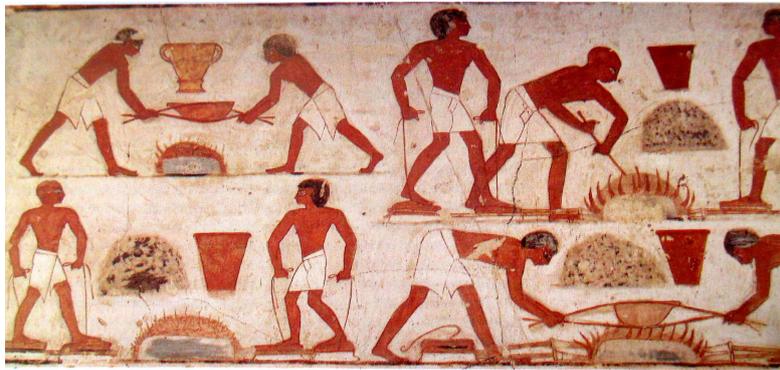


Contents and background information

Egyptian Achievements

Key Stage 2 depth study



Egyptian Achievements

This collection aims to assist you in delivering the requirements of the National Curriculum KS2 history programme of study under which pupils should **find out about ancient Egyptian achievements**. As such, this collection focusses on ancient Egyptian knowledge, skills, technology and how their society managed to thrive and exist for so long. To get the best out of this revised collection, we suggest you approach its use in the way we describe here.

What were the achievements of the ancient Egyptian civilization?

Setting up the enquiry:

- Create 3-4 'tombs' in your classroom - preferably enclosing small areas of the classroom to create these (perhaps using bed sheets or screens). Stick 2-3 of the large laminated tomb scenes to the walls inside each tomb – there are 8 altogether, each with details of its provenance on the reverse.
- Distribute the artefacts and other images between the different tombs. Depending on how much time pupils will have for this activity, you may want to have matching images and artefacts in the same tombs if time is short, or distribute them between different tombs if time is less of an issue and/or to increase the challenge of finding matching scenes and items.

Step 1: The Hook – Pupils arrive to find some Egyptian tombs have mysteriously landed in their classroom.

Step 2: Children collect information in interesting and varied ways

- **Pupils are to be archaeologists or Egyptologists** searching for evidence of particular areas of achievement. Use the **Task Cards** provided to set each pair's/group's challenge (you will easily see which might be more/less challenging).
- Pupils in their pairs/groups follow the instructions on their task card locating any tomb scenes/friezes and artefacts (and maybe other resources) as directed.

Step 3: Children make sense of ideas and process the information

- Each group/pair tries to **decode their finds** to develop an explanation of what the pictures and items show about Egyptian achievement in their particular field. Some scenes lend themselves to the use of mimes or tableaux to show how items were used e.g. smelting metals using the foot bellows and crucible or using a bow drill.
- If any pair/group is struggling or drawing incorrect conclusions, you can issue an additional Clue Card (where one is available) or suggest they look at the information books included in the collection to help them develop their ideas.

Step 4: Children draw their own conclusions, *making their own meaning*

- When all groups/pairs have developed reasonable explanations of their collection of artefacts/scenes they are to **present their ideas to the rest of the class**. If pupils are using mimes or tableaux, suggest that there should also be a narrative explanation of some kind. Presentations could be filmed to record pupil's understanding, rather than them producing written explanations.

Step 5: Understanding is checked, developed and refined by the addition of new information

- **The curve ball** – what is missing? Are there any achievements that are not represented in the tombs? There are certainly several (e.g. pyramid building – difficult to demonstrate via a small box!). Refer back to the overview study pupils previously undertook where they looked at ancient Egypt along side ancient Sumer, the Indus Valley civilization and the Shang dynasty. Was there anything the three other ancient civilizations have that Egypt did not? Answer: the use of wheels for transport.
- **Class discussion** to try and work out why wheels were not used for transport in Egypt (they were only used for war chariots as far as we know). If pupils struggle try these questions: How well would wheels work in sand? What would happen to a wheeled cart being used on a pyramid construction site if the team pulling it let go whilst pulling it up a ramp? Would the same thing happen to a sled?

