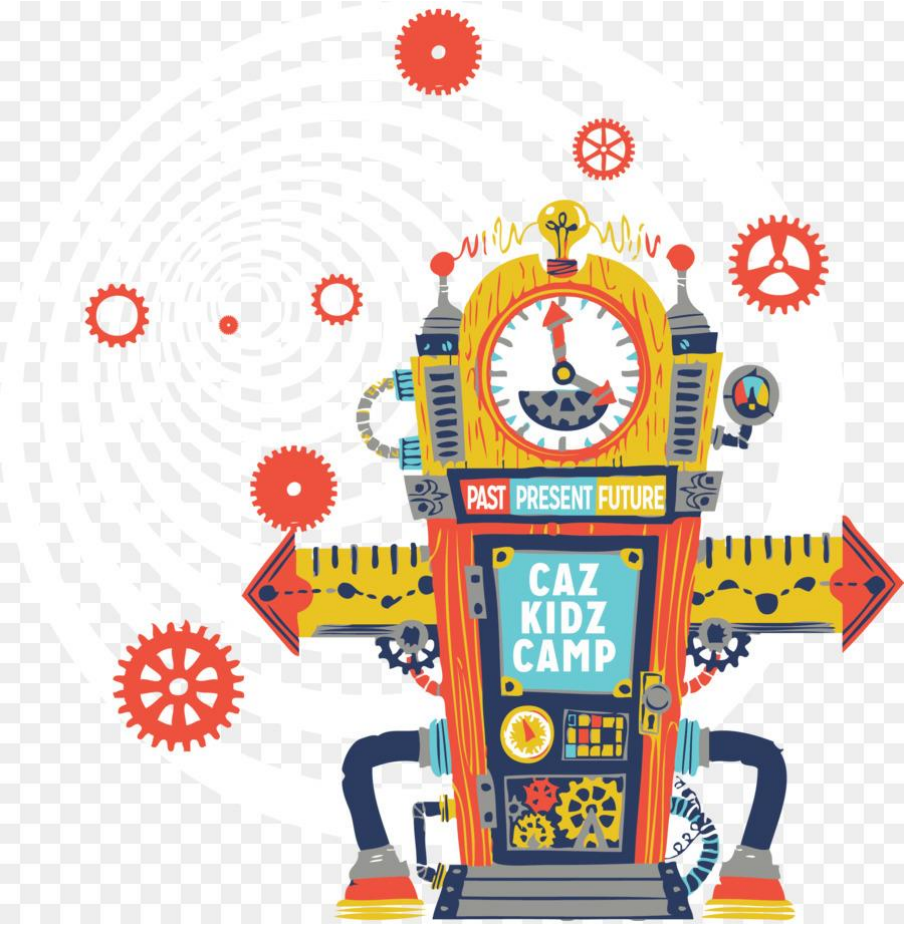
Ancient Egypt was located in northern Africa, in the country now known as Egypt. It has always been a very hot and dry country.

The kingdom was split into two parts;

- **Upper Egypt:** The land surrounding the River Nile
- **Lower Egypt:** The area by the River Nile's Delta next to the Mediterranean Sea.

The River Nile was very important to the Egyptians. When it flooded the land became fertile and could be farmed to grow crops like wheat and flax to make food and linen. It also provided water and transport.

We will be visiting the year 2600BC to start your adventure...



Keyword Checklist

Throughout this project you will see several important words underlined. Make a list of them and research their meanings if you don't know them already. You can use the table below or make your own on paper. We've even given you a couple of definitions to get you started!

Word	Definition
Delta	*A landform made from materials like sand and stone which are carried by a river and deposited at its mouth*
Pharoah	*The king who ruled Ancient Egypt*

A Royal Invitation

Greetings most talented architect!

The mighty pharaoh Khufu has heard that you are the best architect in the kingdom. He therefore wants you to immediately travel to the capital Memphis to discuss a new project with him.

He wants you to design and plan his burial site. This will be the most important job you ever do, so you must complete plenty of research to produce impressive ideas (or face being made into one of his slaves).

Khufu will expect you to create designs and models of what the burial site will look like. To help you with this great task I will guide you through Ancient Egyptian beliefs and architecture styles. My name is Djau and I am Khufu's Vizier and right-hand man.

Introduction to Memphis

Memphis is the capital city of the Old Kingdom, and we believe it is the largest city in the world!

It is found on the eastern side of the River Nile in Lower Egypt, about 20-30km south of a city people from the future will call Cairo.
Can you work out Memphis' location on the map provided?

The city was founded by the first pharaoh, Pharoah Narmer. He joined Upper and Lower Egypt together to make a united land.

