



Water Engineering

How does acequia irrigation work?

Hydrology is the science of water movement over land. Irrigation is an engineering system to bring water to crops in places where there is not enough rainfall to sustain them. How does gravity help with moving water?

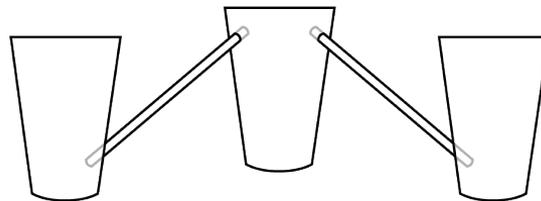
What you'll need:

- Disposable cups
- Drinking straws
- Modeling clay
- Box cutter, X-acto knife, or hole punch
- Water

Here's what to do:

1. With adult supervision, very carefully use the box cutter to make **two** X-shaped slits (or use the punch to make holes) in the upper $\frac{1}{3}$ of one cup, on opposite sides of the cup.
2. On two other cups, make **one** X-shaped slit or a hole on each cup in the bottom $\frac{1}{3}$ of the cup.

3. Poke a straw through each slit/hole in the first cup, then poke the other end of the straws through the slits/holes in the other cups. Use the modeling clay to form a waterproof seal around the straw and slit/hole inside each cup.



4. Slowly pour water into the middle cup. What happens when the water level reaches the straws?

Explore further: Can you design a bigger irrigation system with more cups and straws? How could you transport water over longer distances or to multiple cups in a chain? Is it possible to distribute the water equally to each cup? What happens if you change the angle of the straws or the speed you pour the water?

Ask someone who uses acequia irrigation: Where does the water come from? How do they control the distribution and flow of the water?