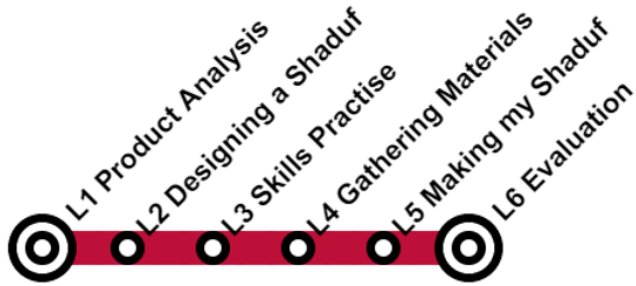




DT Knowledge Organiser – Year 4 – Ancient Egyptian Shaduf

Lesson Sequence:



Key Vocabulary

Shaduf a device used in Egypt for irrigation, consisting of a long suspended rod with a bucket at one end and a weight at the other end.

Irrigate/Irrigation the practice of supplying land with water so that crops and plants will grow.

Lever a rigid bar resting on a pivot, used to move a heavy or firmly fixed load with one end when pressure is applied to the other.

Pivot the central point, pin, or shaft on which a mechanism turns or oscillates.

Oscillate move or swing back and forth in a regular rhythm.

Counterweight a weight that, by exerting an opposite force, provides balance and stability to a mechanical system. Its purpose is to make lifting the load more efficient, which saves energy and is less taxing on the lifting machine

Agriculture is the science of farming, it includes growing crops, rearing animals to provide food, wool and other products.

Unit Introduction:

Egypt was (and is) a land of mostly hot desert therefore the soil needs to be irrigated in order to grow food crops. A Shaduf is hand-operated simple machine for lifting water to irrigate land; still used in India, Africa, Egypt, and some other countries. A Shaduf consists of a long pole or beam mounted like a tall seesaw, this is the Lever.

There is a water bucket suspended from one end and a counterweight is positioned towards the other. In use, the water bucket suspension rope is pulled down to lower the bucket into the water and then lifted out with the aid of the counterweight when filled. In both actions, the top beam serves mainly as a Class 1 Lever: pulling against the counterweight as the bucket is lowered and, as it is raised, the counterweight provides the effort to lift the weight of water (plus a little extra effort provided by the operator pulling the bucket upwards).

Tools and materials required:

- Sticks of relevant size
- Plasticine
- Container
- Rope

Key features:

- Pivot
- Lever
- Counterweight

