MADE IN ANCIENT EGYPT

Large Print Guide

Meeting the makers of ancient Egypt

Objects created by ancient Egyptian craftspeople and artists are striking and iconic. But who were the people who made them?

The artefacts themselves testify to the technical ability of the makers, but they rarely signed their work so it is a challenge to identify them by name. What we do have are the commemorative objects that they made to record how they wanted to be remembered for all time. Surviving documents – orders, receipts and delivery notes – show us the practicalities of making. Other texts survive, however, that present a different view, poking fun at craftspeople and manual labourers, raising questions about their status in ancient Egyptian society.

Close study of unfinished objects reveal design changes and mistakes that were corrected, while scientific analyses uncover working practices still recognisable today. **Made in Ancient Egypt** brings together the results of this research by Egyptologists, conservators and research scientists at the Fitzwilliam Museum to bring us close to the makers who have been overlooked for thousands of years.

The art of close looking

Cartonnage mummy-case of a priest called Nakhtefmut
924–889 BCE (about 2,950–2,910 years ago)
Cartonnage (linen and paste), wood, gold, paint and glass

The mummified body of a priest called Nakhtefmut was contained inside this mummy-case, which is covered in decoration and hieroglyphs thought necessary for his survival in the afterlife.

The coffin maker who created it has used cartonnage which is made from layers of linen, soaked in animal glue. The decoration was painted on top of a fine white plaster-like paste, possibly applied by another maker in the coffin workshop. This surface has been carved, which is a very unusual feature - maybe the makers were trying a new technique that did not become widely used. Some parts were gilded, using square sheets of gold leaf, as gold workers do today.

Fitzwilliam Museum, University of Cambridge, given by the Egyptian Research Account, 1896, E.64.1896

Skilful makers – hemut

The people we might call artists or craftspeople were known collectively as **hemut**, a word which means a group of skilful makers. Statues show us how they wished to be remembered for eternity, while a rare and lively sketch on a flake of stone (ostracon) may be a more realistic view of a maker at work.

Fragment of stone inscribed with the hieroglyphic signs signifying a group of craftsmen or artists (hemut**)**
1877–1870 BCE (about 3,900 years ago)
Limestone

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology in Egypt, 1914, E.55.1914

Standing figure of the craftsman Amunnakht
1307–1196 BCE (about 3,330–3,220 years ago)
Wood and limestone

Rijksmuseum van Oudheden, Leiden / National Museum of Antiquities, Leiden, The Netherlands, AH 210

Sketch showing a stonemason at work, holding a chisel and mallet
1295–1186 BCE (about 3,320–3,210 years ago)
Limestone

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson,
1943, E.GA.4324a.1943

The deep knowledge of a skilful sculptor

Commemorative stela of Irtysen
2030–1980 BCE (about 4,050–4,000 years ago)
Limestone

Irtysen was an overseer of craftsmen and a sculptor. This decorated stone slab was almost certainly made for his tomb. Some of the inscription uses standardised prayers, but in other parts he speaks to us directly, telling us he was an efficient and skilled maker (**'hemu'**) with detailed knowledge about how to write hieroglyphs and how to carve figures of men, women and birds. He also knows how to create and use pigments.

This declaration of his own artistic skill is unique, and Irtysen may have carved this stela himself. Alternatively, his family may have commissioned it after his death.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, N 168

I am a skilled maker (hemu**)**
someone who is efficient in his craft.

I know the way a male figure goes
and the way a female figure comes.

I know how what is inside them is made,
the materials they are composed from,

without allowing the fire to burn them
and without them being washed away
by water.

Skipping work

A record of work in the Valley of the Kings
1550–1069 BCE (about 3,570–3,090 years ago)
Limestone and pigment

This ostracon includes records of absences from work on royal tombs in the Valley of the Kings. For two days the whole workforce attended a woman's funeral. On another day, a worker called Panebu was away because he had been bitten by something. And on another, the foreman Ramery was off sick, while five other workers 'did not work'.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, E 32933

Scribes making fun of other trades

Wooden writing board, inscribed with the 'Teaching of Khety'
690–595 BCE (about 2,710–2,620 years ago)
Wood and ink

The 'Teaching of Khety', also called the 'Satire of the Trades', describes, in vivid and rather negative terms, how scribes viewed the work of various craftspeople. Many copies have survived, as it was a favourite text and may have been used as a writing exercise for junior scribes. This writing board has the very beginning of the narrative.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, don, Stier, G., E 8424

Craftsmen at work

Reproduction of a copy of the wall painting in the tomb of Nebamun and Ipuky at El-Khokha, Egypt, 1390–1349 BCE, painted by Norman de Garis Davies (1865–1941) between 1921 and 1922
Paper and tempera paint

Paintings in some Egyptian tombs illustrate the makers at work. This example shows carpenters creating parts of a wooden shrine and metalworkers producing gold vessels and the statue of a sphinx. Details show us their working environment and hierarchies – some people sit on simple mud benches, while others have three-legged or more elaborate wooden stools.

The Metropolitan Museum of Art/Art Resource/Scala, Florence

Acknowledgements panel

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Workers in stone

The ancient Egyptians used stone extensively and there was constant work for sculptors and stone masons. Stone was celebrated for its colour, pattern, size and hardness, and being able to carve a hard stone was the sign of a talented maker (a **hemu** in ancient Egyptian terms). The hills bordering the Nile valley were rich in limestone, calcite, sandstone and granite, while rarer stone could be found by travelling further into the deserts. Kings and local rulers controlled the use of particular stones, and there were strict conventions governing architectural, sculptural and two-dimensional design. These rules were particularly important when working for the royal family.

Sourcing stone

Ostracon with a note about quarrying
1436 BCE (about 3,460 years ago)
Limestone and paint

Flakes of stone like this (called ostraca) were often used by scribes as note pads. This ostracon records that a group of workers was sent to quarry stone for a temple of king Thutmosis III under the supervision of Sendjehuty, an overseer of the Two Granaries of Amun.

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, P 10615

Moving a block of stone

Reproduction of a copy of the original wall painting in the tomb of Rekhmire, Qurna, Egypt,
1479–1425 BCE
Painted by Nina M. Davies (1881–1965) in 1927
Paper, tempera paint and ink

A group of men move a block of stone on a sledge. One person is pulling on a rope while three men behind use wooden levers. Another is pushing the stone with his hands. Scenes like this are rare and, sadly, the painting is rather damaged. The drawing below shows how the tomb painting would have originally appeared.

The Metropolitan Museum of Art/Art Resource/Scala, Florence

Shrine design

Design for a wooden shrine
Possibly 1550–1186 BCE (about 3,570–3,090 years ago)
Papyrus and ink

The design shows the shrine from the front (left) and the side (right). The two pieces of papyri come from a single document which may have been specially made for the use of the draughtsman, as it is in a larger format than normal. The overlying grid would act as a guide to the maker.

UCL Petrie Museum of Egyptian and Sudanese Archaeology, University College London, LDUCE-UC27934i (left) and LDUCE-UC27934ii (right)

The makers leave their mark

Shrine of Thutmosis III, 1479–1425 BCE
(about 3,500–3,450 years ago)
Sandstone and paint

Hieroglyphs on the sides of this shrine identify the gods and the king depicted, but a tiny carved inscription in a different form of Egyptian writing (hieratic) records ‘the outline draughtsman [...], made (it)’. This rare maker’s signature is only visible using steeply angled lighting and was perhaps not meant to be seen.

Chisel marks show how masons used different sized tools in creating the various parts of this shrine. The surfaces to be decorated were flattened and smoothed before the relief was carved. Finally, the shrine was painted with bright colours over a white base layer.

Fitzwilliam Museum, University of Cambridge, given by George Somers Clarke, 1902, E.40.1902

Stoneworkers finishing a granite statue of a king

Reproduction of a copy of the original wall painting in the tomb of Rekhmire, Qurna, Egypt,
1479–1425 BCE

Painted by Nina M. Davies (1881–1965) in 1927
Paper and tempera paint

Bridgeman Images
Animation by Tomfoolery Ltd

Creating relief

Stone buildings, commemorative stelae and tombs were usually covered with images and texts. The designs would be laid out by specialist outline draughtsmen (a **hemu**), often using a grid to ensure that they conformed with the accepted standard proportions of the time. The decoration and hieroglyphs would then be carved into the stone. Masons produced two types of relief – sunk relief, involving the designs being carved into the surface of the stone, and raised relief, created by cutting away the background, leaving the images standing out from the stone. Raised relief was much more time consuming to create than sunk relief.

How to draw animals

Ostracon with a guide for drawing animals
664–332 BCE (about 2,690–2,360 years ago)
Limestone

The outlines of a cat, a lion and an antelope have been overlaid with a grid to show how they should be drawn in the correct proportions. This would have served as a guide for an outline draughtsman laying out a larger design.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, E 11335

Interactive station no. 1

Draw Like an Egyptian

Have a go at making a sketch ready to be carved by a sculptor. Look around for inspiration and get drawing.

The magic of relief

False door of the tomb of a woman called Hemi-re
2170–2025 BCE (about 4,190–4,050 years ago)
Limestone and traces of pigment

False doors acted as magical gateways in tombs, allowing their owners to travel between this world and the afterlife. The owner, Hemi-re, is shown at the top of the false door, sitting in front of an offering table. Unlike the rest of the decoration, which is carved in ‘sunk’ relief, the background behind Hemi-re has been cut back, leaving ‘raised’ relief, a technique the Egyptians often used in indoor settings. So, we are meant to understand that Hemi-re is within the afterlife, behind this door, while the rest of the door and all the inscriptions are situated in this world.

Fitzwilliam Museum, University of Cambridge, bought from Michel Casira, 1909, E.6.1909

Making and re-making the false door

Although the inscriptions name a woman, the way the decoration was carved indicates that it was probably originally made for a man and later modified for Hemi-re. For example, the standing figures have one leg forward and hold a folded piece of linen in one hand, both features typically restricted to male figures. Hemi-re’s head, in the panel at the top, also seems to have been recut. The stone came from quarries close to Cairo. Recent research with a modern stonemason shows that each hieroglyph was carefully carved and took about 15 minutes to complete. The sculptor would have needed about 160 hours to carve the inscriptions.

Tools of the trade

The ancient Egyptians used fingers, palms and cubits (the length of a forearm) as units of length when making anything, from a small box to a pyramid. A cord weighted with a plumb bob creates a true vertical line used to check the precision of constructions.

These bronze chisels were used to cut limestone and sandstone.

1. **A well-used wooden cubit rod, six palms in length**
   664–332 BCE (about 2,690–2,360 years ago)
   Wood

   Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.2692.1943

2. **Carved ceremonial plumb-bob**
   332–30 BCE (about 2,360–2,050 years ago)
   Basalt

   Fitzwilliam Museum, University of Cambridge, bequeathed by Major Robert Grenville Gayer-Anderson, Pasha, 1945, received 1949, E.GA.287.1949

3. **Double tapered flat chisel for carving stone**
   3000–2890 BCE (about 5,020–4,910 years ago)
   Copper alloy

   Fitzwilliam Museum, University of Cambridge, given by the Egyptian Exploration Society, 1926, E.7b.1926

4. **Pointed chisel for carving stone**
   3000–2890 BCE (about 5,020–4,910 years ago)
   Copper alloy

   Fitzwilliam Museum, University of Cambridge, given by the Egyptian Exploration Society, 1926, E.7a.1926

Getting it right

5. Levelling rods
1353–1336 BCE (about 3,570–3,320 years ago)
Wood

Once carved, the evenness of a relief, carved in wood or stone, was checked using a cord stretched between two rods (known as levelling or boning rods), with a third rod that passed underneath. Wherever the third rod pushed the cord up, the mason knew that the stone was uneven.

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 21258, ÄM 21259 and ÄM 21264

Cutting back

6. Unfinished relief of two royal people, one pouring a drink for the other
1550–1292 BCE (about 3,380–3,360 years ago)
Limestone

For some reason, the stonemason working on this relief never completed it. Two figures can be seen, who have cobras on their foreheads, indicating that they are members of the royal family. The background around them has been cut back to create ‘raised relief’, but none of the details have been laid out yet.

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 20716

Unfinished business

Unfinished relief of a king and queen
332–30 BCE (about 2,360–1,690 years ago)
Sandstone

Although the sculptor has finished all the details of the figure of the king (right), parts of the queen are completely unfinished. Chisel marks are visible in front of her body, below her arm. The background has been cut back leaving the decoration in raised relief.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, N 144

A designer family

Double-sided stela of Dedia, overseer of designers at a temple dedicated to Amun
1290–1279 BCE (about 3,320–3,300 years ago)
Diorite

Dedia, who is celebrated on this commemorative stela, was an outline draughtsman or designer, who had reached the rank of 'overseer' (the person in charge) of all the outline draughtsmen at an important temple dedicated to the god Amun.

The names of six generations of his male ancestors – outline draughtsmen too – are listed on the back, together with the names of their wives. Many of the names are not of Egyptian origin, showing that they did not feel the need to change their names to be accepted as skilled workers. It is also clear that many generations of the same family worked in the same profession.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, N 204

The right kind of stone

Sculptors combined stones of contrasting colours and textures to create particular visual and symbolic effects. The red colour of quartzite was used to symbolise the sun, while shiny black basalt suggested the mud of the Nile and represented fertility. Many of these stones required lengthy and dangerous expeditions to quarries in the distant desert.

