



Water and Gravity

How does gravity affect the force of water?

Materials:

- Two plastic glasses
- Ladder
- Plastic tubing, 2 feet (0.6 meters)
- Two binder clip or small clamp
- Table
- Book
- Water

Procedure:

1. Place the ladder next to the table and put the book on the table.
2. Fill one of the glasses almost to the top with water and stand it on the top rung of the ladder.
3. Put the empty glass on the table on top of the book.
4. Fill the tubing with water and pinch the ends tightly so the water doesn't run out. Put a binder clip or clamp on each end.
5. Put one end of the tube under water in the full glass and unclamp that end. Make sure that the end doesn't flop out of the water.
6. Put the other end of the tubing in the empty glass.
7. Release the paper clamp on the end of the tubing and watch the water flow.
8. Try raising the low glass without letting the tube come out of the water at either end.
9. Try lowering the glass on the ladder without letting the tube come out of the water at either end.

How does it work?

Gravity pulls the water down on the lower side of the tube, while air is pushing the water into the tube on the high side. Together, they create the flow of water through the tube. When the water is at the same level in both glasses, gravity is pushing on both sides of the tube and the flow stops.

Journal Questions:

1. What happened when you began to raise the low glass?
2. What happened when you began to lower the high glass?
3. Would it work if you had water in the low glass?
4. What would happen if the tube wasn't filled with water? What is blocking the water from coming to the other end?
5. Water engineers consider gravity when they choose sites for water treatment plants and wastewater treatment plants. Which one of these plants should be placed at the highest point of the city? Which one of these plants should be at the lowest point of the city?