Ancient Egyptians

Learning Objective:
To be able to design, make and evaluate a shaduf.

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This ancient Egyptian farmer has real trouble getting water to his crops. He needs a SHADUF.

Do you know what a shaduf is?

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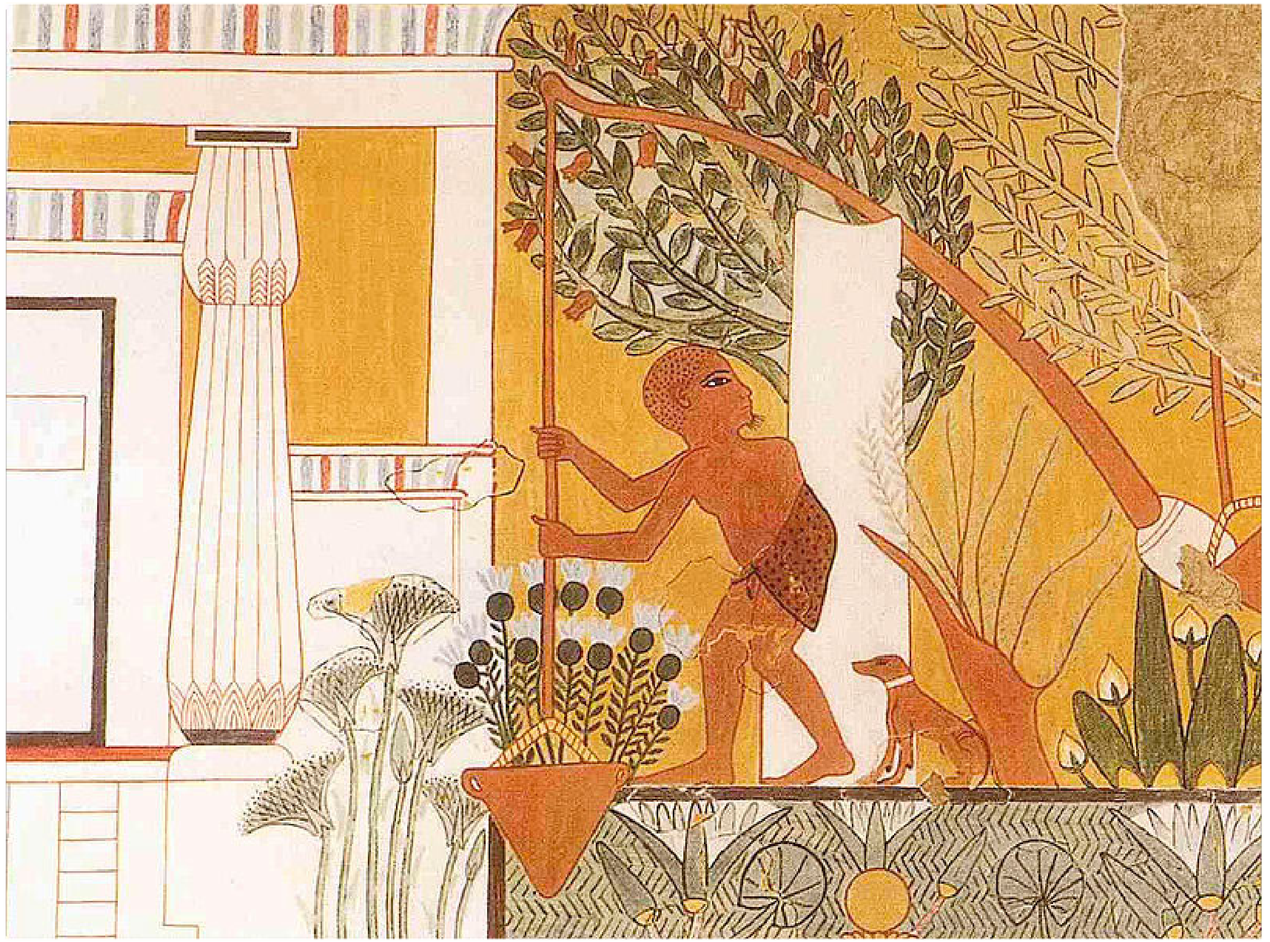
Apart from the yearly flooding of the Nile, there was little water in Egypt. Without water, the crops would wither and die in the hot sun. Farmers needed a way to get the water from the streams and canals to their fields. They used a device called a SHADUF to do this.