Frieze of cobras with inserted heads
1353–1336 BCE (about 3,380–3,360 years ago)
Red quartzite and grey granite

The Ashmolean Museum, University of Oxford. Allocated by the Egypt Exploration Society from excavations at El-Amarna, 1922, AN1922.92

Unfinished inlay in the shape of a face
1351–1334 BCE (about 3,380–3,360 years ago)
Sandstone

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 22275

Unfinished inlay in the shape of a wig
1351–1334 BCE (about 3,380–3,360 years ago)
Granite, formerly painted

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 24568

Basalt statue of the god Osiris
664–525 BCE (about 2,770–2,360 years ago)
Basalt

Oriental Museum, Durham University, EG3985

A change of mind

Stone relief showing changes to the original design
360 BCE–200 BCE (about 2,360–1,630 years ago)
Sandstone

The original design of this relief (illustrated in the line drawing below) showed three gods before a king, with a bull on an altar. A later inscription added at the bottom required sculptors to cover the original scene with a hard coating, probably gypsum plaster, and begin carving again. That coating gradually fell away, leaving the confusing image we see now.

The Egypt Centre, Swansea University, EC376
Re-drawn from an original drawing by Hannah Eggleston

In the sculptor's workshop

Sculptors were responsible for producing statues of gods, kings and wealthy people, usually made to go into temples and tombs. They were guided by strict rules about proportions and poses, but the stone itself frequently required sculptors to adapt. Their skill and their deep knowledge of the material is clear from surviving sculptures.

Statues were regarded as living beings – the word used to refer to sculptors could vary, but the most common was **sankh** which means 'the one who causes to live', or 'the one who gives life to'. This title emphasises the importance and power of the makers' role – they created life out of stone.

Getting one's image right

Every king of Egypt had their 'portrait' carefully managed by royal sculptors. Rather than a realistic likeness of the king, it showed a carefully chosen image that was decreed for statues and two-dimensional images of him. This could change during the course of a king's reign, and some kings introduced radically new forms of portraiture.

1. **Head from a statue of Amenemhat III, son of Senwosret III**
   1831–1786 BCE (about 3,880–3,830 years ago)
   Gabbro and basalt

   Fitzwilliam Museum, University of Cambridge, bequeathed by Oscar Charles Raphael, 1946, E.2.1946

2. **Head from a statue of Senwosret III**
   1874–1855 BCE (about 3,900–3,880 years ago)
   Granite

   Fitzwilliam Museum, University of Cambridge, given by Frederick William Green, 1930, E.37.1930

Portrait mode

This is one of a series of statues of Senwosret III found at a temple in Luxor. Although the features are typical of this king, each statue's face was subtly different due to variations in the stone being used and the fact that each one would have been made by a different team of craftsmen. For the Egyptians, the names written on the statues, rather than the facial features, conveyed the identity of the person.

3. **Statue of Senwosret III**
   1874–1855 BCE (about 3,900–3,880 years ago)
   Granodiorite

   On loan from the British Museum, EA686; 1905,1014.4

Sculptors at work

Reproduction of a copy of the original painting in the tomb of Rekhmire, Qurna, Egypt, 1504–1425 BCE
Painted by Nina M. Davies (1881–1965) in 1927
Paper, tempera paint and ink

At the top we see three people working on a limestone sphinx, one using a chisel, one polishing with a stone and a third applying a coat of plaster-like white paste, over which paint could be applied. Below, a large offering table receives a final polishing, under the direction of a supervisor.

The Metropolitan Museum of Art/Art Resource/Scala, Florence

How to carve a sphinx

Sculptors often worked from a model. Here, a grid carved into the surface of the stone helped the stone workers to copy the sphinx's shape. The stone would be cut away in rectangular chunks, probably in an open-air workshop, until the shaping was complete. Smoothing the edges completed the statue and removed all traces of the grid.

Sculptor's model for a sphinx
380–342 BCE (about 2,400–2,270 years ago)
Limestone

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 22445

Finished statue of a sphinx (with restorations)
380–342 BCE (about 2,400–2,360 years ago)
Limestone

Fitzwilliam Museum, University of Cambridge, given by the Egypt Exploration Society, 1971, E.11.1971

Work in progress

Partially finished objects give us an insight into the processes of their makers. Lines on a statue indicate where the next phase of cutting should take place. While the rough shaping probably happened outside, each type of stone was finished in a different workshop. Separate elements of a statue might be made in different types of stone.

Unfinished statue of a kneeling king with a blue crown
1351-1334 BCE (about 3,380–3,360 years ago)
Quartzite

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 21238

Hand from a statue of a princess holding a bird
1550–1292 BCE (about 3,380–3,360 years ago)
Quartzite

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 23024

A master at work

Unfinished head of a princess
1353–1336 BCE (about 3,380–3,360 years ago)
Quartzite

The skill of the sculptor who made this head of a princess suggests that it was made in a royal workshop. The recesses for eyes and eyebrows would have been fitted with glass, faience or stone inlays to give a life-like appearance. It was found in a house at Amarna, the new capital city of King Akhenaten, who revolutionised Egyptian religion during his reign. The house was near a complex of buildings, containing the home and workshops of a senior sculptor called Thutmosis, where many royal sculptures were created, including the famous bust of Nefertiti. Some were complete statues, while others were parts of composite figures, like this head.

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 21364

Almost finished!

Unfinished statuette of King Akhenaten
1353–1336 BCE (about 3,380–3,360 years ago)
Limestone and paint

Marks on the unfinished surface of the statuette suggest that the sculptor was interrupted before it was completed. Chisel marks show an advanced stage of shaping, while the red and black ink markings show areas that still need work. A vertical red line marks the centreline of the whole sculpture.

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 21221

Stone vessel makers

Many stone vessels have been found in tombs of kings and high officials, indicating these objects were only available to people at the top of Egyptian society. Granite, calcite and gypsum came from close to the Nile valley, while other stone, like quartz diorite, had to be brought from quarries far out in the deserts. The process of making the vessels was slow and laborious.

The word **hemut**, signifying a group of skilful craftsmen and artists, was written using a hieroglyph in the shape of a crank drill. This type of drill was used by the makers of stone vessels – suggesting that these craftsmen were seen as particularly expert makers.

Working with a crank drill

Reproduction of a copy of the original painting in the tomb of Rekhmire, Qurna, Egypt, 1504–1425 BCE
Painted by Nina M. Davies (1881–1965) in 1929
Paper, tempera paint and ink

Stone vessels were hollowed out using a weighted crank drill fitted with a hardstone drill bit. This stage of the work was labour-intensive. The long grey hair of this craftsman indicates he is an older man. He is shown sitting on a mud bench, rather than a finely-carved chair, suggesting his status is not very high.

The Metropolitan Museum of Art/Art Resource/Scala, Florence

The marks of making

Creating the basic shape of a stone vessel was done using chisels tipped with a series of teeth. The marks left behind show how the maker moved across the surface of the stone, tapping the chisel with a wooden mallet. Cutting out the inside was carried out using a crank drill or, alternatively, using a tubular drill, which produced small cylindrical cores of stone.

Unfinished calcite jar, with the marks of chiselling
2686–2160 BCE (about 4,700–4,180 years ago)
Calcite

Fitzwilliam Museum, University of Cambridge, given by the family of Frederick William Green, 1950, E.12.1950

Calcite drill cores
2686–2160 BCE (about 4,700–4,180 years ago)
Calcite

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology, 1913, E.22.1913

Hard core

Unfinished stone vessels show that a hollow was usually made at the top of the stone, after the basic shape had been completed. This depression would be used for centring the crank drill for cutting out the interior. This drill was turned using a circular motion, like stirring a large pot, and this operation can still be seen in workshops at tourist sites in Egypt today.

Unfinished cylinder jar
2686–2160 BCE (about 4,700–4,180 years ago)
Calcite

Fitzwilliam Museum, University of Cambridge, given by the Egyptian Research Account, 1898, E.61.1898

Completed cylinder jar with double rope design carved into the surface
3032–2707 BCE (about 5,150–4,700 years ago)
Gypsum

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology, 1913, E.138.1913

A choice stone

The best examples of stone vessel making come from early in Egypt's history, beginning about 6,000 years ago. Craftsmen used a variety of stones to create a wide range of finely-made vessels. This group are made of quartz diorite, a very hard stone found in quarries in the Eastern Desert.

1. **Bowl with an inverted rim**
   2639-2216 BCE (about 4,660–4,240 years ago)
   Quartz diorite

   Fitzwilliam Museum, University of Cambridge, bequeathed by Robert Greg, 1954, E.138.1954

2. **Open bowl**
   2639-2216 BCE (about 4,660–4,240 years ago)
   Quartz diorite

   Fitzwilliam Museum, University of Cambridge, bequeathed by Robert Greg, 1954, E.139.1954

3. **Miniature bottle**
   2639-2216 BCE (about 4,660–4,240 years ago)
   Quartz diorite

   Fitzwilliam Museum, University of Cambridge, bequeathed by Robert Greg, 1954, E.284.1954

Light containers

Calcite and gypsum are closely related translucent materials. Both are found close to the Nile valley and were frequently used to make stone vessels. Occasionally a craftsman might choose a special piece of stone for a particular effect, like this cup made from a calcite stalagmite or stalactite, showing the fine veins that formed as the stone grew.

4. Cup with a hook handle carved from a stalagmite or stalactite
Uncertain date
Calcite

Fitzwilliam Museum, University of Cambridge, given by George Davis Hornblower, 1939, E.287.1939

5. Jug with a handle
1550–1292 BCE (about 3,570–3,100 years ago)
Gypsum

Fitzwilliam Museum, University of Cambridge, bequeathed by Edward Towry Whyte, 1932, E.426.1932

Potters and workers in clay

The work of many different types of craftsmen appears on the walls of tombs, but potters almost never feature, and only a few of their names have survived. The hieroglyphs for writing the words ‘potter’ and ‘builder’ are the same, and the connection is probably that both makers worked using mud and clay – potters to make pots, and builders to make bricks.

Huge amounts of pottery have survived from ancient Egypt, made in hot and smoky kilns right across the country. Clay vessels were essential to everyday life and some were exported and shipped great distances, but the potter seems not to have been celebrated like other makers.

Mocking the potters

The life of the potter, from the ‘Teaching of Khety’
1292–1186 BCE (about 3,320–3,210 years ago)
Papyrus and ink

This piece of papyrus, written by a skilled scribe in a type of writing derived from hieroglyphs called hieratic, records part of the ‘Teaching of Khety’ (or ‘Satire of the Trades’). The text is written from right to left, and the last three lines talk about the work of potters and especially about their dirty working conditions.

On loan from the British Museum, EA10182,5; .10182.5

The potter is below the soil,
even though he’s still alive.

He gets more covered in mud than a pig
in order to fire his pots.

His clothes are as stiff as a rock;
his belt is in shreds.

Any air that enters his nose comes straight
from the kiln.

He turns his legs into pounders,
but is crushed himself …

From the ‘Teaching of Khety’

A would-be stone jar

This squat jar deliberately mimics a shape commonly used for stone vessels and the painted decoration is meant to imitate a hardstone, either breccia or red quartzite. These materials came from desert quarries and were hard to work, so a stone jar would have been much more expensive than this clay version.

1. Pottery vessel imitating a stone jar
3450–3300 BCE (about 5,520–5,270 years ago)
Clay and painted slip

Museum of Archaeology and Anthropology, University of Cambridge, MAA Z 16751

The origins of decoration

Hand-built using a very fine clay, this cylindrical vase includes decoration that combines two ideas. Originally vases like this were made of stone and had simple protruding handles – the wavy decorative band here suggests those – while the cross-hatching is inspired by the net slings used to suspend or carry pots of this type.

2. Cylinder jar with painted mesh decoration
about 3200 BCE (about 5,270–5,060 years ago)
Marl clay and paint

Fitzwilliam Museum, University of Cambridge, given by Sir William Matthew Flinders Petrie, 1895, E.86.1896

3. Meshed pot sling
1976–1648 BCE (about 4,000–3,670 years ago)
Vegetable fibre

Fitzwilliam Museum, University of Cambridge, given by the Beni Hasan Excavation Committee, 1903, E.120.1903

Hand-built pottery vessels

All early pottery was created by hand, by simple modelling or using coils of clay. The invention of creating pots by turning them on a stand made possible more uniform vessels, but this technique was only used by talented potters and only for finishing the rims. Polishing (burnishing) gave a shine to the finished pot, as well as making it more watertight.

4. Burnished black-topped red ware jar
4500–4000 BCE (about 6,520–6,020 years ago)
Nile silt clay

Fitzwilliam Museum, University of Cambridge, given by Sir William Matthew Flinders Petrie, 1898, E.70.1898

5. Boat-shaped dish
3450–3300 BCE (about 5,520–5,270 years ago)
Marl clay and paint

Museum of Archaeology and Anthropology, University of Cambridge, MAA Z 17094

6. Burnished flask
3150–2686 BCE (about 5,060–4,760 years ago)
Nile silt clay

Fitzwilliam Museum, University of Cambridge, provenance unknown, E.P.7

A maker's mark?

