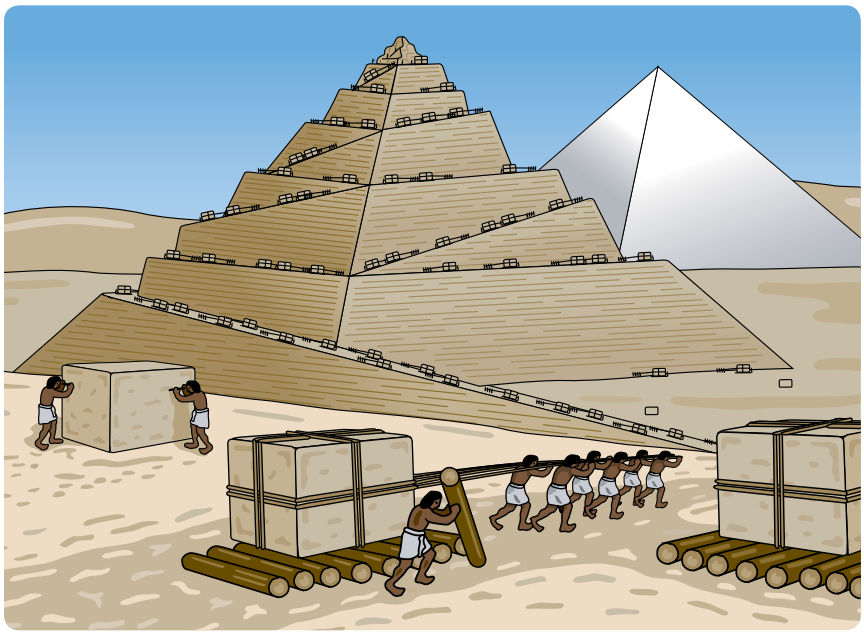
National Museums Scotland

Ancient Egypt: Pyramid Stones

Teacher Notes: There are challenges throughout this resource aimed at First Level. *All class challenges* are aimed higher and can be worked through as a class to explore larger numbers. Use classroom resources or concrete materials to model the questions.

What is a pyramid?

The first pyramids of ancient Egypt were built as royal tombs. These huge buildings showed the power and importance of the king to everyone. According to ancient Egyptian writings, the shape of pyramids helped the dead king to be able to climb high up into the sky and join the gods in the stars.



The largest and most famous Egyptian pyramid is the "Great Pyramid of Giza" built for King Khufu (c. 2589-2566 BCE). It was called "Akhet Khufu", which means "The Horizon of Khufu".

At 146 metres high, it was the tallest building in the world for over 3000 years. It is made-up of more than 2 million blocks of stone; each one weighing up to 2.5 tons, about the same weight as two small cars.

What were pyramids built from?

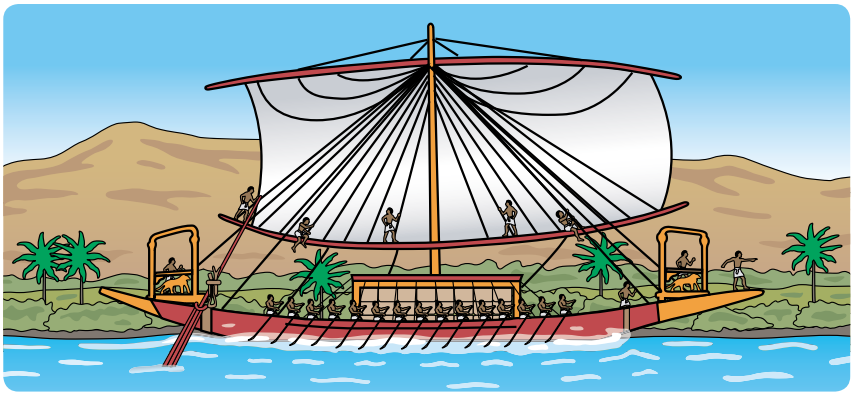
The pyramid of Khufu was built mostly of local stone, quarried very close to the site. Teams of workers who lived close to the site dragged these stones to the pyramid using wooden sledges and ropes.

The pyramid we see today is missing an important part, its bright white casing. Blocks known as casing stones were quarried at a special quarry called "Ro-Au", about 15km away from the pyramid. When these stones were polished, they would have been super-shiny, reflecting the rays of the sun.

Limestone casing stone from the pyramid of Khufu. Image © National Museums Scotland.

How did Egyptians move the heavy stones?

The ancient Egyptians lived long before the invention of motor vehicles, like trucks and cranes, so transporting things could be a big challenge. Luckily, they had one very useful resource to help them – the Nile.



Egyptians used the river like a motorway – a route to move people and goods up and down the land in boats. These would be fitted with both oars and sails so you could go up and down the river. When you went north, towards the sea the sailors could use the power of the river but when they were going south, they would have to row against the power of the river.

Challenge: 100 blocks need to be moved down the river. Each boat can take 30 blocks. How many boats are needed?

Hint: Djedi thinks 3 boats are needed whereas Nofret thinks 4 boats are needed. Who do you think is correct and why?

Answer: _____

How did the boats stay afloat?

A piece of stone feels much heavier than a piece of wood the same size, so it seems hard to believe a wooden boat can carry 30 big blocks of solid limestone.

However, the ability of an object to float or sink does not just depend on how heavy it is. Its size and shape matters, too. Boats are usually a hollow bowl shape which holds a lot of air. This makes the boat buoyant and enables it to float while holding a heavy weight.

Challenge: Make your own ancient Egyptian-style cargo boat.

How many blocks can it transport down the river Nile? _____

What you need:

- 1 sheet of A4 paper
- Toy building bricks
- A basin or sinkful of water

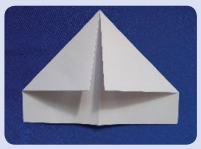
Optional:

- 2 paper straws
- Piece of tissue paper (approx. 15X10 cm)
- Scissors
- Glue
- Wax crayons

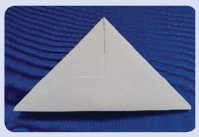
What to do:

1. Fold an A4 sheet of paper in half lengthways. Then open out the paper and fold it in half widthways.

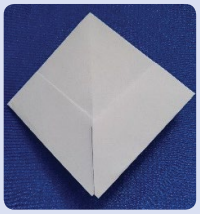
   With the fold open towards you, fold down the top corners towards the middle of the paper.



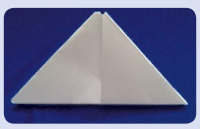
2. Take the flap at the bottom of the paper and fold it up. Turn the paper over and do the same on the other side. Tuck the bottom corners in.



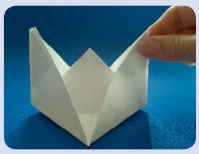
3. Next, hold the triangle at the bottom and pull the two sides apart until it pops into a diamond shape.



4. Place the diamond with the bottom points facing towards you. Fold one corner up to meet the top of corner. Turn the paper over and do the same thing to the other side.



5 Now you need to turn this triangle into a square. As before, hold it at the bottom and open up the two edges.



This square consists of two triangles. Holding the top of each triangle, gently pull them out into a boat shape.

Decorate your boat Egyptian-style. To make it more waterproof, colour it in with wax crayons. Stick on a mast and sail made of paper straws and tissue paper.

6 Finally, you're ready to try it out in the water. Load it up with toy bricks to represent limestone blocks. How many can your boat carry?

Ask a grown up to share your boats with us via Twitter @NMSEngage.