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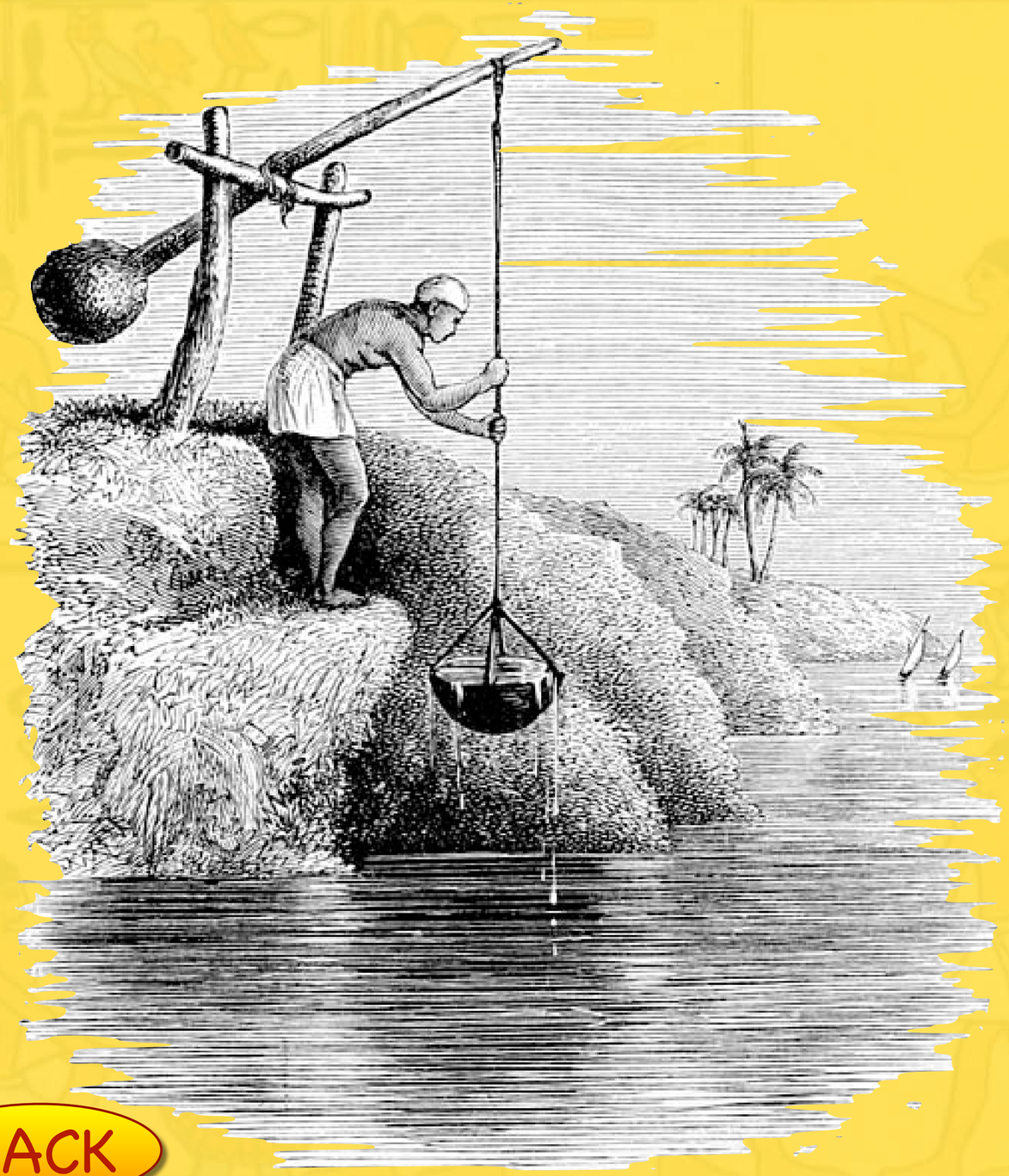

Have a careful look at this picture. Do you think you can explain how a shaduf works?

Think, pair, share your ideas.