Memphis is very lively. There is a palace for the royal family, workshops for all the tradesmen and merchants to make and sell items and a huge temple dedicated to the God Ptah – the god of craft and architecture!

The Afterlife

We believe that when people die they go to the afterlife. The afterlife is a beautiful place free of sickness and pain, where everything is perfect for all eternity.

At the time of death your soul leaves the body, but after certain funeral rituals are performed it returns to your body in time for your journey to the afterlife.

To get to the afterlife you must travel through the underworld. This is a difficult journey as the gods set many tests you must pass to be allowed entrance into the afterlife.

The final test is the weighing of the heart, delivered by the god Anubis. He will weigh your heart against a special feather; if it is lighter than the feather your heart is pure and good, and you will be allowed to enter the afterlife. If it is full of sin it will be heavier than the feather and will be eaten by the goddess Ammit, with your soul being restless for all eternity.

Look at the goddess Ammit.

- What animal body parts can you recognise?
- Why do you think we use them to represent her?

Preparation of the Dead

When a pharaoh dies his body undergoes mummification for 70 days. This is to stop the body rotting as he will need it in the afterlife.

All the organs except the heart are removed and placed in jars called canopic jars to protect them. The body is covered in a special salt and left to dry for several weeks.

When the body is ready it is washed and wrapped in special linen, with protective charms and amulets hidden inside. It is then placed in a special stone coffin called a sarcophagus.

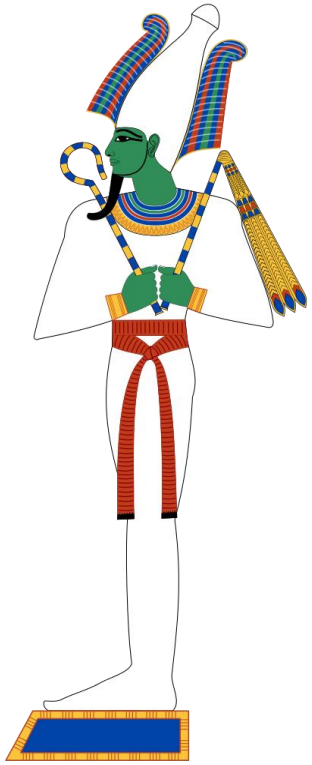
The body is moved to its final burial site as part of a funeral procession. The body and all the things the person will need in the next life such as food, perfume, weapons, tools and jewellery are placed with the corpse in the tomb.

A special ceremony called the opening of the mouth is performed, which is believed to bring the deceased's senses back ready for their journey. This is usually a very lively event with dancing, music and burning of incense.

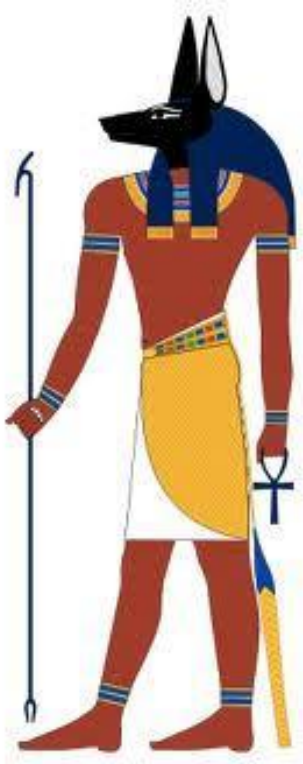
If you want to learn more about mummification, or have a go at mummifying an orange visit here https://www.bbc.co.uk/bitesize/articles/zrcg2sg

Some important Gods...

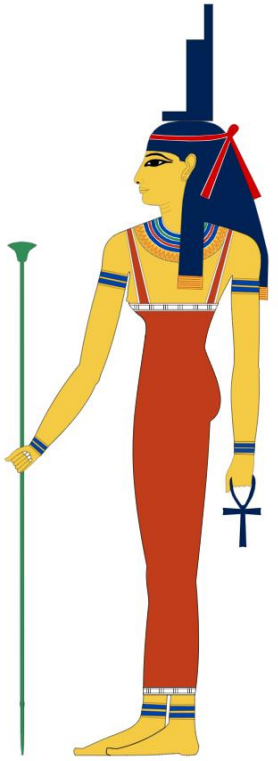
Below are some important gods associated with death, the afterlife and pharoahs. As an important pharoah, Khufu will expect to see them somewhere on your eventual designs...