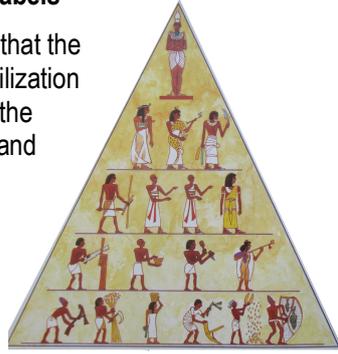
Step 6: Pupils create their final, imaginative product

- Pupils use the objects and images to create a class display about the achievements of the ancient Egyptians - take photographs of the objects/pupils demonstrating their use, to use for when the box is returned to the History Centre/ goes to another class.

Task Card 1 Government and administration

Society illustration plus labels

Pupils need to understand that the survival of the Egyptian civilization for such a long period and the development of irrigation, land reclamation and pyramid building could only be achieved by a civilization with a strong, centralised government. This is approached by matching labels to the pictured illustration, and by researching some of the roles mentioned via the information books supplied, school resources, websites etc.



In ancient Egypt the pharaoh was regarded as a god. The pharaoh was in charge of everything and owned everything, Egyptian people did not own their homes or food or anything else, pharaoh owned them all. Egypt was divided into 42 administrative provinces, (later called nomes by the Greeks) all under the Pharaoh's rule. Each pharaoh had an army, a police force, and a huge number of ministers and government officials to help him rule the country. The most important of these officials was the Vizier. The Vizier received reports from top officials every day from which he could report back to Pharaoh on what was happening all over Egypt. Sometimes Viziers became pharaohs, e.g. Rameses I and Amenemhet I.

Task Card 2 - The 'Gift' of the Nile

Pupils need to understand the importance of the Nile - from the illustrations pictured and a Clue Card if required.

The fertile soil it deposited every year in the annual flood went a long way to allowing Egyptian society to thrive and survive for so many centuries. This is because food production was so easy that agriculture did not need to involve the majority of the population just to produce enough food to feed everyone. So, many Egyptians could be spared for other work, such as the building the pyramids etc with all the trades and knowledge these required to complete, producing metals, making goods such as jewellery, tools, foodstuffs, leather goods, papyrus items etc.

Nile water was used for irrigation using a system of canals to distribute water and lagoons and reservoirs to trap and store receding floodwater for use in drought conditions. The invention during the New Kingdom of the shaduf, (a bucket at the end of a counter-weighted pole), meant water could easily be lifted from the Nile



or lagoons etc to the level of the fields or irrigation canals. Despite mechanisation, these are still used in Egypt today.

The Nile also helped trade. It was much easier to travel by boat than by any other method, but more than that, whilst its currents ran in one direction, the prevailing winds in Egypt blew the other, so giving free power going in either direction, up or down the Nile.

Task Card 3- Writing, scribes and papyrus

The complexity of Egyptian society required a means of recording official matters relating to e.g. taxes, land occupation etc. Hence Egypt developed one of the earliest forms of writing. Originally this consisted of about 700 hieroglyphs. Hieroglyphs were not suited to speedy recording of figures and lists etc so a script called demotic was developed to speed up the writing of official records and documents. Towards the end of the Egyptian civilization, Greek was used too as Egypt was governed by Greece.

Scribe's palettes x 2

Scribes in Egypt were of quite high status because they were employed by the state to record official matters and tallies of goods, livestock, harvests etc. The number of scenes they appear in attests to their importance in Egyptian society and shows how wide ranging their work was. Scribes pens were made from reeds. Paints or coloured inks were made by grinding different rocks and minerals to powder.



Photograph and two tomb scenes showing papyrus plants and papyrus sheets



Papyrus is where our word 'paper' comes from. It is made from the papyrus reeds that grew along the Nile. Although fragile, it is stable, so some papyri have survived many centuries! Pupils are tasked with

researching how papyrus paper was made, and finding out what other uses the Egyptians had for papyrus.

