



Curiosity Guide #206

Liquid Forces

Accompanies Curious Crew, Season 2, Episode 6 (#206)

Pouring Water on an Angle

Investigation #9

Description

Doesn't water usually pour straight down? Can you make the water pour at an angle? We dare you!

Materials

- Heavy string, 12 inches long
- Scissors
- Ruler
- 2 weights
- 1 glass of water
- 1 dish of water
- A tray to catch spills

Procedure

- 1) Measure and cut a 12-inch length of heavy string.
- 2) Tie a small weight on each end of the string.
- 3) Submerge the string and weights in water. Make sure the string is saturated.
- 4) Set out the tray on a table. Place the dish of water on the right edge of the tray.
- 5) Place one end of the string with the weight in the dish.
- 6) Hold a glass of water in the air in your left hand, over the left side of the tray.

- 7) Stretch the other end of the string and weight to the glass of water that you are holding.
- 8) Adjust the height of the glass and the position of the string so that:
 - The string is at an angle to the dish.
 - The string is not touching the rim of the dish.
 - The string is touching the rim of the glass.
- 9) Slowly tip the glass over so that the water travels down the string into the dish.
- 10) What happened? What happens if you change the angle of the string?

My Results

Explanation

When the string is wet, the water on the string attracts to the poured water molecules because of their **cohesive force**, which is the attraction of the same kinds of molecules to one another.

If the string is dry, the water will spill from the upper cup. If the string hits the rim of the dish, the water will travel down the outside of the dish because of adhesion, and the water will trickle onto the tray.

Did you notice? By stretching the wet string taut, you could pour at a pretty extreme angle!

Something else to try:

Here is a fun activity to try. You'll need 3 toothpicks, a container of water, and a tiny bit of dish soap. Carefully float two of the toothpicks side by side in the container of water. Be sure to put them in gently. Then dip the end of the third toothpick in dish soap and touch the water between the floating toothpicks. They will quickly move away from each other. Remember, soap breaks that surface tension!

Parents and Educators: use **#CuriousCrew**
#CuriosityGuide to share what your Curious
Crew learned!



Curious Crew is a production of Michigan State University.

Learn more at WKAR.org.

© MSU Board of Trustees. All rights reserved.