Osiris
God of the Underworld and afterlife. His legs are wrapped in bandages, he has a pharaoh's beard and holds a crook and a flail



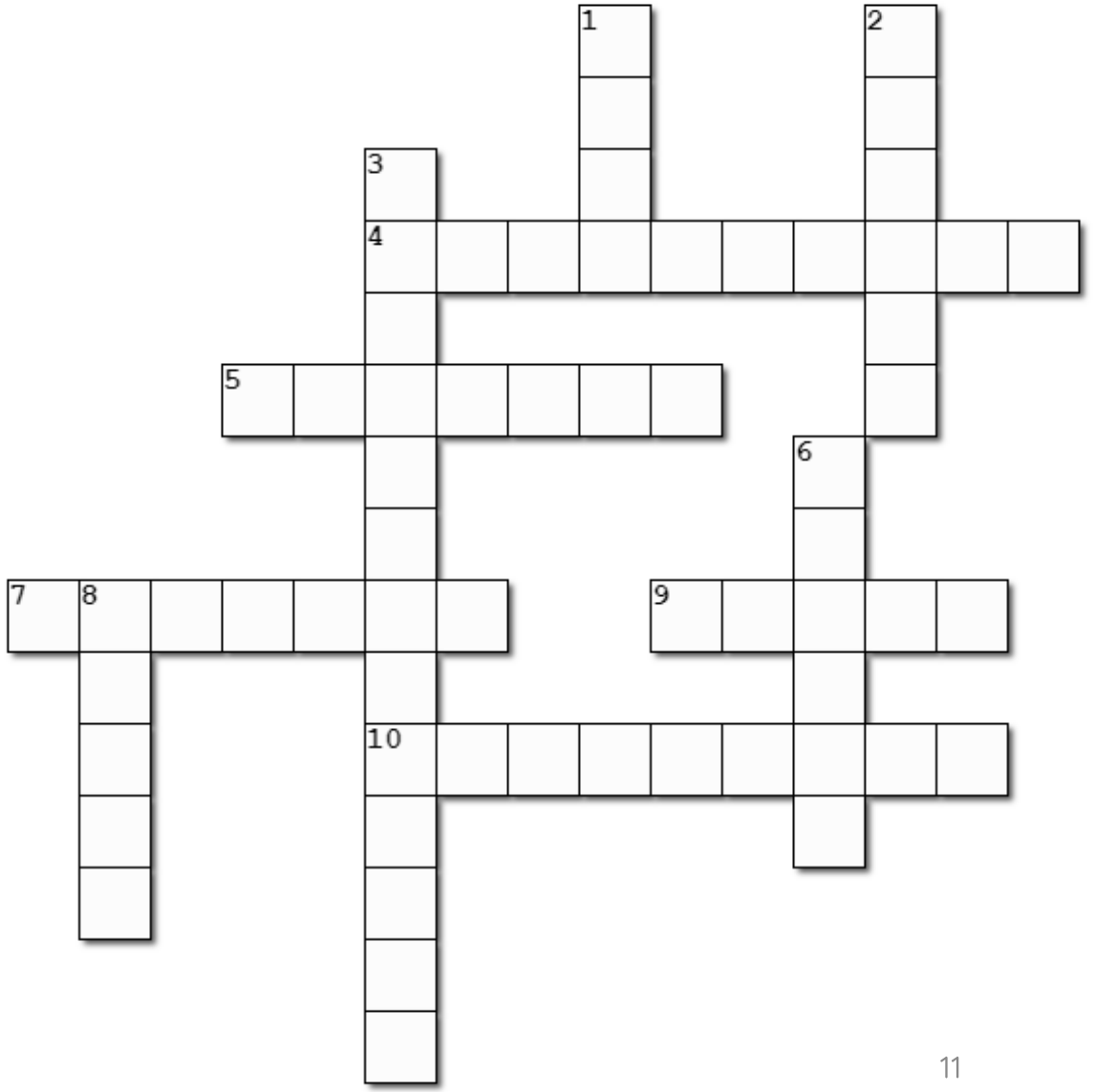
Anubis
He is associated with mummification and the afterlife. He has the head of a jackal and performs the heart weighing test.



Isis
She is the divine mother of pharaohs and helps people to enter the afterlife. She usually wears either a throne or a sun disk with horns on her head.

Let's check you've paid attention!

Complete the crossword to the right to check you have understood some of the key points. If you haven't got a printer, try drawing it on a piece of paper, counting the number of squares needed!



Across

4. The place the dead must journey through and where they are tested
5. The capital city in the Old Kingdom
7. A special jar which holds the organs of the dead
9. The name of the Pharaoh you are building for
10. The place Ancient Egyptians believe they go after death

Down

1. The name of the river which runs through Egypt
2. The God of the underworld and afterlife
3. The process of preparing the body for the afterlife
6. The god who performs the weighing of the heart
8. The goddess who eats the heart of sinners

The Design of Burial Sites

Now that you understand what happens when we die, we need to start exploring how burial sites should be designed for pharaohs. We will be focussing on three things;

- The location of the burial site
- The pyramid's structure and features
- The burial chamber

The Location

The first thing you need to decide is where to build the burial site. Most pharaohs are buried on the western side of the River Nile, as we believe this land represents the land of the dead.

