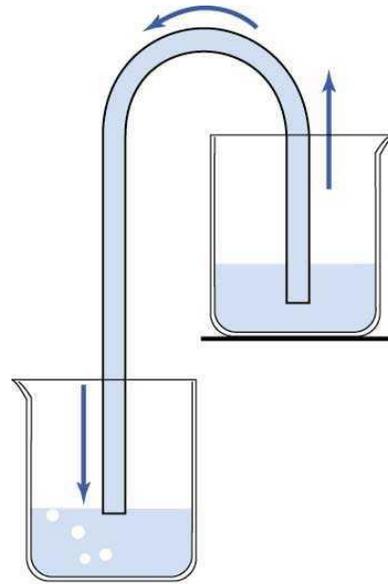


Pre-Tour Lesson

How Do We Get Our Water? Supply List and Background

Recommended Supplies for Students:

1. Siphon- can be purchased with a pump or as a simple tube where students must utilize pressure differences to move water



Clarinda-Academy Artworks

Option: Simple electric pump. Can be purchased already made or built.

Build your own:

Electric: <https://www.youtube.com/watch?v=vSJMIxBC-gE>

Non-Electric: <https://www.youtube.com/watch?v=ZOGkqlju51g>

Buy one:

Real life connection: Works similar to pumps and water towers. Pumps use large amounts of energy to pump water against gravity, usually over a mountain, during its travel to our homes. Water towers utilize gravity by storing water above ground and using the force to deliver water to homes and municipalities downhill.

Pre-Tour Lesson

2. Valves- simple valves can be purchased for students to experiment how to control the flow of their water



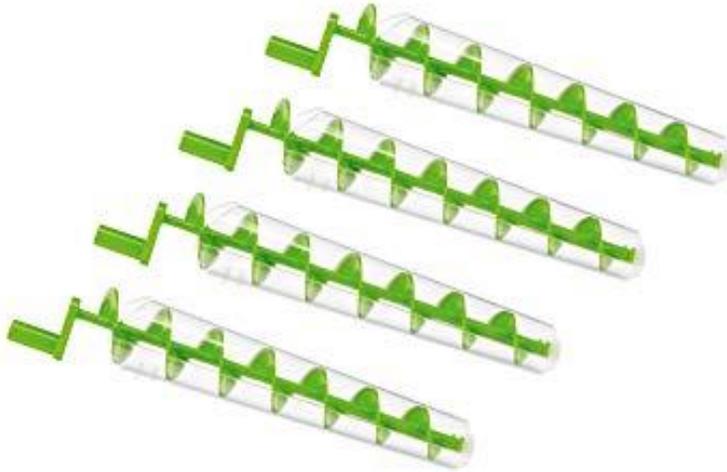
Real life connection: Water is cleaned at a treatment facility before it is sent out for municipal use. A “water main” is the main pipe that delivers water to municipalities. The flow can be controlled through valves.

3. Pipes- can be adjusted for grade level. Younger students may use flexible tubing and older students may use rigid PVC pipes for a challenge.

Real life connection: Smaller pipes connect to the larger water main to deliver water to businesses and houses. They also use valves to control the flow. At each location, a water meter is attached to a main pipe to measure how much water is flowing through. This information is sent to the water utility company who then charges the house/business for the amount of water they use.

Pre-Tour Lesson

4. Archimedes' Screw- a pump that was used to move water upstream. Simple Archimedes' Screws may be purchased online or built



Build your own: <https://explorable.com/archimedes-screw>

Buy one: <https://www.ebay.com/i/264139398188?chn=ps>

Real life connection: The Romans used these devices to “lift” water to a higher elevation in order for gravity to move water through their complex water delivery systems.

Other Technologies Used/Teacher Background:

1. Water heater. This stores water at homes/businesses. It heats water up so less time is spent “running” water to heat it up. It can be compared to heating water up and storing it in a thermos for future use. Most water residential heaters use gas to heat up the water. In case of an emergency, this water can be accessed for use.