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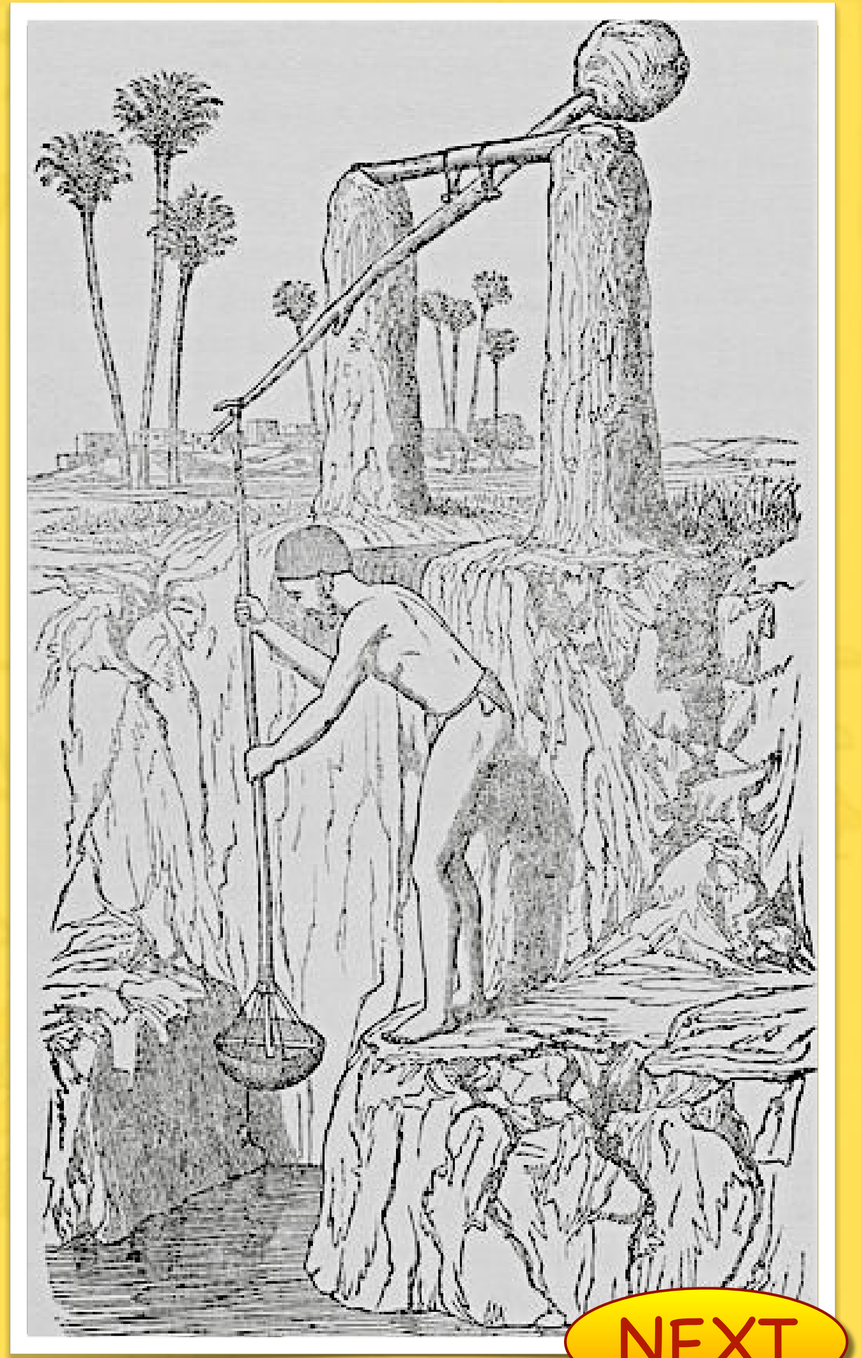
A shaduf enabled the farmer to lift water from a low place to a high place. A pole was placed on a crossbeam with a bucket on the end of a rope on one end and a heavy weight on the other end. The farmer was then able to pull the rope down to collect water from the stream and then pull the rope up (or push the weight down) to lift the water to higher ground. From here he would be able to get the water to his crops. If the fields were not near the stream, irrigation systems were used.



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What materials do you think we could use to make a model of a shaduf?

Ideas:

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What could you use to lift the water?

Ideas:

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What could you use as the weight to counteract the water?