By carrying bodies from the land of the living on the eastern side, to the land of the dead on the west, the journey is symbolic of the journey we will take to the afterlife.
Can you think of anything else that moves from the east to the west?

Other things to think about are;

- How close should it be to other burial sites?
- How can we show the relationship between people by the location of their burial sites?
- Would we want it on the river's floodplains? Why/why not?
- How flat is the land? Will it hide the burial site or make it stand out?

Pyramids

Many pharaohs choose to have a large 3D structure to mark their burial sites. These are called pyramids.

The pyramids are designed to be noticeable from very far away and last forever.

- Why do you think we like to make them so big?
- What do you think such grand structures say about the pharaoh they are built for?

They are made from limestone, although the outer layer is usually polished limestone to make them appear white.

- Why might white be a good colour? Does white mean anything?
- Why do you think we use limestone?

A pyramid can take a lifetime to build – it is very hard work to move the stones, especially in the desert heat! That is why we make our slaves build them, although the pharaohs will regularly check progress.

Sneferu's Pyramid

Khufu's father Sneferu had his pyramid built at a place called Dashur. It was the first ever 'smooth sided' pyramid to be built and was said to be a major success!

Look at the images to the right.

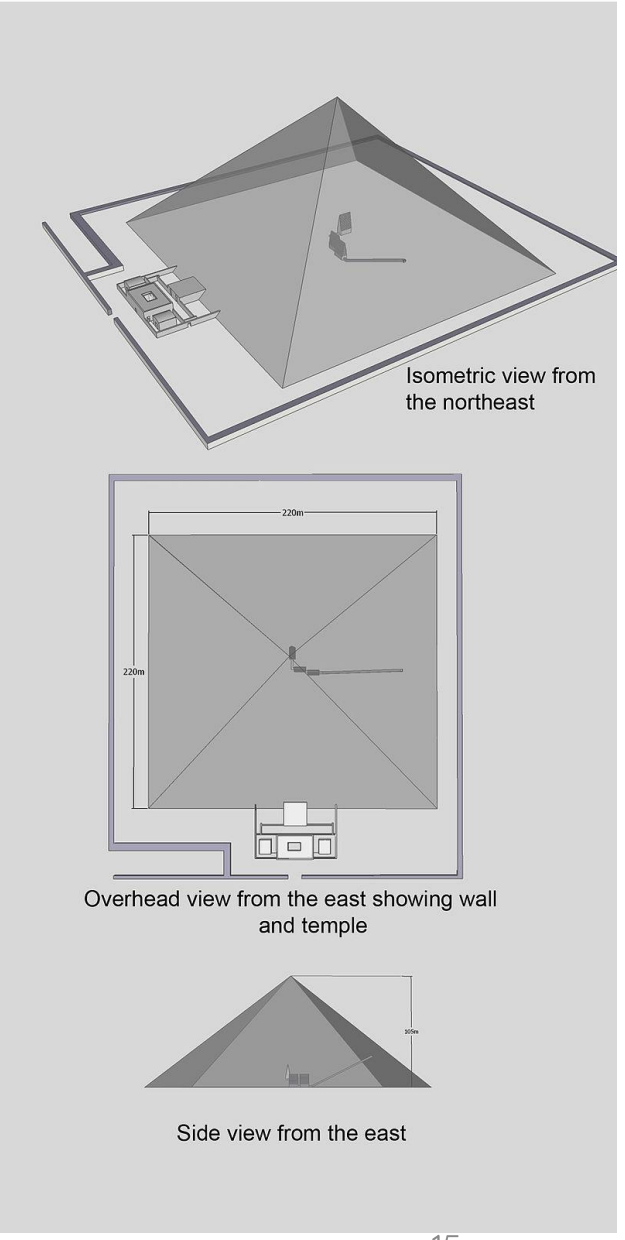
Can you tell us what type of pyramid it is? Is it a prism? Why/why not?

Can you guess how the pyramid has been built?

Watch these short clips below to see how we think they made them.

https://www.bbc.co.uk/bitesize/clips/zwfvr82

https://www.bbc.co.uk/bitesize/clips/zp6tsbk



By R.F.Morgan - Own work

Other Pyramids

The first pyramid to ever be built was by an older pharaoh named Djoser. His pyramid wasn't a perfect pyramid as the faces were not smooth, they were made into 'step shapes' and it was therefore known as a step period. Do you like this design?