'Soul house'
2055–1650 BCE (about 4,080–3,670 years ago)
Clay

A 'soul house' is a modern name for this kind of clay model, shaped like a building, where the soul of the deceased could rest, with an open space in front for food offerings. They were produced, at a very particular period, to be placed directly above the burial place of people who could not afford a finely carved tomb.

The handprint underneath was almost certainly made accidentally when the house was put to one side to dry, before firing. The print is fairly small, so the person who left it – either the maker or another person in the workshop – may have been young.

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology in Egypt, 1907, E.58.1907

Making a house for a soul

The maker first created a wooden framework, before coating it with mud. Different levels of the house were created by adding slabs of clay and the staircases were formed by simply pinching them into shape. Miniature offerings modelled to look like loaves and pieces of meat, including the head of a bull, acted as permanent substitutes in the afterlife in case the supply of real food offerings stopped. During firing the wood of the framework burnt away, as is clearly visible in the empty blackened interior of one of the columns at the front of the house.

A variety of uses

Pottery vessels were used in many aspects of everyday life, but some pots were important pieces of burial equipment. This decorated jar was found in a house at the city of Amarna, while this canopic jar and its moulded lid was made to contain the internal organs removed from a body during mummification.

Jar with painted design
1550–1069 BCE (about 3,410–3,360 years ago)
Terracotta clay and paint

Paris, Musée du Louvre, Département des Antiquités égyptiennes, N 882 3

Canopic jar and lid
1479–1351 BCE (about 3,500–3,380 years ago)
Clay and paint

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology in Egypt, 1921, E.40.1921

Innovation and efficiency

Two parts from a potter's wheel
2119–1550 BCE (4,140–3,570 years ago)
Limestone and basalt

The introduction of potter's wheels in Egypt allowed potters to create more pots, more quickly, and in a variety of sizes and shapes that could not be made by hand. This example was used with a ceramic 'wheelhead' placed on the top, which formed the surface on which the pots were turned.

On loan from the British Museum, EA32622; 1900,0609.135

Complexity in clay

Mandrake fruit vessel
1479–1425 BCE (about 3,500–3,450 years ago)
Clay, painted slip and paint

Ancient Egyptian potters sometimes created vessels with sculptural shapes. This example was found in a tomb with other complex ceramics, including vases shaped like pregnant women and women carrying children. It may have links to childbirth – as well as rebirth – because the mandrake fruit resembles a female breast. Mandrake juice also has hallucinogenic and anaesthetic properties.

Fitzwilliam Museum, University of Cambridge, given by the Trustees of the Wellcome Institute, 1981, E.29.1982

Constructing a complex vessel

Images created from CT-scanning data have shown how this vessel is made. The potter has combined moulded and hand-built elements to create a complicated design of six mandrake fruits attached to a wheel-made circular base, tied together with a loop at the top. Every part of the vessel was burnished (polished) which strengthened the pot and made it more watertight, as well as producing a surface with a high shine. Decoration was then applied before it was fired.

Made in parts

Large storage vessel with blue painted decoration
3381–1336 BCE (about 3,380–3,360 years ago)
Clay and pigment

Vessels of this size were made in several sections and then assembled. Brush strokes show that the potter turned it upside down and applied a cream-coloured wash, before the blue colour was applied. Finally, details and outlines were painted on using darker clay. The blue was made from cobalt which was found in oases in the Western Desert.

Fitzwilliam Museum, University of Cambridge, given by the Egypt Exploration Society, 1929, E.25.1929

Working with fire

From everyday pots to bronze statues, and from shining gold amulets to distinctive deep blue ceramics, the ancient Egyptians harnessed fire to spectacular effect. Each technology had its own skilled practitioners (**hemut**) with the expert knowledge of managing working with fire.

The earliest Egyptian kilns date from about 7,600 years ago and were used for making pottery. Fire quickly came to be used in producing small metal objects, like pins, amulets and beads, cast in moulds. The Egyptians also used fire to make glass and an artificial ceramic called faience, as well as the first man-made pigment, now known as Egyptian blue.

Self-presentation

Egyptian monuments allowed their owners to show themselves as they wanted to be seen in the afterlife. In practice, this meant the inscriptions on these monuments recorded information like their most important jobs, where they worked and who they were related to. Stelae made for non-royal people were prime opportunities for this kind of self-presentation. They were often made to be part of a person's tomb equipment, calling for offerings to be left for the **ka**-spirit of the named person. Stelae were also sometimes set up in temples or places where special religious events took place.

Keeping it in the family

Stela of Mes, an overseer of gold workers,
and his family
1270–1170 BCE (about 3,300–3,200 years ago)
Limestone

The working of gold was a craft requiring precise knowledge of working with fire. Gold workers were important makers in ancient Egypt because gold was closely associated with royalty and divinity. Commemorative stelae like this, made for a high-ranking gold worker called Mes, often include family members. It is clear that craft knowledge often passed through generations within one family.

Oriental Museum, Durham University, EG590

Metal workers in action

Reproduction of a copy of the original painting in the tomb of Rekhmire, Qurna, Egypt,
about 1504–1425 BCE
Painted by Nina M. Davies (1881–1965) in 1927
Paper and tempera paint

Bridgeman Images
Animation by Tomfoolery Ltd

Raw blue

Fragments of Lapis lazuli in its raw form
Uncertain date
Lapis lazuli

The colour of lapis lazuli has attracted makers and artists for thousands of years, but mining the stone was challenging. Roads to the mines in Afghanistan are difficult to negotiate and for many centuries lapis was extracted by heating and suddenly cooling the stone so that it shattered into small pieces.

The Egypt Centre, Swansea University, EC553

An early masterpiece in lapis lazuli

Lapis lazuli figure of a woman, made in two pieces
3325–2575 BCE (about 5,350–4,600 years ago)
Lapis lazuli

This statue, found in Egypt, is the largest lapis lazuli sculpture made at such an early date. Lapis lazuli was imported from Afghanistan. The amount entering Egypt was always limited due to the expense of importing it, and the carvers of this precious material would have been specialists.

The figure's pose, especially the crossed arms, suggest that it may have been carved in Mesopotamia, indicating that a trade route already existed between Egypt and the Middle East at a very early date.

The Ashmolean Museum, University of Oxford. Allocated by the Egyptian Research Account from excavations at Hierakonpolis, 1898, AN1896-1908.E.1057

Precious protection

Lapis lazuli amulet in the form of falcon-headed god
Uncertain date
Lapis lazuli

The head of this figure is carved with flowing curves, while the detail on the body is more simply engraved into the stone's surface, so it may have been carved by two different craftsmen. Amulets like this were made as protective symbols for use in life, as well as after death, placed within mummy wrappings.

On loan from the British Museum, EA60365; 1837,0714.4

Faience production lines

Shaped like the hieroglyphic sign hes, meaning praise, vases like these were used to pour water during offering rituals. Sixty-five examples with the name of Amenhotep II have survived, which were originally placed in his tomb in the Valley of the Kings.

Producing so many vessels seems to have involved the work of several faience workshops. This is clear from differences in their shape and decoration. The inscription on two vessels is almost identical. A third example is differently proportioned and decorated and was probably produced in another workshop.

1. **Faience** hes**-vase with inscription naming Amenhotep II**
   1427–1400 BCE (about 3,450–3,420 years ago)
   Faience and paint

   Fitzwilliam Museum, University of Cambridge, given by the family of Frederick William Green, 1950, E.18.1950

2. **Faience** hes**-vase with inscription naming Amenhotep II**
1427–1400 BCE (about 3,450–3,420 years ago)
Faience and paint

On loan from the British Museum, EA43042; 1906,0611.5

3. **Faience** hes**-vase with inscription naming Amenhotep II**
1427–1400 BCE (about 3,450–3,420 years ago)
Faience and paint

On loan from the British Museum, EA65350; 1939,0324.215

Figure of faience

The maker has shaped this shabti figure in a mould and then added an inscription before it was glazed and fired. Shabtis were regularly included in Egyptian burials from about 4,000 years ago. The inscription is a magic spell, written for a man called Psamtek, enabling the figure to do agricultural work in the afterlife on his behalf.

4. **Blue faience shabti for Psamtek**
650–525 BCE (about 2,670–2,550 years ago)
Faience

Fitzwilliam Museum, University of Cambridge, given by Hope Caulfield, 1896, E.1a.1896

Makers of Faience

Lapis lazuli was an expensive material and only available in small pieces. About 6,000 years ago, the Egyptians began to try to find a cheaper alternative, finally inventing the material we call faience, made of quartz or sand, limestone and plant ash or natron (a salty compound). The clay-like paste could be shaped by hand, thrown on a wheel or moulded. Faience needed to be fired at 800–1000°C and keeping the kiln at this temperature required large quantities of wood and charcoal. The appearance and quality of faience objects depended in part on the quality of the materials, but above all on the skill of the makers.

Celebrating a faience maker

Commemorative stela of the faience maker, Rekhamun
1295–1186 BCE (about 3,320–3,210 years ago)
Faience and paint

This bright blue stela shows a ‘maker of faience’ called Rekhamun worshipping Osiris, king of the afterlife. The word used for faience (**khesbedj**) was usually reserved for the more expensive lapis lazuli. Clearly the maker intended us to understand Rekhamun’s faience was as good as lapis. Although the design is well thought out, the maker (perhaps Rekhamun himself) struggled to make the curved line at the top meet the vertical line at the left smoothly.

On loan courtesy of National Museums Scotland, A.1956.153

Mastering colour

Yellow faience cosmetic pot of Amenhotep III and Tiye
1390–1352 BCE (about 3,410–3,380 years ago)
Faience

The maker of this yellow vessel has cut channels for inlaying blue faience, used for the inscription naming Amenhotep III and his wife, Tiye, and for the outline of a motif of water lilies (often called ‘lotuses’). The open flowers are inlaid with green at the base, while the closed buds have red dots at the tip. Each faience colour required a different temperature, so careful control of the kiln during firing was essential.

The vessel was almost certainly made to contain perfume or cosmetics for the royal couple’s use in the afterlife.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, E 4877

The Ram of Amun

Faience figure of a ram
1–70 BCE (about 2,020–1,950 years ago)
Faience

Figures of a walking ram usually represent one of the most powerful gods of Egypt, Amun. Small faience figures in this shape were popular amulets, but the size of this figure is very unusual. The faience maker has used a mould to create the shape, but X-radiography reveals that the faience cracked during firing.

Fitzwilliam Museum, University of Cambridge, bequeathed by A.J. Hugh Smith through the National Art-Collections Fund, 1964, E.6.1964

Black eyes for flies

Container for eye paint in the form of the god Bes
1550–1069 BCE (about 3,570–3,090 years ago)
Faience

The faience maker has created a typical figure of Bes, a popular god associated with protecting women and children, recognisable from his distinctive headgear and pose. Eye paint also had a protective role, by reducing the sun's glare, and it was also thought to keep away flies carrying diseases.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, N 4469

Charming frogs

Seven faience frog amulets inlaid with gold
1410–1310 BCE (about 3,430–3,330 years ago)
Faience and gold

The maker of these small frogs has inlaid them with gold, making them more valuable. Amulets in the shape of frogs were popular charms for women, perhaps because frogs were believed to reproduce easily and came to symbolise fertility. They were also placed in the wrappings around mummified bodies to symbolise rebirth.

Oriental Museum, Durham University, EG5382

Floral faience fittings

Palaces at the royal city of Amarna, occupied between 3,380–3,360 years ago, were decorated with brightly-coloured faience inlays representing plants of various kinds. The inlays were embedded in a clay mortar. The mortar impressions here seem to have numbers on the front, suggesting that the inlays were set into the mortars before they were fixed to the walls.

1. **Mortar impressions with ancient numbering**
   1550–1292 BCE (about 3,570–3,320 years ago)
   Plaster stone

   Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 25759; ÄM 25760; ÄM 25761

2. **Faience inlays**
   1550–1292 BCE (about 3,570–3,320 years ago)
   Faience

   Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 30560; ÄM 35496; ÄM 35495

Flamboyance in faience

Tile showing a bull in relief
1184–1153 BCE (about 3,210–3,180 years ago)
Faience

This tile almost certainly comes from a palace of King Ramesses III at a site northeast of Cairo. The mud brick walls of the palace were inlaid with tiles showing the abundance of the natural world (plants, flowers, animals) and symbols of royalty. It is likely that there were many faience workshops solely producing tiles for the palace.

Fitzwilliam Museum, University of Cambridge, given by G.S. Bird, 1934, E.202.1934

The Glassmaker's Art

Glass production in Egypt began later much later than faience, around 3,500 years ago. The objects produced at this time were the most innovative glass creations of ancient Egyptian history, while glass products made later were much poorer in quality. There is some evidence that the glass industry was closely controlled by the royal court at the time.

Until recently, it was thought that Egyptians did not make glass themselves but only worked the imported material. A shipwreck discovered in the late 1980s, off the coast of Turkey, contained more than 200 glass ingots, all of which have recently been shown to be produced in Egypt.

