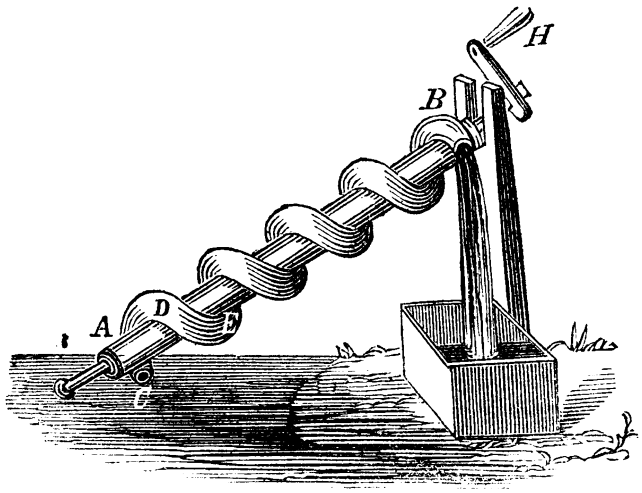
# ARCHIMEDES SCREW

Archimedes was a Greek Mathematician, Astronomer and a great inventor who observed the world around him and wanted to find out more about how things work. Archimedes was regarded as one of the leading ancient thinkers among his peers in classical antiquity.

There is a story that while Archimedes was in Egypt, he would watch the farmers carry basin jars of water from the Nile river to water their fields during the dry season. Archimedes observed them, trying to figure out if there was a better way to get the water from the river to the fields.

The result was Archimedes' Screw. This clever device acts as a type of scoop which draws water uphill from a river or well and deposits it elsewhere with much less effort than carrying it! Let's try it out

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What you will need to build Archimedes' Screw

- PVC Pipe- 50mm diameter x
- Clear vinyl tubing- 3mm diameter x 60mm long
- Tape- Strong and sticky, such as Gorilla tape or duct tape
- 2 x containers for water
- Strong scissors
- Permanent Marker
- Water

Procedure

- Attach one end of the vinyl tubing to one end of the PVC pipe with duct tape.
- Tightly wrap the tubing around the pipe in a spiral.
- Attach the tubing to the other end of the pipe with duct tape.
- Use scissors to cut off any extra tubing.
- If necessary, use extra pieces of duct tape to evenly space out the tubing along the length of the pipe.
- Fill one of your containers with water. Add food coloring to make the water easier to see when it is in the tubing.
- Elevate the second (empty) container so it is higher than the first container.

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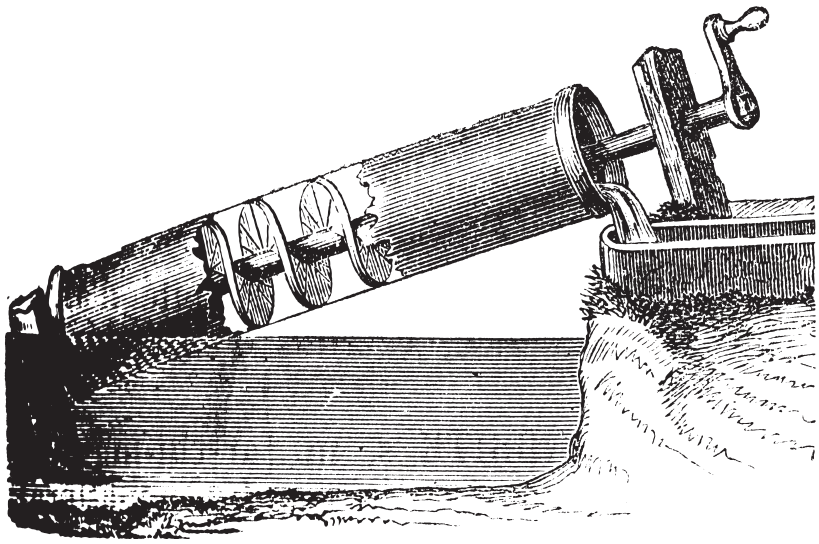
- Place one end of your Archimedes screw in the lower container of water, and align the other end over the upper container.
- Rotate the screw so the bottom end of the tubing "scoops" water with each rotation. It should go underwater and then come back above the surface with each revolution, not remain completely submerged the entire time. If you do not see your tubing start to fill with water after a few rotations, you might be spinning the screw the wrong way.
- Keep spinning and watch as the water moves up into the higher container!



- Experiment with your Archimedes screw. How high can you lift water? Raise the upper container, and tilt the screw upward at a steeper angle. Do you reach a point where water starts to flow back down the tube instead of up?