Sneferu was determined to have a perfect pyramid built. Before he succeeded with the pyramid you just saw, he had many other attempts fail. His bent pyramid was the wrong shape because the architect made the sides too steep. This meant there was too much weight to be supported and so the angle had to be changed halfway through the build, giving it a curved look. His Meidum pyramid failed because it was built on sand rather than building on stone foundations, so parts of it collapsed.

Djoser's Step Pyramid

Sneferu's Bent Pyramid

Sneferu's Meidum Pyramid

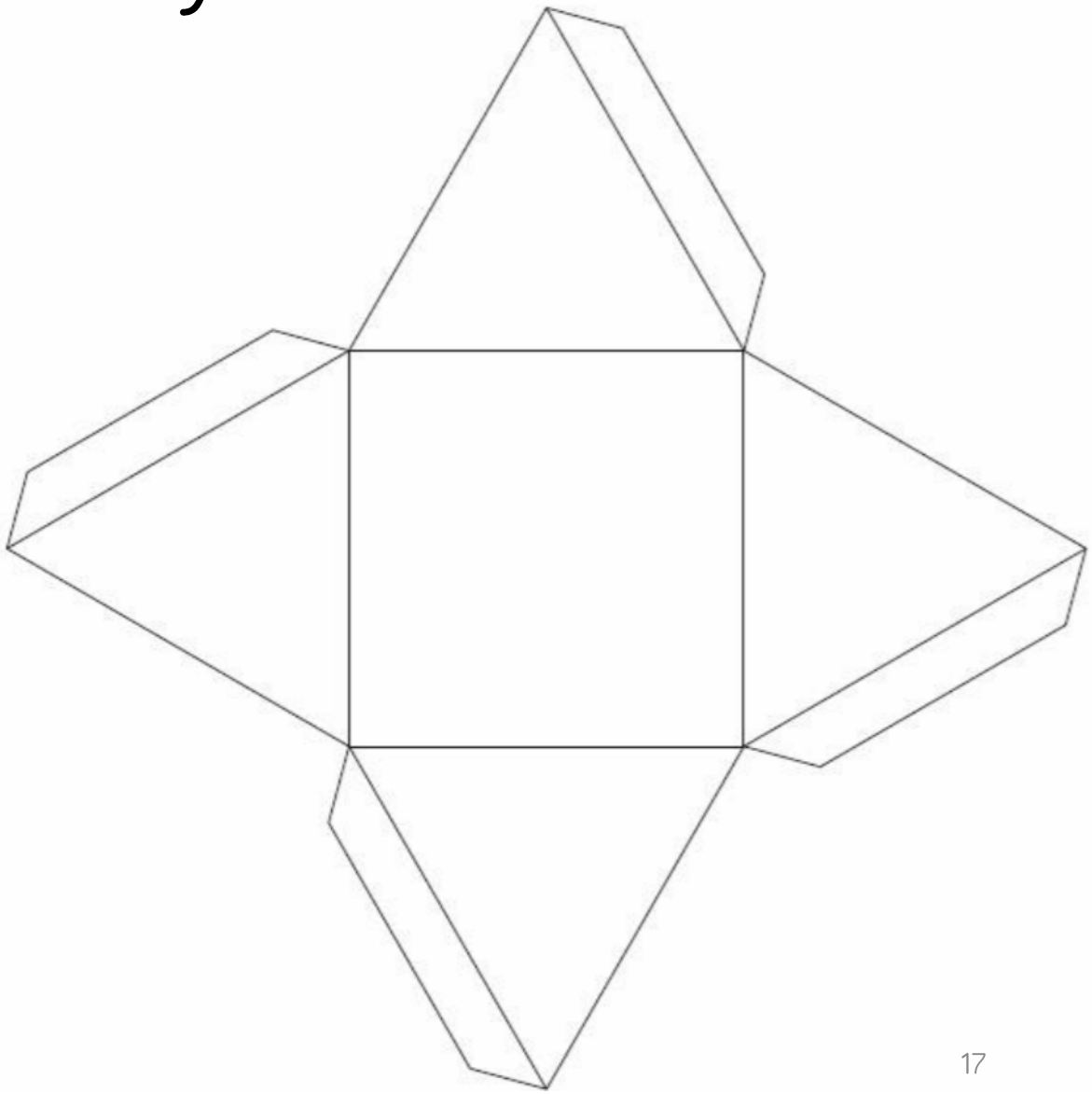
The Perfect Pyramid's Geometry

Sneferu's pyramid is a square based pyramid. It is not a prism, as if we were to slice it into equal pieces, they would not look the same.

Can you answer the following questions?

- What 2D shapes is it made of?
- How many faces does it have?
- How many edges does it have?
- What type of angles are found in its base?
- What is the total sum of the angles in the triangle faces?

If you have a printer why not have a go at making a square based pyramid using the net to the right!