Making glass

Making glass objects involved two stages of production: glass making and glass working. Most of our best evidence of glass making comes from one site, where remains have been found of what are believed to be glass-making furnaces, made of mud brick with especially thick walls (kilns 2 and 3).

Glass was made from quartz or sand and limestone, ground up and mixed with plant ash or a salty compound (natron). It was heated to about 1150°C, at which point the mud bricks were at risk of melting, so extra mud was used to line the inside. This meant the furnace simply needed to be re-lined, rather than rebuilt, each time.

Image credit: Courtesy of The Egypt Exploration Society. Drawing by Paul T. Nicholson

A fruitful masterpiece

Glass bottle in the form of a bunch of grapes
1295–1069 BCE (about 3,320–3,090 years ago)
Glass

Shaped like a bunch of grapes, this vessel was made around a dried mud core and dipped into molten glass. While the glass was still hot, the maker added molten glass rods around the neck, before attaching extra lumps of glass to represent grapes. Finally, the core was carefully scraped out.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, E 11610

Fluidity of form

Glass vessel in the form of a fish
1550–1292 BCE (about 3,560–3,320 years ago)
Glass

Bottles in the shape of fish were popular at this time, possibly as cosmetic containers. The highly skilled maker (a **hemu**) has combined the complexity of different techniques to capture the fluid movement of the fish in the molten glass. The body is made of blue glass shaped around a mud core, later removed. Next, molten white and yellow glass rods were applied and dragged to create the fish's scales. The tail is solid glass, while the fins are made of rods of coloured glass. The dorsal fin is a particularly fluid shape. The mouth and cheeks are outlined with yellow glass, and the eyes are white circles with swirls of black.

On loan from the British Museum, EA55193; 1921,1008.127

Carving glass

The maker of this vessel was trying something new - using a solid piece of opaque glass to produce a type of jar normally made of stone. Perhaps it was made by a stonemason, with the necessary skills and tools, rather than a glassworker. The lid, rim and base are overlaid with sheet gold, possibly by another specialist worker.

1. Glass cosmetic jar with separate lid
1550–1292 BCE (about 3,570–3,320 years ago)
Glass, gold, plaster and wax

On loan from the British Museum, EA24391; 1892,1212.5

Making glass vessels

Blue vessels with swirling coloured decoration were very popular at Amarna. They were made of glass rods twirled around a mud core, other rods in contrasting colours were overlaid and pressed on. The glassworker would then use a pointed tool to drag the glass to form swirls. Handles were applied using thicker rods of glass. All this work had to be completed before the glass cooled too much.

The rods of glass were made in a variety of colours, thicknesses and lengths. Many examples, plus fragments of failed vessels and the remains of kiln linings have survived close to glassmakers' workshops.

2. Vase with swagged decoration
1539–1075 BCE (about 3,560–3,100 years ago)
Glass

The Ashmolean Museum, University of Oxford. Purchased, 1965, AN1965.294

3. A fragment from a failed glass vessel
1550–1292 BCE (about 3,560–3,100 years ago)
Glass

The Egypt Centre, Swansea University, EC2193

4. A piece of glass and two glass rods
1545–1295 BCE (about 3,570–3,320 years ago)
Glass

UCL Petrie Museum of Egyptian and Sudanese Archaeology, University College London, LDUCE-UC22911

5. Kiln lining with blue glazed material
Uncertain date
Clay, glaze

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology in Egypt, 1910, E.78.1910

Glass used with stone

The Egyptians called glass ‘the stone of a type that flows’. This may be why they sometimes worked with glass as if it was a stone. Just as they combined different types of stone to achieve a variety of effects, they also used glass in conjunction with stone.

The glass wig of this statuette appears to have been rubbed with a hard stone, a technique used to add a finishing polish to stone statues.

6. Heart amulet with a human head
1545–1215 BCE (about 3,570–3,210 years ago)
Stone and glass

Oriental Museum, Durham University, EG5852

7. Head from a statuette
about 1370 BCE (about 3,390 years ago)
Glass and steatite (soap stone)

Oriental Museum, Durham University, EG4347

Glass pretending to be stone

Small, narrow containers for holding perfume or scented oils were first produced in Egypt around 3,200 years ago. They were originally carved from calcite – often called alabaster – from which they acquired the name ‘alabastron’. Soon Egyptian craftsmen began producing examples in more expensive materials, especially glass, with the molten material allowing them to imitate elaborate patterns.

The shape of this glass alabastron indicates that it was made in the period when Egypt was under Greek rule. The maker has deliberately copied the wavy veins that are found in certain types of calcite, especially pieces from stalagmites and stalactites.

1. **Glass alabastron with decoration imitating veining**
   332 BCE–395 CE (about 2,360–1,710 years ago)
   Glass

   Oriental Museum, Durham University, EG5103

2. **Alabastron made from veined calcite, carved from a stalagmite or stalactite**
   2675–2156 BCE (about 4,700–4,180 years ago)
   Calcite

   Fitzwilliam Museum, University of Cambridge, given by George Davis Hornblower, 1939, E.212.1939

Experiments with glass

Having mastered the art of making glass vessels, it seems as if Egyptian glassworkers wanted to experiment in making objects normally produced in other materials. Pilgrim flasks - round vessels with two looped handles, usually made of pottery - were first produced in Syria and the Eastern Mediterranean but the shape was adopted by Egyptian makers around 3,500 years ago. In the same way, single handled pottery flasks from Cyprus began to be copied in glass in Egypt around the same time.

3. Pilgrim flask made of blue glass
1539–1292 BCE (about 3,560–3,320 years ago)
Glass

The Ashmolean Museum, University of Oxford. Presented by Mr H.S. Whitaker, 1939, AN1939.36

4. Miniature pilgrim flask made of calcite
1317–1213 BCE (about 3,340–3,240 years ago)
Calcite

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology, 1921, E.19b.1921

5. Flask made of dark blue glass
1550–1425 BCE (about 3,570–3,450 years ago)
Glass

Paris, Musée du Louvre, Département des Antiquités égyptiennes, AF 2624

6. Cypriot pottery flask
1446–1200 BCE (about 3,470–3,220 years ago)
Clay

Fitzwilliam Museum, University of Cambridge, given by Sir Henry Bulwer, 1892, GR.44.1892

Inlays for others

Statues and coffins made of wood or stone often had inlaid eyes and, when made of glass, they would have shone in a realistic way. Other inlays were used to highlight inscriptions on coffins and decoration on shrines. The size of the inlays usually indicates the overall size of the objects they were made for.

Coffin makers and sculptors would not have had access to glass furnaces and would have relied on the glassworkers to produce the inlay pieces they needed.

7. Glass eye rim from a large coffin
1550-1069 BCE (about 3,570–3,090 years ago)
Glass

Fitzwilliam Museum, University of Cambridge, bequeathed by Edward Towry Whyte, 1932, E.117.1932

8. Jackal head inlay, possibly from a frieze or a large coffin
Uncertain date
Glass and fritted glass

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.3254.1943

Trying something different?

This statue was carved out of a material that is something between glass and faience. The sculptor has worked the material as if it were stone, cutting away excess material to create the rough shape, before carefully carving the details of the pleated linen kilt and the musculature of the torso. An inscription gives the titles of Sheshonq V.

9. Torso of Sheshonq V in glassy faience
767–730 BCE (about 2,800–2,760 years ago)
Glassy faience

Fitzwilliam Museum, University of Cambridge, given by the Egypt Exploration Society, 1969, E.6.1969

I have seen the smith at work at the mouth of his furnace.

His fingers are like the skin of a crocodile

and he stinks more than fish eggs.

From the 'Teaching of Khety'

Workers in Bronze

Bronze is a mixture (alloy) of copper and tin, which needs a temperature of about 1000°C to melt. Although a few bronze objects have been found that date back about 4,800 years, the Egyptians first regularly made bronze about 1,200 years later. Before this, metalworkers first worked with pure copper and then a naturally occurring mixture of copper and arsenic, which made the copper much harder.

Bronze, and bronze with added lead, had working properties that were suitable for making various objects, from tools and weapons to complex sculptures.

Casting Metal

Reproduction of a copy of the original painting in the tomb of Rekhmire, Qurna, Egypt,
1479–1400 BCE
Painted by Nina M. Davies (1881–1965) in 1927
Paper, tempera paint and ink

Metalworkers are shown pouring liquid metal into a large mould to make copper doors, illustrated at the top right. A group of men bring tongs and blowpipes for forcing air into the furnace to increase the temperature. We get a sense of the heat from the man at the right shielding his face with his hand.

The Metropolitan Museum of Art/Art Resource/Scala, Florence

Crowning glory

Bronze could be inlaid with other materials, in this case different pieces of coloured glass. This stylised ostrich feather is part of an atef-crown from a figure of Osiris, king of the underworld. The maker has incorporated two tangs (protruding pieces of metal) with holes for attaching it to the main part of the crown.

1. **Part of an inlaid headdress from a statue of Osiris**
   715–332 BCE (about 2,770–2,360 years ago)
   Bronze and glass

   The Ashmolean Museum, University of Oxford. Purchased, 1965, AN1965.173

Man’s best friend

The maker of this small figure has skilfully created a vivid image of a dog that is both resting and alert. It is not clear why the figure was made, but it fits comfortably in a hand. Popular companions of the wealthy, dogs were occasionally buried in coffins bearing their names.

2. Figure of a resting dog
664–332 BCE (about 2,770–2,360 years ago)
Copper alloy/bronze

Fitzwilliam Museum, University of Cambridge, given by George Davis Hornblower, 1939, E.13.1939

Costly bronze

Objects made from metals, including bronze, were valuable and were carefully stored. Records of work in the Valley of the Kings show that the stoneworkers were issued with chisels each day, which had to be returned at the end of work. The condition of the chisel was recorded both when it was issued and returned.

3. Ostracon recording bronze chisels issued to workers in the Valley of the Kings
1545–1065 BCE (about 3,570–3,090 years ago)
Limestone and ink

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.6124.1943

4. Bronze chisel, with an owner’s mark
Uncertain date
Solid cast bronze

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.4398.1943 5.

5. Blade from an adze
Uncertain date
Solid cast bronze

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology in Egypt, 1926, E.6.1926

Casting bronze objects

The best-known technique used by Egyptian metalworkers is lost-wax casting. The starting point for this is a wax model, often created around a core made of wet sand. A mould would be formed around the model, then heated and emptied of wax, before being filled with molten metal poured from a crucible.

1. Bronze statue of a man, with the remains of the quartz sand core
1075–656 BCE (about 3,090–2,760 years ago)
Quartz sand, bronze and gold

On loan from the British Museum, EA22784; 1889,0209.1

2. Statuette of a cat with the quartz sand core removed
753–336 BCE (about 2,770–2,360 years ago)
Copper alloy/bronze

Fitzwilliam Museum, University of Cambridge, given by the family of Frederick William Green, 1950, E.19.1950

3. Crucible with traces of copper inside
2216–2166 BCE (about 4,240–4,190 years ago)
Pottery

UCL Petrie Museum of Egyptian and Sudanese Archaeology, University College London, LDUCE-UC18146

Combining materials: bronze and wood

As well as complete bronze statues, metalworkers often worked to produce smaller bronze parts for other objects. Statuettes were often made of separate parts that would be attached, with the main figure made of stone or wood, with bronze elements added – crowns, body parts or other fittings.

4. Statuette of an ibis
664–332 BCE (about 2,770–2,360 years ago)
Bronze (head, feet and legs), wood, cloth, gesso and gold (body)

Fitzwilliam Museum, University of Cambridge, bequeathed by Sir Robert Greg, 1954, E.205.1954

5. Head and neck of an ibis in bronze
664–332 BCE (about 2,770–2,360 years ago)
Copper alloy/bronze

Fitzwilliam Museum, University of Cambridge, bequeathed by Major Robert Grenville Gayer-Anderson, Pasha, 1945, received 1949, E.GA.64.1949

6. Bird's foot made of bronze
664–332 BCE (about 2,770–2,360 years ago)
Copper alloy/bronze

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.3409.1943

Bronze wig for a statue

The maker of this wig has cast it in one piece, using the lost-wax technique, with deep channels, perhaps to take colourful inlays in other materials, like lapis lazuli. This type of wig was first introduced centuries earlier, and shows how Egyptian makers could maintain long-held traditions, even in new materials.

1. **Bronze wig for a statue**
   2119–1794/93 BCE (about 4,140–3,820 years ago)
   Copper alloy/bronze

   The Borthwick Collection

Fitting for a king

The **nemes** headdress was worn only by the kings of Egypt. It was originally formed of a striped cloth that completely covered the king's head. On the front of this example is a uraeus, a symbol of royalty. The hole at the front was used to attach it to a statue, made of either bronze, wood or stone.