Ideas:

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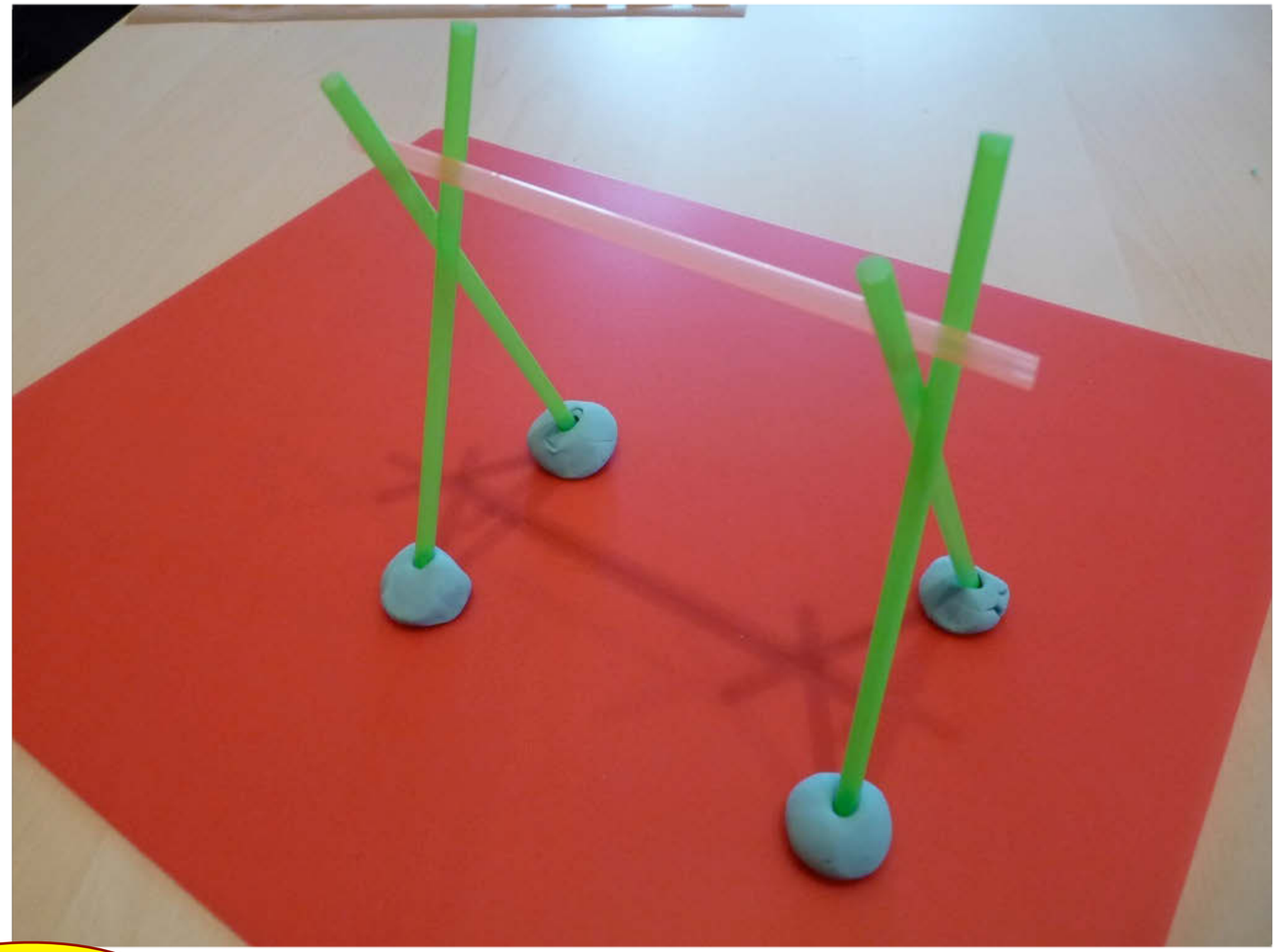
Have a look at these ideas...
What could you alter and improve these models?



This structure uses plasticine to keep the straws upright and provides a bar for the weight and bucket to balance on. What would you use to attach the weight and bucket?