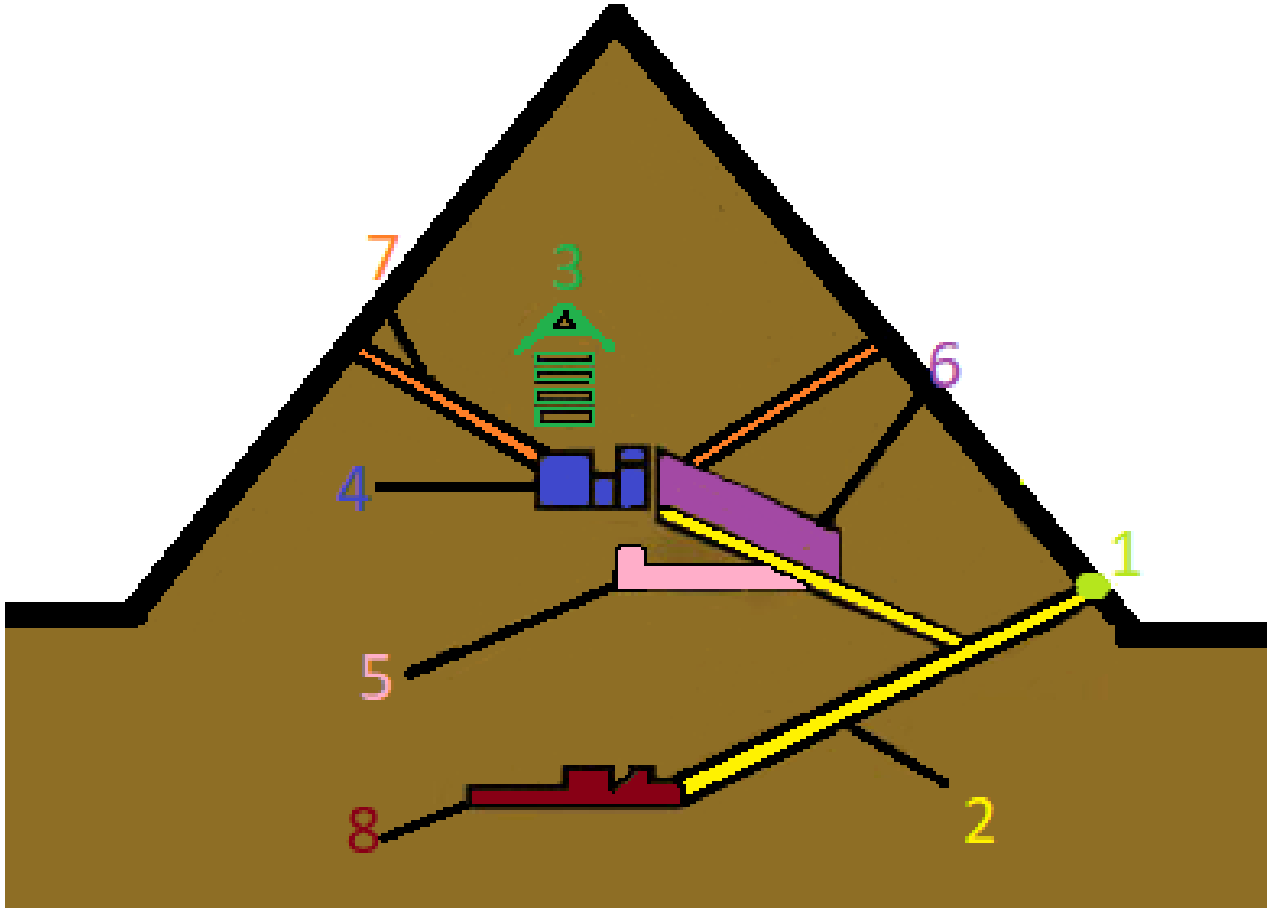
Inside a Pyramid

The picture to the right shows an example of what a pyramid might look like inside if we were to take one of its faces off – known as a section drawing. Use the key below to identify the different rooms and spaces within the pyramid.

Why do you think air vents were included if the pharaoh was dead?

Key

1 = Entrance
2 = Corridors
3 = Weight relief chambers
4 = King's Chamber (where the pharaoh is buried with possessions)
5 = Unknown chamber (maybe to hold extra possessions)
6 = The Grand Gallery – a large corridor with walls decorated with pictures and hieroglyphics celebrating the pharaoh's life
7 = Air vents
8 = Empty underground chamber



Security Features of a Pyramid

As the pyramids are meant to protect a pharaoh's body and possessions, the pyramid is designed to stop robbers entering and finding the burial chamber. Below are some common features architects use to trick robbers;

- Having only one small and difficult to spot entrance,
- Including false entrances that lead nowhere
- Making the corridors narrow and steep so that it is difficult to walk around inside
- Making false corridors that lead to dead ends or rooms away from the burial chamber
- Decorating the walls with protections spells for the pharaoh and curses for anyone who disturbs the pyramid.

