

Year 3 - DT Knowledge Organiser

What I remember from Year 2...

- Different support techniques add strength and stability to structures.
- Mechanisms are parts that make something work or move.

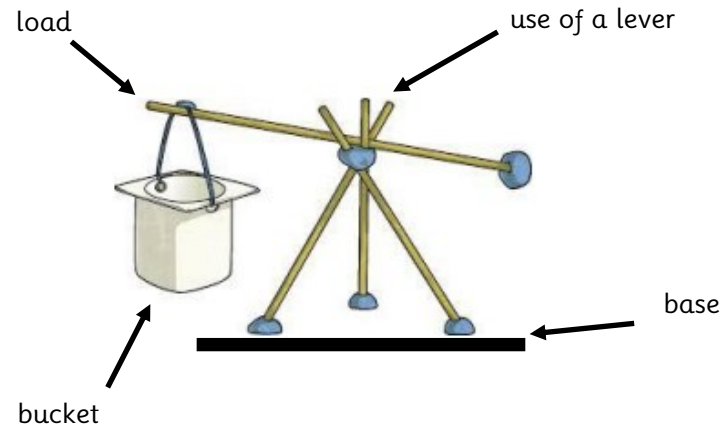
Key Knowledge...

The River Nile is the longest river in the world. It flows through north-eastern Africa for about 6,650km. The great civilisation of ancient Egypt developed on its banks.



Irrigation is the process of supplying land with water, so that plants and crops will grow.

Design...



Egypt is a land of mostly hot desert, therefore the soil needs to be irrigated in order to grow crops.



A Shaduf is a **hand operated** simple **machine**. It is a long pole with a bucket attached to the end for lifting water from a lower level to a higher one.

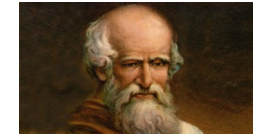
Mechanisms

Egyptian Shaduf



Archimedes

The most famous Mathematician and inventor in Ancient Greece. He invented a wide variety of machines, including pulleys and the Archimedean screw pumping system.



Key Vocabulary...

Crops - Plants grown on a farm.

Machine - A device with a system of parts that work together to perform a task.

Hand operated - Operated or controlled by hand, rather than automatically or electronically.

Fulcrum / Pivot - A rod or pin upon which another part is supported, turns, swings or moves back and forth.

Groove - A long, thin cut in a surface with a tool.

Bench Hook - A device to support an object still whilst it is worked on.

Key Knowledge...



pulleys

Levers and pulleys are all around us!



levers



Health and Safety...

If you are cutting the dowel yourself...

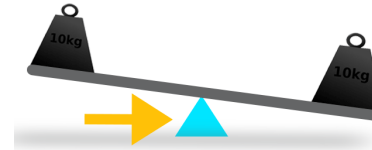
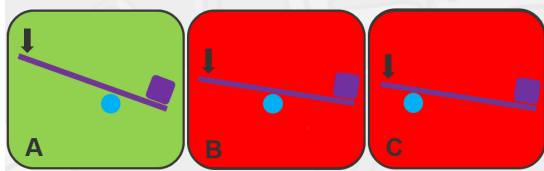
- Attach a **bench hook** to the table and then place the dowel on it to support it.
- Hold the saw with your writing hand and then place the other hand away from the saw on the table.



Key Skills...

Pulleys and levers are mechanisms that make things move.

A pulley uses a wheel with a **groove** along its edge that holds a rope or a cable. Pulleys can be used to affect the speed, direction or force of a movement.



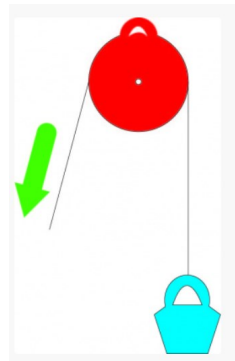
Levers: Consider where you will position the fulcrum. The further it is from the object, the more that the subject at the end of your lever can move!

Remember...

A triangular frame structure and a base will add support and stability to your Shaduf.



A lever is a rigid bar resting on a **fulcrum / pivot**, used to move a heavy load with one end when pressure is applied to the other.



Effective levers should move smoothly. How well does your Shaduf lift varying loads?