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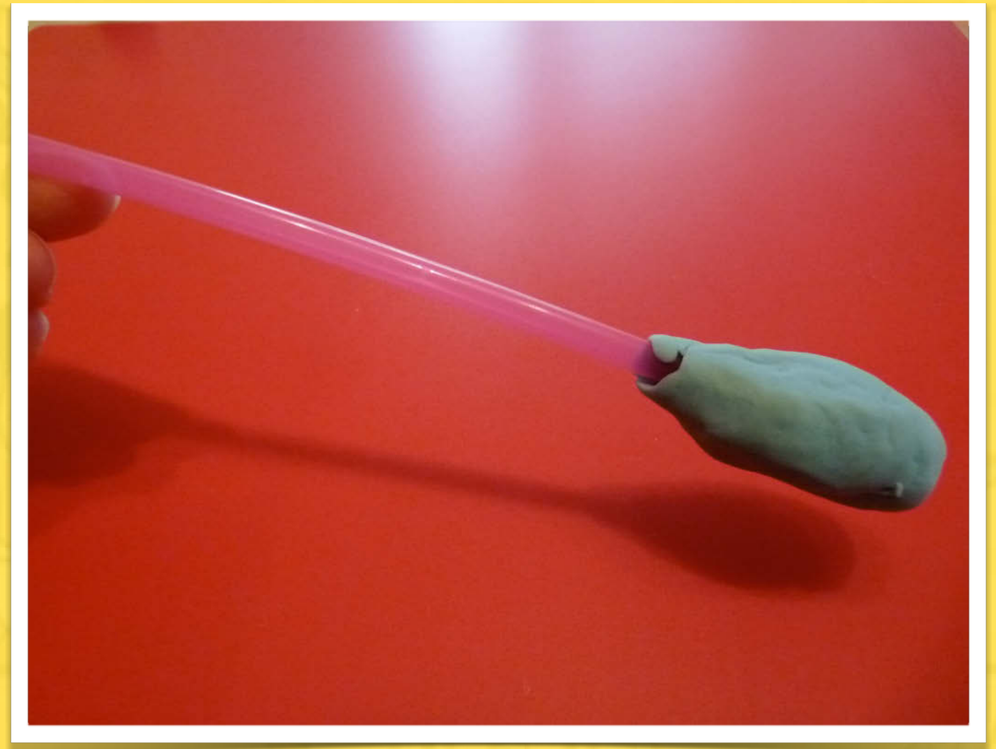
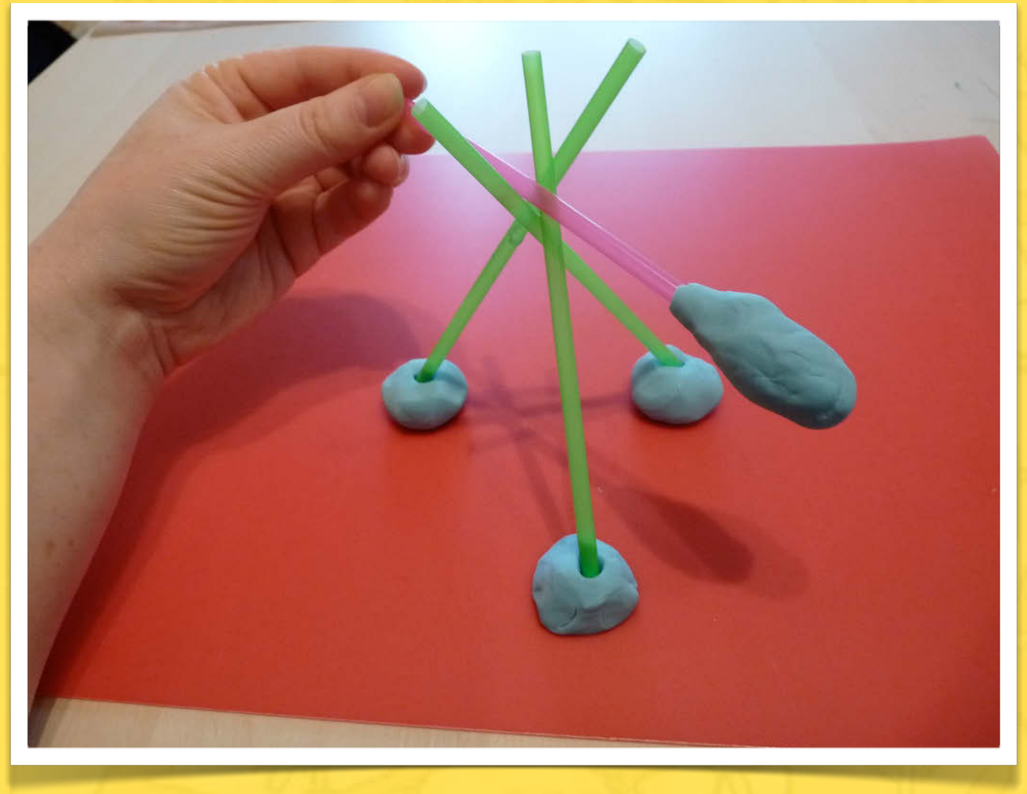


This tripod model provides a structure for the weight and bucket to tilt on.

You could use plasticine as the weight on the end of the bar.



How could you improve these models?

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