The Burial Chamber

The pharaoh is buried inside the pyramid in a room called the burial chamber, although sometimes it is called the King's Chamber. The sarcophagus is usually placed in a corner and then the room is filled with the pharaoh's possessions.

Sometimes the walls are decorated with everyday life items, as it is believed that these will become a real object in the afterlife. Other times they show scenes of the journey to the underworld, or activities the pharaoh did on earth.

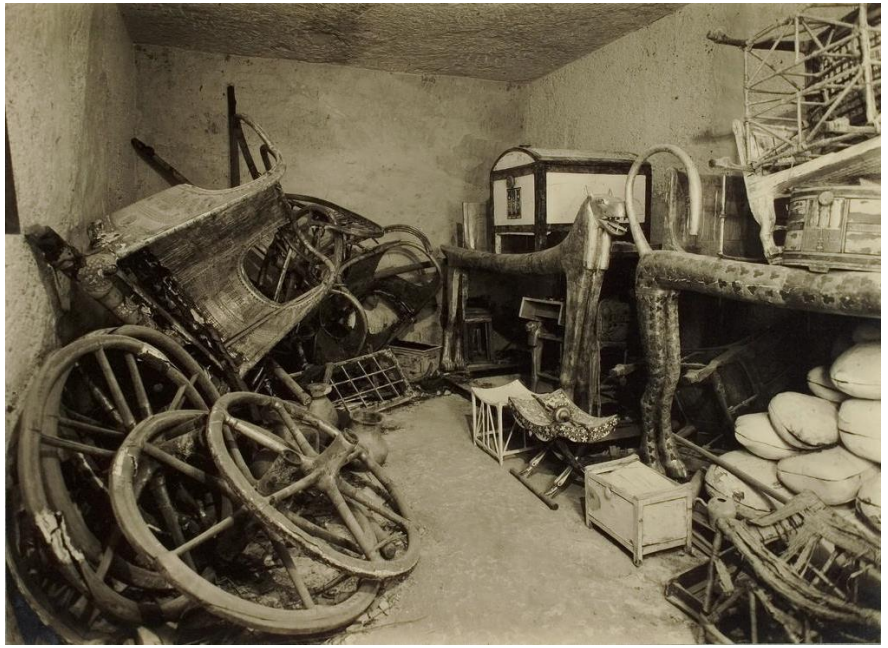
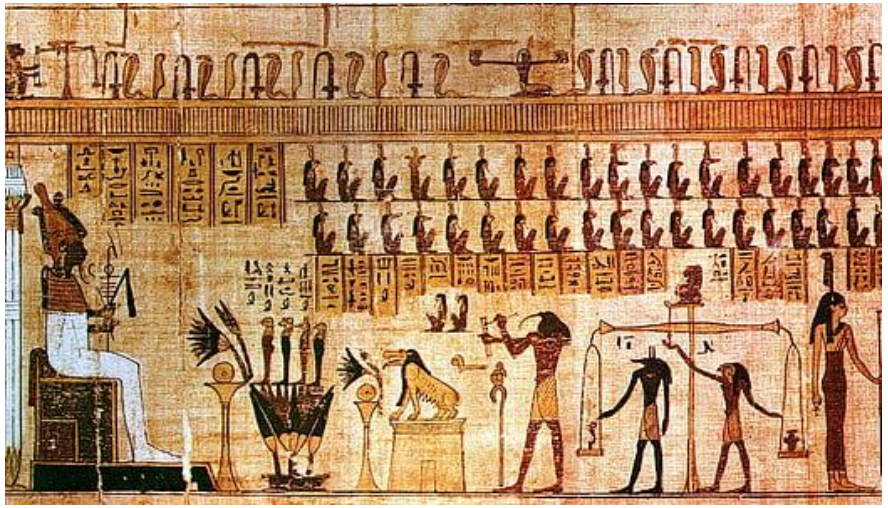


Photo by Hajor



The Brief

Now that you know the purpose of a pharaoh's burial site and what features it should include, you are ready to get designing and building!

As mentioned in your invitation, Pharaoh Khufu wants you to design and create a model of what you think his burial site should be like. You must include the following;

- A section drawing so we can see where the entrance is, what fake passages or rooms you have included, and the location and size of the burial chamber. Please also write a sentence on this drawing about where the burial site will be located.