Task Card 4- Rosetta Stone

By the 6th Century BC, no one could read Egyptian hieroglyphs. So the inscriptions found in tombs and on monuments were indecipherable. However, the discovery of the Rosetta stone in 1799 allowed eventual translation of hieroglyphs as it has the same inscription in Greek, Demotic and Hieroglyphs.



Task Card 5- Mystery process 1 (metal smelting)

Tomb scene showing metal workers, a crucible and a pair of foot bellows

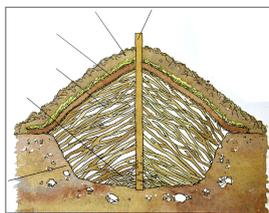


The development of metal-working and the resulting use of metal tools is key to other developments in ancient Egypt, such as the building of pyramids, food production etc. Hence scenes featuring the stages of production of metals and metal objects appear in many ancient tombs.

The smelting process used a crucible (stone/ceramic bowl with pouring spout) over an open fire burning charcoal. The bellows provided are our interpretation of the type of bellows shown in use in the tomb scene.

For these items, pupils act out what they see in the scene, using the objects provided to show how they were used. This requires them to *read* the tomb scene. It is almost like a cartoon strip – Top left - heating the crucible over the fire – its flames are quite low, Top right - stoking the fire and using foot bellows, the flames are bigger; bottom left using foot bellows, bottom right heating the crucible over higher flames.

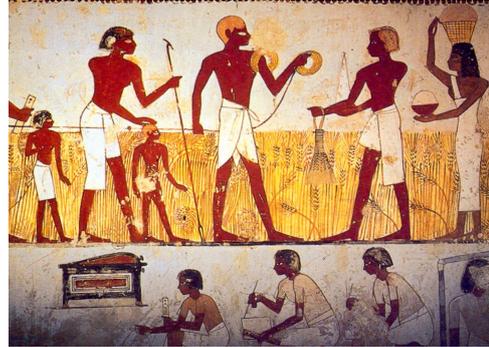
Metal ore was processed at source so the material used in the metal workshops was in the form of fairly pure cylindrical metal ingots or rings rather than ore-bearing lumps of rock. The ore was heated over fires burning charcoal. This task



card also asks pupils to explore how charcoal was made via this illustration and its associated labels. There is a theory that the demand for charcoal for metal working was the main reason the once extensive woodland disappeared from the ancient Egyptian landscape.

Task Card 6- Measurement – length

Tomb scene of surveyors measuring a field, cubit ruler and knotted measuring rope



Another team (mathematics) will need to use the rope at some point.

Egyptians have one of the earliest measurement systems we know of. Measurements were required for all sorts of things, building works, measuring land and cropped areas for tax purposes and more routine matters like making furniture. In the tomb scene provided, surveyors measure an area of grain while in the lower register we see scribes recording the information. Tax was charged on the area of land farmed, so a fair measurement system was important. Surveyors would also have to reinstate field boundaries periodically if they were washed away by the annual floods.

The Egyptian measurement system was based on human hands and arms and had three different units: the smallest, the **digit**, was from the width of a finger, next there was the **palm** which was the width of the palm of a hand. Finally the **cubit** was the distance from the tip of a man's middle finger to his elbow. The Egyptians were aware these measurements would vary from person to person so had a control cubit 'the Royal Cubit' which was a black granite rod against which all cubit rulers were calibrated. It measured about 52/53 cms in today's terms. (The rope in our

collection was measured against man's arm – his 'personal cubit' came out at 50cms.) Cubit rulers were divided into 28 digits. One palm = 4 digits, one cubit = 7 palms or 28 digits (4x7). For measuring long stretches ropes with knots tied every cubit were used. The distance between the knots had to be measured against cubit rulers.

Task Card 7- Mystery objects- measuring – weight

Relief showing medical equipment and a set of balance scales



The relief of medical implements includes a set of balance scales (centre right hand side). We include balance scales to match the scene. Just as for measurement of distance/ length the Egyptians had a standard set of weights, which pupils are asked to research. They also need to explain why standard measures were important. The scales on the frieze are probably for weighing medicines into doses, so the need for standard weights is obvious. Larger scales, such as in the workshop scene, were used to weigh out metal ore. In this case, ore had to be weighed using uniform weights so government officials could check how much ore was being used compared to the weight of goods being produced to check ore was not being purloined!

