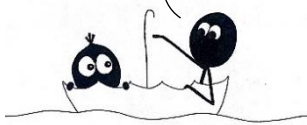
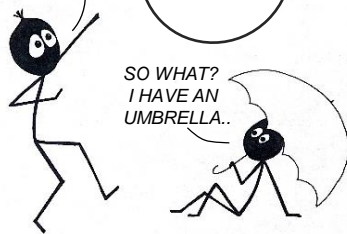


SCIENCE MOM'S Guide to WATER **Part 1**

SEE? RAIN IS NO PROBLEM WHEN YOU HAVE AN UMBRELLA.



LOOK OUT! IT'S RAINING!

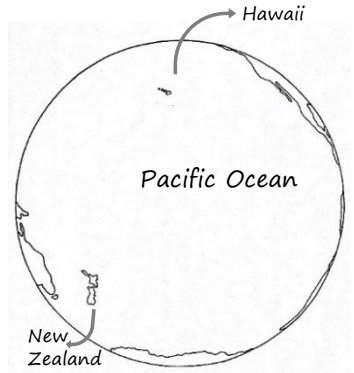


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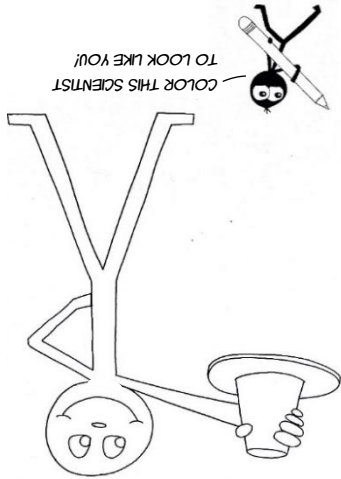
Water is the *only* thing on our planet that exists naturally in all three states of matter—as a solid, liquid, and a gas.



Gaseous water, or water vapor, is invisible. You can't see it, but it's in the air around you and we call it **humidity**.



Oceans cover most of the planet, and so does another form of water: clouds.



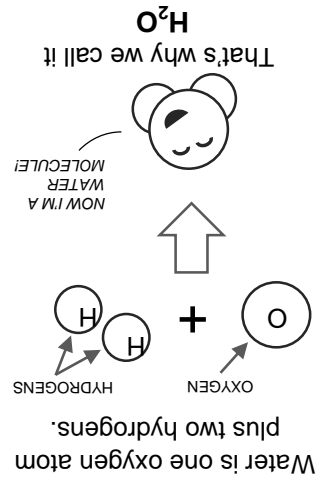
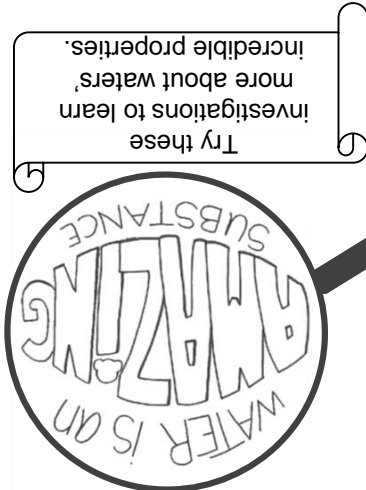
a) Pour water in the cup and place the lid on top.
b) Put hand on top of lid and INVERT the cup (Turn it upside down).
c) Remove hand and be amazed!

Method:

Materials:

- Cup
- Water
- Plastic lid, or a piece of cardstock or cardboard.

1. Gravity Defying Lid



2. Magic Screen

Materials:

- Jar with a metal ring
- A piece of screen or mesh
- Lid
- Water

Method:

- Fill jar to rim and secure screen on top.
- Cover with lid and invert.
- Remove lid and observe.

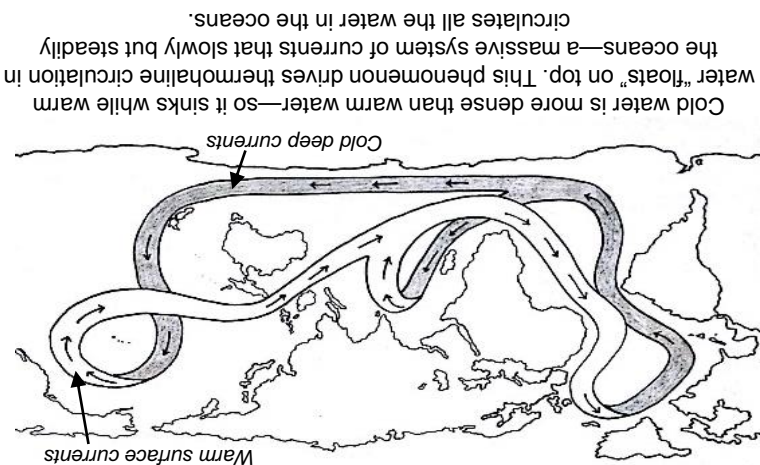
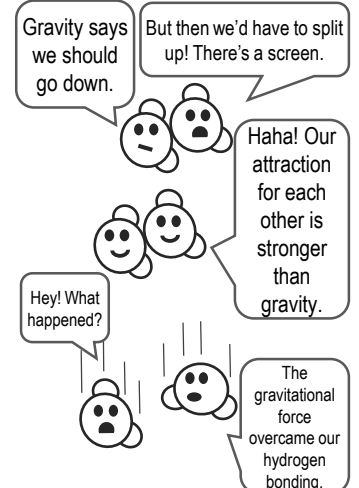
No jar? No problem. Use a cup and rubber band.



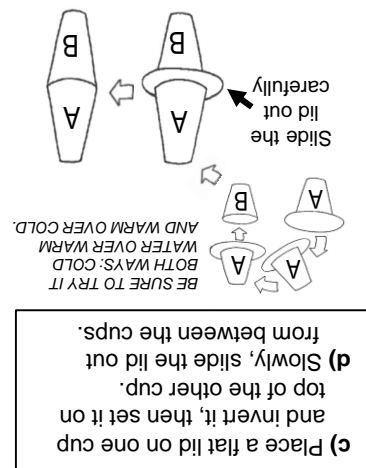
HOW DOES IT WORK?

Cohesion! That means water molecules like to stick together.

When you invert the jar those water molecules feel the tug of gravity, but their attraction for each other is strong enough they effectively form a "lid" on the bottom of the jar, just like the lid or cardboard did in the first investigation. If air can't get in, then water can't go out. So the water stays in the jar—until you tip or shake it. Then gravity wins.



Cold water is more dense than warm water—so it sinks while warm water "floats" on top. This phenomenon drives the thermohaline circulation in the oceans—a massive system of currents that slowly but steadily circulates all the water in the oceans.



- Place a flat lid on one cup and invert it, then set it on top of the other cup.
- Slowly, slide the lid out from between the cups.

a) Add different colors of food coloring to each cup.

b) Fill each cup to the brim, one with warm water and the other with cold.

Method:

- Food coloring
- A flat lid or cardboard
- 2 identical clear cups
- Warm and cold water

Materials:

3. Hot & Cold Cups