2. **Bronze** nemes **headdress from a royal statue**
   Uncertain date
   Copper alloy

   Paris, Musée du Louvre, Département des Antiquités égyptiennes, N 783 G

The secret of ‘black bronze’

Torso of a female statue in ‘black bronze’ inlaid with gold
1069–664 BCE (about 3,090–2,690 years ago)
Bronze and gold

The necklace and elegant dress of this figure have been inlaid with gold over a very thin black surface (patina), which is sometimes called ‘black bronze’. A recent study shows that metalworkers used many different methods to create this effect, and it seems likely that each workshop had its own technique. But, despite technical analysis, the exact recipe used by the maker of this object still remains a mystery.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, don, Société des Amis du Louvre, E 27430

Adding inscriptions

Bronze standing statue of Khonsuirdis
664–525 BCE (about 2,690–2,640 years ago)
Bronze and silver

The maker cast this statue in one piece, apart from a small figure that originally stood on the block Khonsuirdis is holding. The inscription running from his shoulder to his waist, giving the royal names of the king he served (Psamtek I), was part of the original casting. The other inscriptions were scratched into the surface after the bronze was cold.

On loan from the British Museum, EA14466; 1928,0524.1

A golden family

The gold worker Panehsy commissioned a stela dedicated to the god Ptah, on which the names of his parents also appear. On the round-topped stela we see him with his father, Paraemheb, at the top. Lower down are members of his family in two rows, including his mother, Tamit, and four gold workers. Family members clearly often worked in the same trade.

1. **Rectangular commemorative stela of a gold worker called Panehsy**
   1295–1215 BCE (about 3,320–3,210 years ago)
   Limestone

   Fitzwilliam Museum, University of Cambridge, given by Professor William James Lewis, 1899, E.195.1899

2. **Round-topped stela of three gold workers, including Panehsy, his father Paraemheb and their family**
   1295–1215 BCE (about 3,320–3,210 years ago)
   Limestone

   On loan from the British Museum, EA141; .141

Workers in Gold

Gold was available from the deserts to the east of the Nile valley, but as the Egyptians moved to conquer Nubia (which included parts of what is now Sudan) they took control of the mines there – as well as the labour to extract the gold.

The melting point of gold is quite low, and evidence from sites like Amarna show that gold was heated and worked within domestic spaces. Since gold is a soft material, details could be added later, by engraving into the surface using a harder tool.

Metal Working

Reproduction of a copy of the original painting in the tomb of Rekhmire, Qurna, Egypt, 1504–1425 BCE
Painted by Nina M. Davies (1881–1965) in 1928
Paper, tempera paint and ink

A metal worker sits on a simple low stool in front of a brazier. He uses a blowpipe to increase the heat of the fire and holds tongs for manipulating the metal he is working. This may well be gold as the melting point is low enough for it to be worked on a simple brazier.

The Metropolitan Museum of Art/Art Resource/Scala, Florence

Requests for gold

Egypt had a reputation as a country rich in gold, as is clear from these letters sent by Tushratta, ruler of an ancient empire called Mitanni, to King Amenhotep III and his wife Tiye. In one (left), the writer is amazed that the Egyptians treated gold bricks almost as if they were made of copper, and in the other (right) he complains that he has been fobbed off with statues of gilded wood rather than ones of solid gold.

1. **Letter requesting a large quantity of gold**
   about 1400 BCE (about 3,425 years ago)
   Clay

   On loan from the British Museum, E29791; 1888,1013.70

2. **Letter requesting solid gold statues, rather than wooden ones overlaid with gold**
   about 1400 BCE (about 3,425 years ago)
   Clay

   On loan from the British Museum, E29794; 1888,1013.39

Casting gold

The recesses in this stone are for casting jewellery and decorative elements. The sloping sides allowed the metal to fill the moulds completely. This mould was probably for casting gold, since bronze casting requires a temperature that cracks limestone. The maker would heat the gold until it was liquid, pour it into the moulds and then leave it to cool. Once hardened, it was smoothed and polished.

3. Limestone mould for casting gold jewellery
1353–1336 BCE (about 3,380–3,360 years ago)
Limestone

The Ashmolean Museum, University of Oxford. Allocated by the Egypt Exploration Society from excavations at El-Amarna, 1931, AN1931.483

Molten manipulation

These elaborately made tongs are made of a single piece of bronze. The ends are shaped like hands. Bronze has a higher melting point than gold and would have been suitable for working that metal over fire or brazier.

4. Bronze tongs for manipulating molten gold
1646–1295 BCE (about 3,570–3,320 years ago)
Bronze

UCL Petrie Museum of Egyptian and Sudanese Archaeology, University College London, LDUCE-UC46979

Impressions of royalty

These fragments of gold leaf still have traces of royal names, including one of a king called Siptah who reigned about 230 years after Amenhotep III. They may have come from a palace doorway or from a piece of gilded burial equipment from Siptah's tomb in the Valley of the Kings.

1. Gold foil with the impression of cartouches
1202–1201 BCE (about 3,220–3,210 years ago)
Gold

Fitzwilliam Museum, University of Cambridge, provenance unknown, E.MW.73a; E.MW.73b; E.MW.73c; E.MW.73d

Gold jewellery

Specialist gold workers used many different techniques to create jewellery: shaping by moulding and hammering, soldering pieces of sheet gold together and granulation (creating tiny drops of gold which were then fused to a support). Only the wealthiest could afford gold jewellery, which was often given to high-achieving officials by the reigning king as a reward.

2. Pendants with granulation decoration
600–400 BCE (about 2,620–2,420 years ago)
Gold

Rijksmuseum van Oudheden, Leiden / National Museum of Antiquities, Leiden, The Netherlands, AO 1 c (a); AO 1 c (b)

3. Amulet in the shape of a falcon
Uncertain date
Gold

Fitzwilliam Museum, University of Cambridge, bequeathed by Edward Towry Whyte, 1932, E.307.1932

4. Hairpin with a head in the shape of the cow-goddess Bat
1900–1601 BCE (about 3,920–3,630 years ago)
Gold

Fitzwilliam Museum, University of Cambridge, bequeathed by Major Robert Grenville Gayer-Anderson, Pasha, 1945, received 1947, E.GA.158.1947

The magic inside

This gold cylinder was made to hold a small piece of papyrus, worn around the neck of a man called Shaq, whose name appears in the inscription. The case is made of a single sheet of gold with a plug at the bottom secured by a piece of wire.

5. Case for holding a magical protective spell for a man called Shaq
946–722 BCE (about 2,900–2,800 years ago)
Gold

Fitzwilliam Museum, University of Cambridge, given by Dermot Horace Thomas Hanbury, 1940, E.12.1940

Added value

This small figure is made of expensive lapis lazuli, and the maker has made it even more costly by the added gilding, emphasising that its owner was a wealthy person. The goddess Taweret is always shown as a heavily pregnant hippopotamus, and it is likely that this figure belonged to a woman.

6. Gilded lapis lazuli figure of the goddess Taweret
Uncertain date
Lapis lazuli and gold

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 20599

A gleaming palace doorway

Faience tiles with gilded hieroglyphs from a palace doorway
1550–1292 BCE (about 3,570–3,320 years ago)
Faience and gold

From archaeological evidence, it is clear that Egyptian royal residences would have been showy places. These faience tiles bear the name of Amenhotep III in gilded letters on bright blue faience. They come from one of this king's many palaces. The blue (suggestive of lapis lazuli) and gold showed off the king's power and wealth.

On loan from the British Museum, EA58953,a-d; 1928,0114.2.a-d

Mass production

The use of open moulds enabled craftsmen to produce large numbers of objects from the same batch of material relatively quickly. Dozens of protective amulets, usually made of faience, could be included within the wrappings around a mummified body. The possibility of mass producing these reduced their cost and enabled people who were less wealthy to be buried with these protections.

The same was true for shabtis, magical figures for carrying out work in the afterlife on behalf of their owners. Receipts from around 3,000 years ago, for purchasing a complete set of shabtis, show that it consisted of 365 basic workers, plus an additional 36 overseer shabtis.

A bespoke shabti for Sennedjem

This shabti was carved by hand to be buried with its owner – a senior craftsman – to carry out agricultural work for his behalf in the afterlife. Shabtis were often shown holding hoes and mattocks, with a basket of seed on their backs. They were originally provided as single figures, carved of wood, stone, clay and even wax.

1. **Hand-made stone shabti made for a senior craftsman called Sennedjem**
   1295–1215 BCE (about 3,320–3,210 years ago)
   Limestone and paint

   Fitzwilliam Museum, University of Cambridge, bought through Ernest Alfred Thompson Wallis Budge, 1887, E.9.1887

Mass production

With the possibility of making moulded shabtis in faience, clay and bronze, the numbers of shabtis buried with an individual increased. They could be made speedily using open moulds. The maker would press the material into the back of the mould, tip it out to dry, ready for firing in a kiln, before going on to prepare the next shabti.

2. Shabti mould
Uncertain date
Clay

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.2664.1943

3. Blue faience shabti made for Maatkare (daughter of King Pinedjem I)
1070–1032 BCE (about 3,090–3,060 years ago)
Faience and paint

Fitzwilliam Museum, University of Cambridge, bought through Ernest Alfred Wallis Thompson Budge, 1886, E.12.1887

4. Uninscribed green-glazed shabti
1076–335 BCE (about 3,090–2,360 years ago)
Faience

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology, 1912, E.54.1912

5. Clay shabti painted blue to imitate faience
1070–714 BCE (about 3,090-2,360 years ago)
Clay and paint

Fitzwilliam Museum, University of Cambridge,
given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.2627k.1943

6. Clay shabti with traces of white and yellow paint
1292–1186 BCE (about 3,320–3,210 years ago)
Clay and paint

Fitzwilliam Museum, University of Cambridge,
given by the Egypt Exploration Fund, 1900, E.153.1900

7. Sun-dried mud shabti painted blue to imitate faience
924–889 BCE (about 2,950–2,910 years ago)
Sun-dried mud and paint

Fitzwilliam Museum, University of Cambridge,
given by the Egyptian Research Account 1896, E.92b4.1896

8. Bronze shabti made for a senior general called Wendjebaendjed
1050–1000 BCE (about 3,070–3,020 years ago)
Copper alloy/bronze

Fitzwilliam Museum, University of Cambridge, bequeathed by Robert Greg, 1954, E.148c.1954

9. Mould for an amulet in the form of an Osiris figure
664–332 BCE (about 2,690–2,360 years ago)
Limestone

The Egypt Centre, Swansea University, EC660

The work of the jewellers

Egyptian jewellers worked with other makers – in glass, faience and gold – to create a wide range of decorative pieces. Their inspiration came from the natural world, protective symbols or images of gods.

Protective charms (amulets) were the most popular items, intended to guard people from disease during their lifetimes, and also to provide eternal protection after death. During mummification, amulets were placed on parts of the body or wrapped among the bandages. Other popular types of jewellery included rings, strands of beads and elaborate broad collars, designed to look like garlands of flower petals.

The jeweller bores with his drill into all kinds of hard stones.

When he has finished the inlays, his arms are worn out with exhaustion.

He sits down as the sun sets,

and his knees and back are bent double.

From the ‘Teaching of Khety’

Seemingly simple

Made in white glazed faience, this ring may seem simple but it is decorated with two different coloured glazes. These had to be applied with great care so that they did not run or merge together.

1. Faience ring decoration in mauve and red glaze
1345–1335 BCE (about 3,600 years ago)
Faience

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.6484.1943

Moulding a faience ring

Moulds for making faience objects were almost always made of clay. The maker would have pressed the faience paste firmly into the mould, allowed it to dry briefly and then tipped it out to harden before firing. The object is shaped like an elaborate eye, called **wedjat** from the Egyptian word for health and protection.

2. Moulds for a wedjat **eye and the shank of a ring**
1345–1335 BCE (about 3,600 years ago)
Clay

Fitzwilliam Museum, University of Cambridge, possibly given by the Egypt Exploration Society, 1933 E.Misc.56.45; given by Greville John Chester, 1891, E.98.1891

Creating colour

The ring was made in two parts, formed in separate moulds and joined together using more faience. The faience worker added manganese and cobalt to the mixture to make the mauve colour, which is unusual. The white of the eye is glazed with a salty material called antimonite.

3. Ring in the form of a wedjat **eye**
1345–1335 BCE (about 3,600 years ago)
Faience

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.6483.1943

Numbered rosettes

The rosettes are inlaid with red jasper, with triangular glass infills in-between. Loops on either side allow them to be strung together. On the back are embossed hieroglyphic numbers (23, 18 and 35), probably added by the jeweller to show how they should be strung together.

4. Inlaid rosettes designed to be strung together
1479–1425 BCE (about 3,500–3,450 years ago)
Gold, glass and gemstone (jasper) in a modern stringing

Fitzwilliam Museum, University of Cambridge, given by George Davis Hornblower, 1939, E.67.1939

A shortage of materials?

Each bead consists of two flies, with a spiralled piece of gold between them forming two loops through which a string could pass. The jeweller has used the **cloissoné** technique to create 'cells' for glass and jasper inlays. The flies' bodies have two different colours of glass (dark blue for the bodies, and lighter blue for the wings). Although the eyes look like they are made of the same material, some are expensive jasper, while the others are slightly cheaper red glass. Perhaps the jeweller did not have enough jasper for all the flies.

Flies may seem like an odd motif for a piece of jewellery. It seems likely that they were created as amulets to protect the wearer from diseases carried by flies.