NB the balance scales will also be pertinent to the team researching medical achievements so the scales need to be left in situ.

Task Card 8- Medicine

Relief featuring medical implements and a pair of copper forceps (?) or similar and small balance scales

We know the Egyptians developed all sorts of medical implements from evidence such as this tomb relief featuring



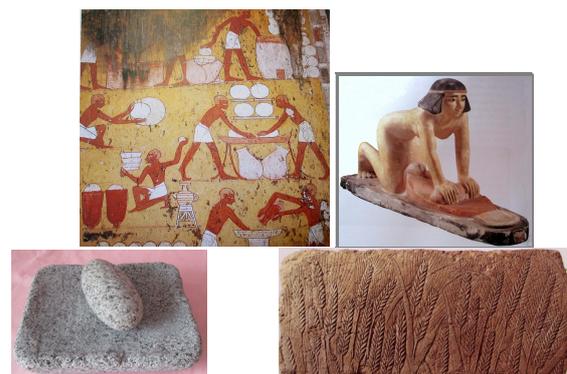
medical equipment, some fairly recognisable, some less so. Pupils will no doubt be happy to try and identify implements that might have been used to slice up and hook pieces of the brain out through the nose! However, care should be taken to explain that Egyptian doctors were **not** involved in the mummification process – it was performed by priests.

Much of our knowledge of Egyptian medicine comes from surviving papyri that give details of medical cases. One contains details of 48 cases. For each of these the illness is described, diagnosed and treatment explained. Today these would be called clinical observations. The same papyrus describes the way the heart works (although not circulation of the blood) and identifies pulse points. Medical procedures described on other papyri are startlingly similar to today: deep cuts were stitched; broken bones were splinted and bandaged; operations were carried out with the patient sedated with drugs such as opium.

Doctors used plants and minerals to extract or make drugs to treat illnesses, for example, copper salts were used as an antiseptic. Many of their herbal cures such as garlic, used in cooking and as a medicine, are still widely used today. The drugs were measured into precise doses using balance scales and patients were given instructions on when and for how long the medicines were to be taken. The Egyptians were also aware of the role of cleanliness in preventing some illnesses. This is also the reason bodies were buried well away from where people lived.

Task Card 9- Mystery process 2 – making bread

Bakery tomb scene, image of grinding grain, tomb relief of ears of wheat and a saddle quern



Pupils will need to work out what the tomb scene provided depicts and what the woman in the picture is doing (the picture is of a model from a tomb.) Our granite grinding set should help them work it out.

Bread as we know it, using yeast to make it rise, is believed to have been first produced by the ancient Egyptians, the Greeks also credit them with first producing beer. In ancient Egypt, production of both was strongly linked and often carried out on the same premises. Pupils also have to research how the two are

linked (crumbled loaves were used to make beer rather than grain and yeast, since both were already in the bread, this is not as strange as it sounds).

Until the 13th dynasty (1753-1633 BCE) bread was baked by housewives at home, by servants on the noble estates and by specially recruited workers on the great construction sites. By the early New Kingdom there were commercial bakeries serving large clienteles.

Task Card 10 - Tombs and burial customs

A scene showing the interior of a tomb and a mummy set



The ancient Egyptians' quest for a happy afterlife unintentionally resulted in the huge resource that gives us our knowledge of ancient Egyptian achievements - the decoration and furnishing of tombs with scenes of everyday life and goods such as tools, jewellery, furniture, food, model granaries or workshops etc. tell us virtually everything we know about ancient Egyptian's lives and achievements.

The scene showing the interior of Sennedjem's tomb shows him and his wife reaping corn and ploughing, using an ox-pulled scratch plough – so called because it just scratched the surface, it did not turn soil over like later and today's ploughs. It also shows irrigation channels watering his date palms. In the upper register the boat journey to the afterlife is depicted. **Tomb illustrations like this give us lots of information about farming practices, however you should make clear that the scene is showing what they believed life would be like in the afterlife. It is unlikely that someone of Sennedjem's standing who could afford such a tomb, would be ploughing his own fields in real life!**

Task Card 11 - Glass Working

There is some doubt as to when and where glass was invented. In Egypt, the first glass was a glaze or skin used on faience ware, like the hippopotamus included in this collection. Faience dates from as far back as the turn of the 5th and 4th millennia BCE.



