

Archimedes of Syracuse

Archimedes of Syracuse was a mathematician and inventor who lived in Italy during the 3rd century BC. He studied the mathematics of pulleys and levers and is best known for inventing a pump that is still used today.

As with many inventions, Archimedes' greatest invention was born of necessity. The King of Syracuse asked Archimedes to build a luxury ship, but once it was built the ship began to leak! Archimedes needed a fast and easy system for draining the hull.

To solve the problem, Archimedes created a new kind of pump that could be operated by just one person. First, he wound a hollow tube around a larger core. Then he placed the tubes at an angle and rotated the entire device. With each rotation, a little bit of liquid was picked up, carrying it up and out of the boat.

Now try creating a pump yourself!

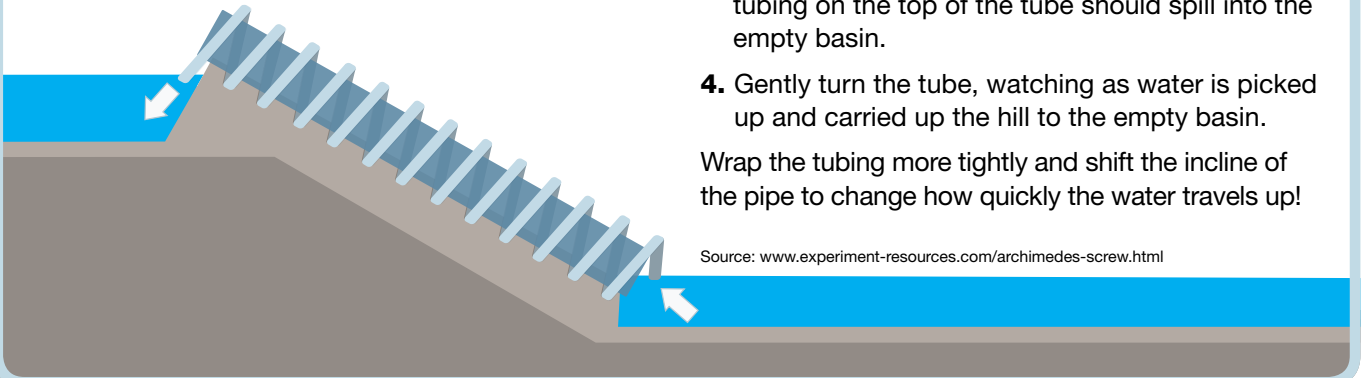
Materials:

- ◆ ½-inch-diameter pipe (12 inches long)
- ◆ 4 feet of clear vinyl tubing (⅜-inch outer diameter x ¼-inch inner diameter)
- ◆ tape
- ◆ water
- ◆ two empty basins

1. Carefully wrap the tubing around the pipe. Leave about ¼-inch of tube hanging off both ends of the pipe.
2. Use books to place one basin higher than the other. Fill the lower basin with water.
3. Place the wrapped tube in the lower bowl. The tubing on the top of the tube should spill into the empty basin.
4. Gently turn the tube, watching as water is picked up and carried up the hill to the empty basin.

Wrap the tubing more tightly and shift the incline of the pipe to change how quickly the water travels up!

Source: www.experiment-resources.com/archimedes-screw.html



WATER TANKS

All across New Jersey, water tanks tower over homes and roads. Why are they there? It's all about gravity.

Gravity is a force that attracts two objects. When an object, such as water, is placed high above the ground in a tank, pressure is exerted on the water, pushing it down toward the ground.

This is the reason that water tanks exist. They provide the pressure to push water through miles of water pipes to homes, schools, and businesses. More importantly, however, water tanks make sure that there is enough water and pressure to get through emergencies—like fires.



GUESS WHAT!

New Jersey American Water has 45,000 fire hydrants across the state.