5. Beads in the shape of flies arranged back to back
1550–1069 BCE (about 3,500–3,100 years ago)
Gold, glass and gemstone (jasper)

Fitzwilliam Museum, University of Cambridge, given by George Davis Hornblower, 1939, E.67a.1939

Capturing a moment of intimacy

This vivid image of the royal family was made during the reign of Akhenaten. The king kisses his wife, Nefertiti, flanked by two daughters. Akhenaten focussed Egyptian religion around a form of the sun god called Aten – whom Akhenaten called 'my father' – and also around his immediate family. Images of the king with his family were much more prominent during Akhenaten's reign than at other times. The sun's colour is evoked in the choice of red carnelian for this gem. Between the figures are traces of carving showing pleated fabric and it seems that the object was at some point more finished than it appears now. Perhaps there was a decision to change the design.

6. Partially carved gem of Akhenaten and his family, possibly for a necklace
1352–1336 BCE (about 3,800–3,350 years ago)
Gemstone (carnelian)

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.4606.1943

Moulded gold ring

After pouring molten gold into an open mould and leaving it to cool, the maker removed the ring and smoothed off the rough edges. Decoration was then added using a sharp pointed tool – here a standing figure of a goddess named Mut.

7. Gold ring with a figure of the goddess Mut
1550–1069 BCE (about 3,750–3,090 years ago)
Gold

Oriental Museum, Durham University, EG6054

A simple, but clever design

A gold worker has created a really clever design. What looks like three individual pieces are made of a single piece of gold wire, folded at two ends, separated by a second piece of wire. The two ends of the longer piece meet at the centre, where thinner gold wires conceal the join.

8. Open bangle
2100–1901 BCE (about 4,120–3,930 years ago)
Gold

Fitzwilliam Museum, University of Cambridge, bequeathed by Major Robert Grenville Gayer-Anderson, Pasha, 1945, received 1947, E.GA.300b.1947

Long-lasting floral collars

Collars made of beads imitating flower petals were popular items of jewellery from early in Egyptian history, which could be worn or placed on statues. The Egyptians called them **wesekh**, which means 'the wide/broad one'. Examples here are made from beads strung together and show the maker's skill in creating different coloured faience.

Another fragment here shows an example made of gold inlaid with different coloured stones, probably part of a broad collar made for a statue, which would have been part of someone's burial equipment. The flowers include water lilies (often called lotuses), which were symbols of new life and rebirth.

1. Fragment from an inlaid pectoral
664–525 BCE (about 2,700–2,550 years ago)
Silver, gold, Egyptian alabaster and gemstones (lapis lazuli, turquoise and carnelian)

Paris, Musée du Louvre, Département des Antiquités égyptiennes, E 25379

2. Beads from a broad collar
1550–1292 BCE (about 3,380–3,360 years ago)
Faience

Fitzwilliam Museum, University of Cambridge, given by the Egypt Exploration Society, 1933, E.5.1933

3. Beads and amulets from a broad collar, in a modern stringing
1550–1295 BCE (about 3,500–3,300 years ago)
Faience and gemstone (carnelian)

The Egypt Centre, Swansea University, W9

4. Beads forming a broad collar, in a modern stringing
1550–1069 BCE (about 3,500–3,100 years ago)
Faience

Paris, Musée du Louvre, Département des Antiquités égyptiennes, E 2152

5. Poppy seed head-shaped pendants strung between barrel-shaped beads
1550–1295 BCE (about 3,500–3,300 years ago)
Gemstone (carnelian)

Fitzwilliam Museum, University of Cambridge, given by the British School or Archaeology, 1913, E.28.1913

A combination of gemstones

The paler, purple beads are amethyst, which was popular at certain periods of Egyptian history. Kings would send major expeditions to quarries in the Eastern Desert to extract the stone. The darker beads are garnets, which often contain fractures, making them difficult to work. The jeweller who made this was clearly very skilled (a **hemu**).

6. String of amethyst and garnet beads
1985–1648 BCE (about 4,000–3,700 years ago)
Gemstones (amethyst and garnet)

Fitzwilliam Museum, University of Cambridge, given by the Egypt Exploration Fund, 1899, E.208.1899

Makers of linen and basketry

Linen, made from the flax plant, is the most common surviving textile from Egypt. Flax was harvested at different stages: young, green fibres made fine cloth, while older flax created rougher fabrics. Processing needed skilled workers (**hemu**) to turn the raw flax into yarn. Most textile workers were women, some holding titles like ‘supervisor of weavers’, although men were more likely to be in overall charge of workshops.

As well as linen and wool, other natural fibres like papyrus, palm leaves and grasses were woven to be used in furniture, sandals, brushes, mats and baskets. The dry climate of Egypt has preserved many of these items.

Weavers at work

In this ancient model of a weavers’ workshop, two women are weaving on a ground loom, while another woman spins thread using a spinning bowl to keep the fibres in tension.

The same type of loom is shown on this clay bowl, one with weft threads indicating that weaving was underway, while a second loom is being laid out by two weavers.

1. **Model from a tomb showing spinning and weaving textiles**
   2055–1773 BCE (about 4,080–3,800 years ago)
   Wood, gesso and paint

   Lent by National Museums Liverpool, World Museum, 55.82.4

2. **Bowl showing a loom**
   about 3700 BCE (about 5,500–6,000 years ago)
   Clay and paint

   UCL Petrie Museum of Egyptian and Sudanese Archaeology, University College London, LDUCE-UC9547

Dress to impress

Dress with fringing
2504–2347 BCE (about 4,500 years ago)
Linen

The weaver who made this dress has created the skirt using a single piece of linen, turned 90° so that the bottom of the weave created a vertical fringe up the side of the garment. The V-shaped neckline is made from two more pieces of linen, stretching from the waist over each shoulder.

Linen is ideal for clothing in a hot climate and was worn by most ancient Egyptians, from coarse loincloths to fine dresses and tunics. As well as being worn during a person's lifetime, linen garments were also included in burials as clothing for the afterlife. This dress was found inside a woman's coffin, together with eight more garments.

UCL Petrie Museum of Egyptian and Sudanese Archaeology, University College London, LDUCE-UC31183

A line-up of linen

Linen had many uses – for clothing and household textiles, as well as bandages for mummification. Weavers made textiles of different weights, some with fringing and others with coloured borders. The yarns for these were dyed using indigo or woad for blue, and red ochre or a plant-based dye, such as madder, for red.

1. **Linen bandage with fringing and border decoration from a royal burial**
   1076–944 BCE (about 3,100–2,950 years ago)
   Linen

   Rijksmuseum van Oudheden, Leiden / National Museum of Antiquities, Leiden, The Netherlands, F 95/8.9-k

2. **Linen bandage with fringing and border decoration from a royal burial**
   1539–746 BCE (about 3,560–2,800 years ago)
   Linen

   Rijksmuseum van Oudheden, Leiden / National Museum of Antiquities, Leiden, The Netherlands, F 1929/12.75-2

3. A piece of very finely woven linen
3032–2853 BCE (about 5,150–4,700 years ago)
Linen

Museum of Archaeology and Anthropology, University of Cambridge, MAA 1916.41 E

4. A large piece of linen, with fringing and darker border decoration
1550–1069 BCE (about 3,700–3,070 years ago)
Linen

Museum of Archaeology and Anthropology, University of Cambridge, MAA 1962.244.1

A sash fit for a king

Girdle of Ramesses III
1185 BCE (about 3,210 years ago)
Linen

Many images of Ramesses III show him wearing a long piece of textile, similar to this sash, wrapped around his chest and tied at his waist. The weaver who made it was clearly highly skilled (a **hemu**), using 1,689 vertical yarns in a double weave, with 360 yarns for the plain central section, and 657 and 672 yarns for the two patterned borders. These include repeated ankh-signs (meaning ‘life’), to ensure the king’s good health. Experiments suggest it would have taken three to four months to weave.

Lent by National Museums Liverpool, World Museum, M11156

Inside a weavers' workshop

Reproduction of a copy of the original painting in the tomb of Khnumhotep, Beni Hasan, Egypt, 1897–1878 BCE
Painted by Norman de Garis Davies (1865–1941), probably in 1931
Paper, tempera paint and ink

The weavers in this workshop are all women, including the young girl at the left wearing only a loincloth. The largest figure is a man, however, who supervises the work. Three stages of weaving work are visible – creating yarn, using two spinning bowls to keep the threads in tension; splicing strips of flax, in preparation for spinning; and weaving on a ground loom.

The Metropolitan Museum of Art/Art Resource/Scala, Florence

The man in charge

The inscription on this statue records Teti-ty's job and those of his family members. He managed a textile workshop, probably linked to a temple or an elite household, in which the majority of the workers would have been women. This statue would have been positioned in Teti-ty's tomb, to catch the rays of the rising sun.

1. Statue of a male chief weaver, Teti-ty
1479–1400 BCE (about 3,500–3,425 years ago)
Limestone and paint

On loan courtesy of National Museums Scotland, A.1885.137

Tools of the trade

Strips of flax were twisted into hanks for storage until needed. Spinning bowls were used to keep threads in tension while they were being spun into yarn for weaving. As well as being woven in different coloured yarn, textiles often had added fringing and very occasionally decoration was embroidered on. Sewing, patching and darning was needed to mend areas of wear and tear.

2. Hank of flax fibre
Possibly 1876–1805 BCE (possibly about 3,880–3,820 years ago)
Flax

UCL Petrie Museum of Egyptian and Sudanese Archaeology, University College London, LDUCE-UC7509

3. Spinning bowl with one tensioning loop
2119–1793 BCE (about 4,070–3,820 years ago)
Clay

UCL Petrie Museum of Egyptian and Sudanese Archaeology, University College London, LDUCE-UC66397

4. Bronze bodkin
Uncertain date
Copper alloy/bronze

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology in Egypt, 1926, E.9.1926

5. Twelve bronze needles
Uncertain date
Copper alloy/bronze

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology in Egypt, 1926, E.5a-l.1926

You can’t get the staff!

In this letter, Ir complains that the women she is meant to supervise cannot weave:

the clothes were still on the loom … at the temple, as yarn laid out, with no means of weaving it

There is some evidence that Ir wrote this herself, which is unusual because most people, especially women, were unable to read or write at this time.

6. Letter of complaint from a weaver called Ir to her master

1976–1793 BCE (about 3,900–3,820 years ago)
Papyrus and ink

UCL Petrie Museum of Egyptian and Sudanese Archaeology, University College London, LDUCE-UC32203

Interactive station no. 2

It’s a Stitch Up

Basket makers sew together pieces of natural material with special stitches to make baskets. See what it feels like to use a crossed figure-of-eight stitch to bring things together. Remember to unlace your stitches for the next person to have a go.

Thread the dark green cord in a repeating ‘S’ shape to hold the two sides together. Tie the end loosely at the bottom to keep it in place.

Create a repeating loop of the dark red cord around the green cord.

Pull the loops of red cord tight around the green cord to draw them together to create the figure-of-eight weave.

The king’s sandal maker

Stela of the royal sandal maker, Ripa
1189–1077 BCE (about 3,210–3,090 years ago)
Sandstone

Although the stela seems modest, as a royal sandal maker, Ripa would have had very intimate contact with the king of the time, which would have meant he was an important person. Ripa is shown with his son, Pabau, presenting offerings to the gods Osiris and Anubis.

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 70

Sandals as status symbols

Sandals were made in a range of materials, including plant fibres and leather, but only people of high status wore them, while everyone else walked barefoot.

Sandals made for kings were more decorated – Tutankhamun’s sandals had gold strips, glass paste, beading and semi-precious stones, woven into the leather and plant fibres. Kings awarded sandals to priests and loyal officials as an honour, and they were included in the burial goods of wealthy people.

1. **Left sandal made of woven palm leaves and halfa grass**
   1580–1458 BCE (about 3,600–3,480 years ago)
   Palm leaf and halfa grass

   Fitzwilliam Museum, University of Cambridge, bequeathed by Major Robert Grenville Gayer-Anderson, Pasha, 1945, received 1947, E.GA.1461.1947

2. **Left sandal with a coarse leather sole**
   1550–1290 BCE (about 3,700–3,300 years ago)
   Palm leaf, reed and leather

   Fitzwilliam Museum, University of Cambridge, given by Greville John Chester, 1891, E.185.1891

Basket making

The earliest surviving baskets from Egypt date back over 7,000 years. Baskets were popular as cheaper and less rigid storage containers than wooden boxes. The baskets here were made by binding cereal straw around coiled cores of the same material. The lids may have had a handle in the form of a tassel in the centre.

3. Basket lid with faded painted decoration
1550–1069 BCE (about 3,570–3,090 years ago)
Cereal straw (barley and emmer wheat) and paint

Fitzwilliam Museum, University of Cambridge, bequeathed by Major Robert Grenville Gayer-Anderson, Pasha, 1945, received 1947, E.GA.1460.1947

4. Basket with lid
1976–1648 BCE (about 4,00–3,650 years ago)
Cereal straw

Fitzwilliam Museum, University of Cambridge, given by the Beni Hasan Excavation Committee, 1903, E.124.1903

5. Basket with a lid originally decorated with jackals
1976–1648 BCE (about 4,00–3,650 years ago)
Cereal straw and flax stalks

Fitzwilliam Museum, University of Cambridge, given by the Beni Hasan Excavation Committee, 1903, E.121.1903

Decorated baskets

Scenes on tomb walls show that baskets often had woven patterns. The maker of the smallest basket here decorated it with figures of jackals woven using straw dyed black. This dye has caused the straw to rot away, leaving the undyed core exposed. The jackals are now only visible as traces under ultraviolet light.