Faience is made from a mixture of silica (sand), lime and soda, coloured with minerals like copper (for greenish blue) which is heated to a high temperature so it melts.

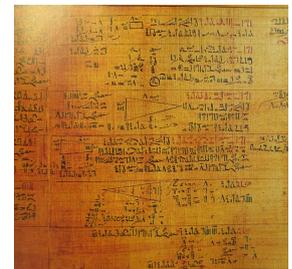
At first the Egyptians painted the mixture onto-sand and clay, or stone objects then heated them until the mixture melted to make a turquoise glaze like the shabti. Pure glass came later, in the form of translucent beads. Later still, glass jewellery, amulets, little animal figures, mosaic stones and similar things made their appearance.

Glass bottles etc did not appear until the in the New Kingdom, probably due to the Egyptians expanding their territory into the Middle East where they would have come across advanced ways of making glass objects. They probably brought back local craftsmen, maybe as slaves. However, glass vessels were only ever for the pharaoh's court, top dignitaries and the high priesthood, not for ordinary Egyptians.

Task Card 12- Mathematics

Section of Rhind papyrus featuring mathematical calculations

It is likely that the planning and construction of pyramids drove the development of mathematics and astronomy. Mathematics would be required to calculate angles of elevation for pyramids, which may be what the section of papyrus shows, calculate volumes of materials etc and more mundane matters like numbers of workers and supplies for them.



However they were also concerned with other forms of mathematics. This papyrus has also been interpreted to be defining different fractions and ways of finding the value of fractions.

For major constructions, like pyramids, the sites were planned by the Pharaoh, his chief architect (also called the royal master scribe) and other advisers. Initially, the main north-south axis of the site was defined then the surveyors could mark out the length of that side. Next, the sides that would run perpendicular to this had to be marked out.

Illustration - using measuring cord to create right-angle triangles.

The Egyptians knew about right angled triangles. They used measuring cord (see measurement section) to make triangles with sides of the ratio 3:4:5 to give an accurate right-angle for the corners at either end of the initial side. Once the angles had been defined the next two sides could be marked out. The final side of the square base was then simple to mark.

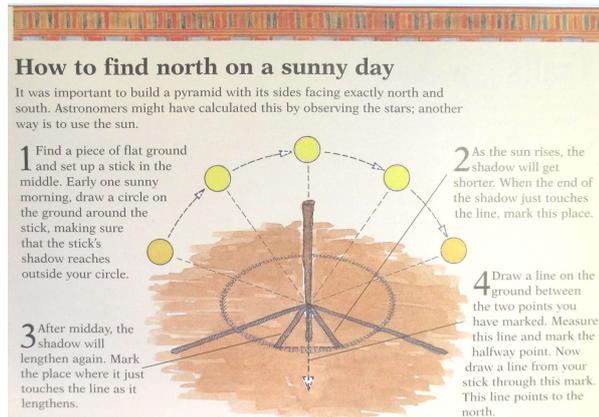


Task Card 13- Astronomy

Note: The relevant Clue Card is likely to be required for the group looking at this aspect.

Although we cannot cover how the Egyptians built pyramids via this collection (cannot fit one in!) we can let pupil's explore some aspects of how they laid out and measured their sites. To align pyramids to a north-south axis they may have used the star *Pi Ursae majoris* or used the sun's transit during the day.

Illustration – using the transit of the sun to find North



Note: True North did not point to the Pole Star during the pyramid building period of history.

The ancient Egyptians knew of five planets. They had different names for them than we do.

Mercury – Sebegu

Venus – Evening or Morning Star.