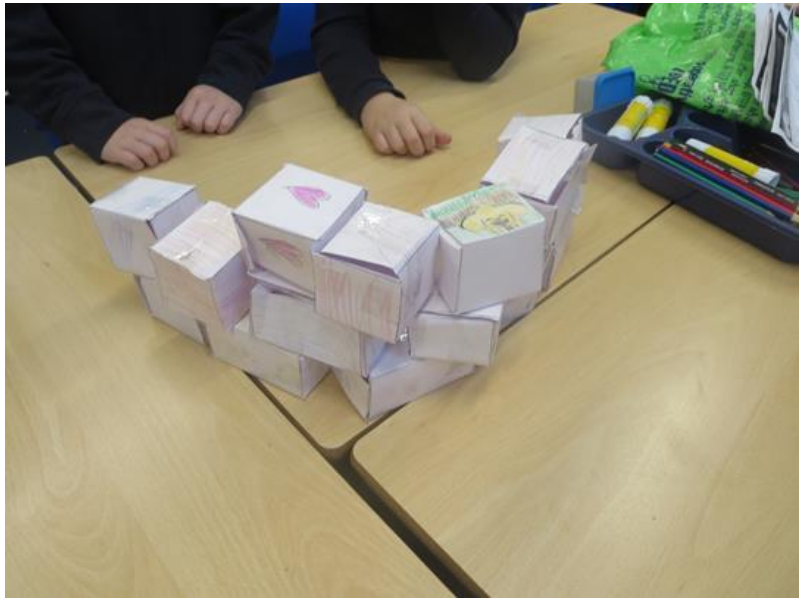
- A 3D model of what the pyramid will look like. This could be a solid structure, or you could leave a side off and make things to go in the pyramid, such as a sarcophagus or the pharaoh's possessions!

Important: Khufu expects it to look amazing, so you should think about decoration very carefully. He also expects it to be better than his father Sneferu's pyramid!

Ideas to help you build.

Have a look at the images on the next two pages for ideas for how you could build your pyramid or have a look on pinterest (type in pyramid projects).

Check out the 'how to make stick structures' learning resource to create this.



Meeting the challenge

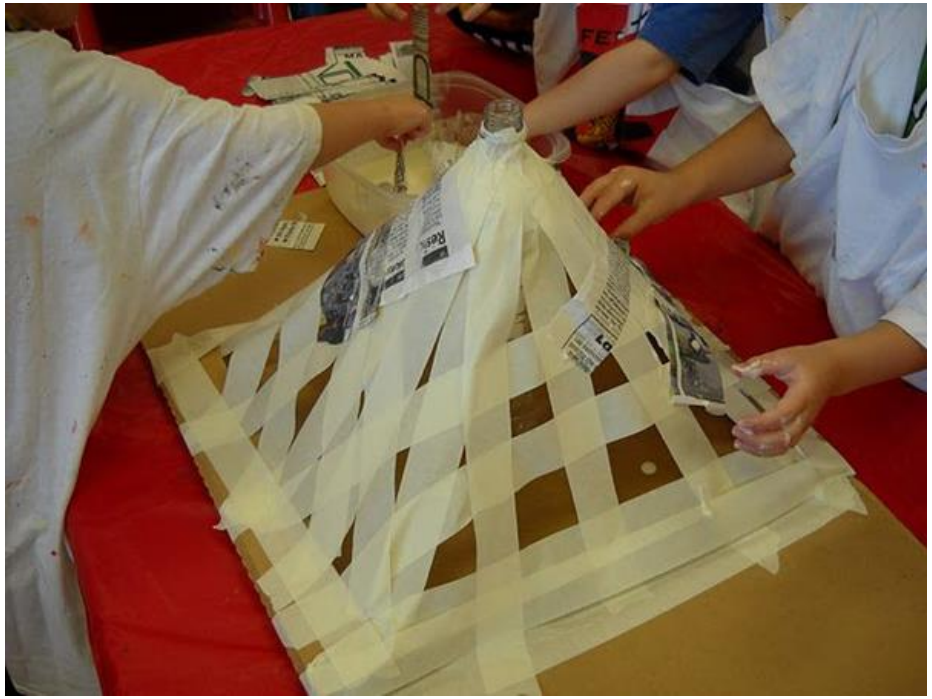


Image by https://raymond.k12.wi.us/6th-grade-ancient-egyptian-pyramids/

Share

RIBA and our architect friends would also love to see what you have done. Why not get someone to take a photo and post to twitter, tagging us @RIBAlearning **#ArchitetcureAtHome** or email us your design and written pitch (Learning@riba.org) with the subject Pyramid).

Good luck, and happy creating!

George our Learning Mascot would really like to see your ideas too!

Answers to the Crossword

Check you got the right answers for the cross word on page 11 by comparing by looking at the completed crossword to the right!