The large lid has a pattern of triangles, woven from straw fibres stained in different shades of brown and red. Analysis suggests the fibres may have been immersed in an iron-rich mud to stain them brown. The red pigment may be made from a copper-based mineral.

The Woodworkers

Egyptian woodworkers were skilled at getting the best out of the wood available, including using offcuts to patch timber that was flawed or full of knots. Egypt's very dry climate limited the supply of trees that produced good quality timber, so wood was a scarce and expensive material. Imported timber, such as cedar of Lebanon or ebony from sub-Saharan Africa, was of a higher quality, with a straighter grain, but was even more expensive.

Egypt's dry climate has preserved many examples of woodworking, showing the incredible skill of the makers, but very few of their names have survived.

Death's door

Wooden door from a tomb
about 1285 BCE (about 3,310 years ago)
Wood (sycomore fig)

The tight joints between individual planks of this door indicate the care and skilful approach of its maker. The protrusion at the bottom was the hinge point that fitted into a stone socket in the floor. The hinge at the top is missing. The carpenter has chosen sycomore fig wood, which is native to Egypt.

On loan from the British Museum, EA705; .705

A record of achievement

Commemorative stela of the carpenter, Amenemhat,
about 1976 BCE (about 4,010–3,900 years ago)
Limestone and paint

Above a standard inscription, which ensured Amenemhat received offerings in the afterlife, we see two windows he has made. At the bottom, are more of his handiworks: a door and door frame, columns, wooden jar stands, a shrine-shaped box, together with an axe and a saw. These celebrate his skill as a joiner. Family members also feature, including two sons, his wife and a daughter-in-law.

Paris, Musée du Louvre, Département des Antiquités égyptiennes,
E 13055

Windows needed urgently!

An order for four windows
1295–1186 BCE (about 3,320–3,210 years ago)
Terracotta clay and ink

The note is written in hieratic, derived from hieroglyphs. Some of the signs are easy to recognise, for example four strokes = ‘four’ and a figure with raised arms = ‘height’. A diagram shows the type of windows required and the dimensions: four palms and two fingers wide, and five palms high. The tone is rather forceful:

**It’s a job to do four of this type exactly. Exactly!
But hurry, hurry, by tomorrow. I will let you know!**

Perhaps the writer, called Nakhtamun, wanted them for his house and was not used to waiting, or maybe they were for an important client.

Paris, Musée du Louvre, Département des Antiquités égyptiennes,
legs sous réserve d’usufruit, E 23554

Making a bed

Relief fragment showing a carpenter working on the frame of a bed
Uncertain date
Stone

Fine furniture would have been created by specialist woodworkers. Here we see a carpenter using a tool to make final adjustments to the shape of the leg of a bed. Illustrations like this, alongside evidence of tool marks, help to build an understanding of how objects were made in practice.

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 22645

An ancient delivery note

Ostracon with a possible delivery note for sawn timber
1550–1069 BCE (about 3,570–3,090 years ago)
Limestone and ink

This ostracon lists doum-palm and acacia wood, as well as other unspecified sawn timber, including wooden columns, door frames, wooden beams (possibly for roofing) and a pole covered with gold. Some items are very large, up to about 7.5 meters (16 cubits in length), suggesting that the timber was for fitting out a royal palace.

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.6130.1943

Tools of the trade

Woodworkers relied on two basic pieces of equipment – chisels, made of bronze blades set into wooden handles, and a mallet, usually a simply shaped piece of wood from an acacia tree, which was quite dense with slightly flexible fibres. Scenes on tomb walls show other tools in use (adzes, saws and bow drills).

Wooden mallet
Uncertain date
Wood (acacia)

Fitzwilliam Museum, University of Cambridge, given by the Egypt Exploration Fund, 1907, E.18.1907

Five bronze chisels with wooden handles
1550–1292 BCE (about 3,570–3,320 years ago)
Bronze and wood

Staatliche Museen zu Berlin, Ägyptisches Museum und Papyrussammlung, ÄM 32209–32213

Interactive station no. 3

Keep Bow-ing Strong

Slide the bow backwards and forwards to make the drill spin — you would have had to do this hundreds of times as part of the process of drilling a hole! Watch the animation to find out how the bow drill is put together.

The craftsman using a chisel
is more exhausted than a worker in a field.

His fields are the timber and his hoe is an adze.
Nightfall gives him no rescue.

He does more than his arms can manage
and at night he has to light a lamp.

From the 'Teaching of Khety'

Furniture makers

The difficulty of obtaining good quality wood in Egypt meant that any work produced by carpenters was always expensive. Good quality wooden furniture was only available to the wealthy, while less well-off people used furniture made of the ribs of palm branches. Scenes painted in tombs show funeral processions in which elaborate items of furniture form part of the burial equipment of their owners. This highlights that there was a regular need for new furniture to be created and that the carpenters who produced it would have been in constant demand.

Carpenters at Work

Reproduction of a copy of the original painting in the tomb of Rekhmire, Qurna, Egypt, 1504–1425 BCE
Painted by Nina M. Davies (1881–1965) in 1935
Paper and tempera paint

One man finishes chair legs shaped like lions' legs, another cuts a mortise with a chisel and mallet, while another saws wood. In a different part of the scene, a group work together on a large shrine, inlaid with pairs of fittings in darker wood. At the right, three men sand a wooden column, and two men using a bow drill to prepare holes for the basketwork of a lion-headed bed frame.

The Metropolitan Museum of Art/Art Resource/Scala, Florence

The skill of the cabinetmaker

Rectangular chest on legs, with sliding bolts securing the lid and doors
712–332 BCE (about 2,800–2,360 years ago)
Wood

The maker of this cabinet was a highly skilled craftsman (**hemu**), who took great care in shaping each individual piece of wood so that the joints fit together tightly. The wooden panels are very thin and shaped so that they fit into grooves in the legs and framing pieces of wood. These are held together by long dowels.

Lids on the top, one of which originally had a knob, gave access to an upper compartment. They were held closed by a bolt, but the fitting that it should have slid into is also missing. Doors at the side gave access to a lower compartment.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, E 2773

Chairs and stools

Chair-makers usually shaped the legs of stools and chairs with feet in the form of bulls' hooves or lions' legs. The seats could be made of leather, held in place by wooden pegs (dowels), or of basketwork.

The simple stool here is not pegged together. Instead, the tension of the basketwork of the seat holds all the pieces together. Although it may appear inexpensively made, stools like this have frequently been found in the tombs of wealthy people.

1. Stool or chair with lion legs
1550–1069 BCE (about 3,570–3,090 years ago)
Wood (probably sub-Saharan African Blackwood)

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.4564.1943

2. Wooden stool
1550–1425 BCE (about 3,570–3,450 years ago)
Wood and plant fibre

Paris, Musée du Louvre, Département des Antiquités égyptiennes, E 14654

On-trend furniture

Folding stool with inlaid ducks' heads
1550–1069 BCE (about 3,570–3,090 years ago)
Wood (**Cordia sp.**, ebony and tamarisk)
and animal bone

The seat covering of this folding stool is missing, so we can see how the craftsman has carefully shaped the bars to which the seat – probably made from leather – was attached. This was an expensive piece of furniture, with details inlaid with bone and ebony (imported via Nubia to the south, which Egypt had colonised at the time).

Folding stools were apparently popular items of furniture for those who could afford them. Several examples with the heads of ducks forming parts of the legs and feet survive from around the same time, including three found in the tomb of Tutankhamun.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, AF 6350

The scent of luxury

Decorative spoon with an elaborate handle and swivel lid
1327–1186 BCE (about 3,350–3,210 years ago)
Wood (carob and tamarisk) and paint

The creator of this container has used motifs that convey a message of an abundance of beautifully-scented cosmetic.

The young woman is naked apart from an elaborate collar of petals and she carries a heavy bunch of flowers. The large jar she supports is decorated with garlands of petals and, from her pose, is clearly heavy. Blue paint has been used to emphasise the details of all the flowers, which are fragrant water lilies (often incorrectly identified as lotuses). The jar at the top has been carved out to hold cosmetic ointment and has a separately-made swivelling lid.

Paris, Musée du Louvre, Département des Antiquités égyptiennes, legs sous réserve d'usufruit, E 8025 BIS

Just perfect

Box shaped in the form of the **nefer**-hieroglyph
1500–1400 BCE (about 3,520–3,420 years ago)
Wood (sycomore fig)

The woodworker has chosen a piece of native Egyptian wood to create this box for a man called Amenmosis. It was hinged by a cord on the top and pegged closed at the bottom. It is formed like an animal's heart and windpipe which is the shape of the hieroglyph reading **nefer** and meaning 'beautiful' or 'perfect'.

Oriental Museum, University of Durham, EG6786

Boxing clever

Box with sliding lids
1479–1425 BCE (about 3,570–3,320 years ago)
Wood, bone and pigment

Although this box looks simply made, it was opened by sliding the lids backwards and so required careful construction. The lids were secured by tying strings around the knobs on the top and the front. Small boxes, decorated with thin pieces of bone, were popular containers for cosmetic equipment.

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology, 1921, E.22.1921

Fixtures and fittings

Creating a wooden shrine was apparently the work of many different craftsmen, with one group dedicated to making decorative fittings that would be fitted, in pairs, to the outside of the shrine as part of the overall decoration.

The **tyet**-knot was a symbol associated with the goddess Isis, while **djed**-pillars were associated with her husband, Osiris, the principal god of the afterlife. These symbols were commonly used in shrines made for burial.

1. Tyet**-knot fittings**
Uncertain date
Wood, paint and pigment

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.2902a-d.1943

2. Djed**-pillar fittings**
Uncertain date
Wood, plaster and pigment, formerly painted

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.2683.1943

Sculptors in wood

Most wooden statues made by Egyptian sculptors served an important ritual function. Royal statues might reside in a mortuary temple and were believed to be living images of the dead king (or queen), tended by priests. Statues made for the wealthy dead could be placed in their tombs to receive offerings left for them. Other statues were provided to act as servants, making sure their masters were supplied with everything they needed for the afterlife.

Wooden statues

Like sculptors in stone, the makers of wooden statues were careful to choose the right wood for the purpose. Locally available wood from tamarisk and sycomore fig trees is light and soft to carve, but also susceptible to insect damage, while Nile acacia and sidder trees produce denser wood, with a finer grain. Imported timber, like lime wood and cedar of Lebanon, was used for the most expensive commissions.

Once the shape was carved, the statue would be painted, either over a white plaster-like base layer or straight on to the wood.

1. Figure of a tomb servant
Uncertain date
Wood (probably sycomore fig) and paint

Fitzwilliam Museum, University of Cambridge, given by Sir William Palin Elderton, 1955, E.23.1955

2. Fragmentary bust of a woman, with inlaid eyes
1943–1898 BCE (about 3,970–3,920 years ago)
Wood (probably sycomore fig), calcite, obsidian, copper alloy and paint

Fitzwilliam Museum, University of Cambridge, given by the Friends of the Fitzwilliam Museum, 1989, E.1.1989

3. Statuette of Taweret, probably made for a royal tomb
200–1 BCE (about 2,220-2020 years ago)
Wood (lime)

Fitzwilliam Museum, University of Cambridge, given by Sir William Palin Elderton, 1955, E.22.1955

Work on a shrine

Reproduction of a copy of the original painting in the tomb of Ipuy, Qurna, Egypt, 1279–1213 BCE
Painted by Norman de Garis Davies (1881–1965), uncertain date
Paper and tempera paint

Bridgeman Images
Animation by Tomfoolery Ltd

Makers of papyri

To create a sheet of the paper-like material called papyrus, the maker would use stems of the papyrus plant. The outer layer of the stems were removed and the core cut into thin slices, which were laid out side by side to form a single sheet. A second layer was placed over the top, at right angles. When pressed and allowed to dry, the sap from the stems acted as a glue holding the pieces together. Modern experiments show that it takes three years for the plants to grow stems thick enough for making papyrus.

Making papyrus

Step 1
The outer rind of the stem of the plant is removed.

Step 2
The soft inner pith is cut into long thin slices and left to release their naturally sticky sap.

Step 3
The strips are laid vertically side by side, with a slight overlap, to create the shape of the papyrus sheet.

Step 4
Another layer of strips is placed horizontally on top and the two layers are pressed together and left to dry.

Artwork redrawn and text adapted from the original work of Christina Rozeik

Inks, pigments and paints

Egyptian scribes and artists used inks made of red ochre and carbon black and pigments which were mainly made from minerals. Some may be familiar to us, like ochres for reds and yellows, and whites made from calcite, but research shows a wide range of other pigments – realgar, orpiment, natrojarosite and huntite – were used. The Egyptians also created the first man-made pigments, Egyptian blue and Egyptian green. Plant-based colours, like madder, were only used for dyeing until the Greeks introduced the idea of using them as pigments.