Mars – Horus the Red

Jupiter – the Bright Star

Saturn – Horus the Bull

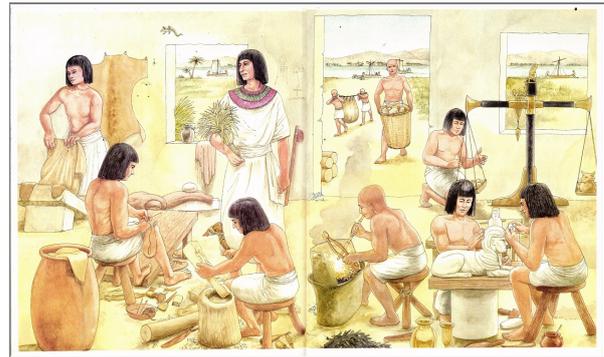
They observed that Sirius, the Dog Star, reappeared in the morning sky around July 19 each year, just as the Nile floods began. So they used this day to mark the beginning of their new year.

They knew lunar and solar years did not match so created a calendar with 12 months of 30 days plus 5 extra days corresponding to certain God's birthdays to even them up. They also added a 6th day every four years, like our leap year, to take account of the ¼ day in the solar year.

Eclipses were understood to be 'meetings of the Sun and Moon' and not seen as portents of doom to cause terror.

Task Card 14- Metal tools

Workshop scene and labels

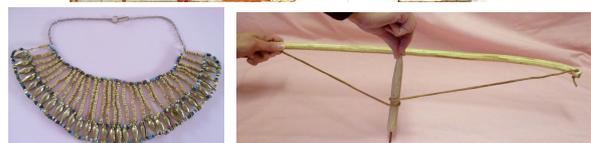


The ability to make metals undoubtedly assisted other aspects of Egyptian life particularly where tools were concerned, be it tools used to make other things e.g. stone working tools for basic buildings and huge projects, furniture making, jewellery production or things like medical implements.

The team looking at metal tools need to annotate the scene above with the labels provided. This should help pupils to see some of the range of crafts the Egyptians used, an idea of how they might have done them (interpretation), some metal tools in use AND also the fact that materials such as bone was still used for some tools (needles in this case). This links to the Stone, Bronze and Iron Age cultures in Britain and Europe where the advent of bronze and iron did not wipe out the use of bone, antler, flint etc as these items were readily available and easy to fashion into the required tools, which metals were not. **If pupils do not see this link, you need to steer them towards it.**

Jewellery making scene, bow drill with copper-tipped drill bit and beaded bracelet

Both men and women wore jewellery which was made in specialist workshops, as in the tomb illustration, which shows bow drills in action making beads and a beaded collar being produced.



The bow drill is another object which will benefit from actually being tried out, BUT carefully so as not to damage the copper tip.

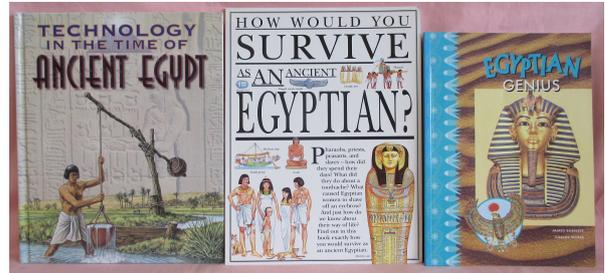
Pupils will need to see if they can work out how the Egyptians made beads such as those used in the replica necklace. A Clue Card is included which details two methods used.

Link to metal working: gold for jewellery was smelted like copper. Gold was mined in Egypt and many semi-precious minerals like carnelian (orange-red), feldspar (green) and amethyst (mauve) and small deposits of turquoise were also found there. They did not know of diamonds, emeralds or rubies. Lots of gold was used in Egyptian jewellery although most gold items were made of fired paste covered in gold leaf rather than being made of solid gold. This also applies to large gold items such as furniture, figures and statues which would be made of wood/stone/cartonnage covered in gold leaf. To make gold leaf small amounts of pure gold were beaten to make them thinner and thinner, until tissue-like gold leaf was created. **Link to metal working:** gold for jewellery was smelted like copper.

Other resources

Information books

We have included four books which feature information on Egyptian technology, knowledge etc, to assist pupils in researching Egyptian achievements as some books you have in school on Ancient Egypt may not focus on these aspects of the civilization.



Books provided will vary between boxes.