1. **Pigment pot containing traces of a yellow mineral (natrojarosite)**
   100–200 BCE (about 1,920–1,820 years ago)
   Clay and pigment

   Fitzwilliam Museum, University of Cambridge, given by the Egypt Exploration Fund, 1911, E.85.1911

2. **Pigment pot containing traces of carbon black**
   100–300 BCE (about 1,920–1,720 years ago)
   Clay and pigment

   Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology, 1911, E.94.1911

3. **Pigment pot containing traces of a pink pigment (madder)**
   100–300 BCE (about 1,920–1,820 years ago)
   Clay and pigment

   Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology, 1911, E.97.1911

The art of the underworld

Papyrus inscribed with the Book of the Dead for a senior royal scribe, Ramose
1290–1278 BCE (about 3,320–3,300 years ago)
Papyrus and paint

This is part of a ‘Book of the Dead’, a series of magical spells enabling its owner, Ramose, to enter the afterlife. The document was originally over 25m long, made of smaller sheets stuck together with a starch paste. The spells here allowed Ramose to take the form of various creatures: a swallow, a snake (called ‘a son of the earth’), a crocodile and a golden hawk.

Each spell has an illustration, created by an unusually skilful artist (**hemu**), who makes full use of the small range of red and yellow pigments available to him to create subtle effects with tiny amounts of paint.

Fitzwilliam Museum, University of Cambridge, given by the Friends of the Fitzwilliam Museum, 1922, E.2.1922

From 3 October until 8 December 2025

The art of the underworld

Papyrus inscribed with the Book of the Dead for a senior royal scribe, Ramose
1290–1278 BCE (about 3,320–3,300 years ago)
Papyrus and paint

This is part of a ‘Book of the Dead’, originally over 25m long, containing a series of magical spells enabling its owner, Ramose, to enter the afterlife. In the section on the left, Ramose stands before the Seven Celestial Cows and the Bull of Heaven. In many places where Ramose’s name is written, the ink seems to be running out, as if the scribe wanted to complete all the hieroglyphs without refilling his brush. To the right are fragments of a spell for ‘repelling the one who swallowed a donkey’. The painting is unusual because the artist has created shading on the donkey’s face and body.

Each spell has an illustration, created by an unusually skilful artist (hemu), who makes full use of the small range of red and yellow pigments available to him to create subtle effects with tiny amounts of paint.

Fitzwilliam Museum, University of Cambridge,
given by the Friends of the Fitzwilliam Museum, 1922, E.2.1922

From 8 December 2025 until 2 February 2026

The art of the underworld

Papyrus inscribed with the Book of the Dead
for a senior royal scribe, Ramose
1290–1278 BCE (about 3,320–3,300 years ago)
Papyrus and paint

This is part of a ‘Book of the Dead’, originally over 25m long, containing a series of magical spells enabling its owner, Ramose, to enter the afterlife. On this piece of papyrus, we see the Field of Reeds, surrounded by waterways, indicated by narrow areas, painted in Egyptian blue, with black zigzags. This was something like a paradise for the ancient Egyptians. The figures of Ramose and his wife, at either end, may have been painted by different artists.

Each spell has an illustration, created by an unusually skilful artist (hemu), who makes full use of the small range of red and yellow pigments available to him to create subtle effects with tiny amounts of paint.

Fitzwilliam Museum, University of Cambridge, given by the Friends of the Fitzwilliam Museum, 1922, E.2.1922

From 2 February until 12 April 2026

Burn out

Ball of Egyptian blue stuck to the lining of a kiln
306–30 BCE (about 2,330–1,710 years ago)
Clay and Egyptian blue

Egyptian blue was manufactured using limestone, quartz sand and natron (a salty compound) – the same materials as were used to create faience. Copper was added to produce the blue colour, and the mixture was fired at 850–1000°C. Experiments suggest that the firing need to continue for over 100 hours, and sometimes the kiln collapsed over this long period.

Fitzwilliam Museum, University of Cambridge, given by the British School of Archaeology, 1910, E.51c.1910

The finishing touch

Pieces of plant resin
Uncertain date
Mastic (**Pistacia spp**. resin)

During some periods, Egyptian coffin makers varnished the outsides of the coffins using resin, usually from the Pistacia tree family. Experiments show it is amazingly difficult to apply because it starts drying straight away. It was particularly used to add a golden glow to yellow colours, to associate the dead within the coffins with the gods, many of whom had golden flesh.

Fitzwilliam Museum, University of Cambridge, given by the Egyptian Exploration Fund, 1903, E.114.1903

The painters' palette

Coffin fragment depicting the goddess Isis painted with Egyptian blue
945 BCE (about 2,970 years ago)
Cartonnage (linen and paste), pigments

A partial fingerprint is visible in front of the face of the figure of Isis, probably left behind by the person applying varnish in this area. The fragment is painted using red ochre, orpiment, huntite, Egyptian blue and Egyptian green. The coffin was made of cartonnage, a material made of layers of linen and animal glue.

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.2887.1943

Detecting Egyptian Blue

Identifying pigments by taking samples can damage ancient objects, so less invasive imaging technology is often now used. When lit with special light, Egyptian blue emits some infrared radiation, even really tiny particles. These appear bright white on photographs taken using a camera fitted with specific filters. Unlike the Egyptian blue, Egyptian green appears black in this photograph. It is produced in a similar way to the blue, using the same materials, but in different proportions, and is fired at a higher temperature.

Master craftsmen at work: the coffin makers

Coffin making brought together the skills of numerous artisans: carpenters to construct the wooden cases, specialist makers of individual parts – faces, beards, hands – and artists to paint the decoration. In some workshops, an outline draughtsman might lay out the initial decoration and texts. There were also people who prepared the plaster-like paste that formed the base for the decoration, and people who made glue and varnish.

The workshops were probably divided between woodworking and decorating spaces, with people to move the coffins from one to another. A supervisor would manage all of this, ordering and receiving supplies, and taking payment from clients.

Paste – the foundation for decoration

Reproduction of a copy of the original wall painting in the tomb of Rekhmire, Qurna, Egypt, 1479–1400 BCE
Painted by Nina M. Davies (1881–1965) in 1928
Paper and tempera paint

At the left, a man kneels on the ground, grinding up limestone. This will be mixed with the glue that is shown heating in a pot over a fire, seen in front of his head. The resulting plaster-like paste was used to create the base layer over which decoration was painted on most Egyptian objects – coffins, sculptures and reliefs. At the right, we see another person applying this paste, using a specially shaped piece of wood.

The Metropolitan Museum of Art/Art Resource/Scala, Florence

A golden finish

Partly gilded cartonnage mask
380–30 BCE (about 2,400–2,050 years ago)
Cartonnage (linen and paste), gold and paint

This mask was made to lie over the face of a mummified person wrapped in bandages. The maker used three layers of linen, soaked in animal glue and moulded it into shape over a form. Once dry, he covered with the thick plaster-like white paste used to create the base layer for decoration, painted in yellow and black and then gilded.

Fitzwilliam Museum, University of Cambridge, bequeathed by Major Robert Grenville Gayer-Anderson, Pasha, 1945, received 1949, E.GA.290.1949

Decorating the mask

The artist first outlined the face with a black line (probably made from soot). Next, he used orpiment (a yellow, arsenic-based pigment) to create the wig stripes and then gold leaf was applied across the skin of the face. Traces of one of the gilder's fingerprints still survive in the gold leaf. Micro-CT scanning data show that it was applied in square sheets, the same way it is today. The eyes and eyebrows were painted over the gilding.

Modular coffins

Some parts of coffins, like hands, faces and beards, were made as separate items that were attached on to the coffin structure, after the shaping was completed, using dowels. Expensive coffins might have eyes that were inlaid, rather than just painted, and the parts for these, which might be made of bronze, stone and glass, would be delivered from other workshops.

Wooden face with spaces for inlaid eyes
1550–1069 BCE (about 2,970–2,760 years ago)
Wood (sidder), traces of plant resin and Egyptian blue

Fitzwilliam Museum, University of Cambridge, bequeathed by Major Robert Grenville Gayer-Anderson, Pasha, 1945, received 1947, E.GA.501.1947

Eyes and eye rims from coffins
Various dates
Glass and faience

Fitzwilliam Museum, University of Cambridge, given by Major Robert Grenville Gayer-Anderson, Pasha, and Colonel Thomas Gayer Gayer-Anderson, 1943, E.GA.3977.1943; E.GA.3984.1943; E.GA.3986.1943; E.GA.3990.1943; E.GA.3993.1943

Gilded wooden beard inlaid with blue glass
1550–1069 BCE (about 3,570–3,090 years ago)
Wood, glass, gold and Egyptian blue paste

Fitzwilliam Museum, University of Cambridge, bequeathed by Edward Towry Whyte, 1932, E.105.1932

A statue made like a coffin

Figure of a composite god, Ptah-Sokar-Osiris
306–2049 BCE (about 2,330–2,050 years ago)
Wood, cartonnage (linen and paste), gold and paint

The god depicted combines three important deities – Ptah, Sokar and Osiris. Figures like these, often made to contain papyri inscribed with magic spells inside them, became popular items of burial equipment from about 3,000 years ago.

Fitzwilliam Museum, University of Cambridge, bequeathed by the executor of Thomas William Dampier-Bide, 1916, E.2.1916

Conserving the Ptah-Sokar-Osiris figure

The carpenter used a single piece of wood, cut in half and hollowed out, to make the figure of the god. The base is also a single block of wood. Both were covered in thick dirt, but after cleaning the coloured decoration and gilding of the face became visible. The feathers of the headdress are gilded on the front but only painted on the back.

This figure was first properly examined and conserved in 2024–5. During this work, we discovered that the feathers of the headdress were wedged onto the ram's horns using some coarse textile and a piece of newspaper, dated between 1902 and 1916.

A tale of two makers

Inner coffin of a man called Pakepu
680–664 BCE (about 2,700–2,690 years ago)
Wood, linen, paste and paint

The body of Pakepu would have lain in this coffin, which was housed inside another, larger coffin. CT-scanning reveals that the wooden structure was created by a very skilful carpenter. The decoration, however, suggests that the painter was much less skilled – in many places the paint has run and the hieroglyphs are very poorly written. While decorating the lid, the painter stood on one side of the coffin and stretched almost all the way across the chest, before finishing off the decoration from the other side. The colour on the face is thinner on one side than the other.

Right: Coffin painters at work from the tomb of Ipuy, Qurna, Egypt, 1279–1213 BCE (redrawn by Nigel Strudwick, 2025)

Fitzwilliam Museum, University of Cambridge, given by Edward (VII), Prince of Wales, 1869, E.2.1869

A masterpiece of Egyptian creativity

Mummy-board of the supervisor of scribes
and of craftsmen's workshops, Nespawershefyt
about 1000 BCE (about 3,200 years ago)
Wood, linen, paste, paint and varnish

The decoration on the front of this board was painted by a highly skilled artist over many weeks. The background is toxic yellow orpiment, over which he has applied each colour in sequence. All the decoration with a yellow background is covered with a very thin layer of ancient varnish, which was difficult to work and required enormous skill to apply. A darker area shows where the inscriptions were re-varnished after being altered (probably to reflect its owner's final promotion).

This board lay directly on top of the mummified body of Nespawershefyt, within a set of coffins.

Fitzwilliam Museum, University of Cambridge, given by Barnard Hanbury and George Waddington, 1822, E.1.1822.c

A re-used coffin lid

Images created from CT-scan data show what Nespawershefyt's mummy-board looked like before it was painted. These reveal that the wood had some flaws, but also that the coffin maker repurposed a lid from an older coffin to make the mummy-board. Evidence of widespread tomb robbery at this period suggests that the original coffin lid was probably stolen from a burial.

The lid was much thicker and a slightly different shape than the board is now and had to be cut back. The rectangular wooden tenons, designed to hold together the wood it was made from, now lie exposed on the outer surface of the board.

Details, details …

Fragment from the coffin of the ‘master physician’ Wepwawetemhat
1975–1790 BCE (about 4,000–3,810 years ago)
Wood and paint

The painting of this coffin fragment is very detailed. Setting-out lines and underdrawings can be seen in places, possibly painted by the outline draughtsman. The painting of the hieroglyphs and the animals show that the artist was a highly skilled worker (**hemu**). Raking light reveals that he used his fingertips to create the texture of the antelope’s hide.

Fitzwilliam Museum, University of Cambridge, provenance unknown, E.W.66b

Paying the price

Receipts for making and decorating coffins almost never itemise the cost of materials, making it impossible to know how much was charged for the craftsmen’s time and skill. Studies of receipts, found in the village that housed the builders of royal tombs in the Valley of the Kings, show that, on average, a completed coffin cost them roughly the same as three months’ wages.

1. A receipt for making coffins
1539–1075 BCE (about 3,570–3,090 years ago)
Limestone and ink

The Ashmolean Museum, University of Oxford. Bequeathed by Sir Alan Henderson Gardiner, 1963, ANAsh.Mus.H.O.91

2. A receipt for decoration of a coffin
probably 1184–1153 BCE (probably about 3,570–3,090 years ago)

Limestone and ink Paris, Musée du Louvre, Département des Antiquités égyptiennes, E 32915