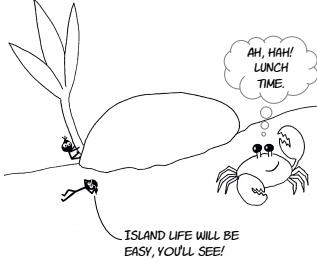
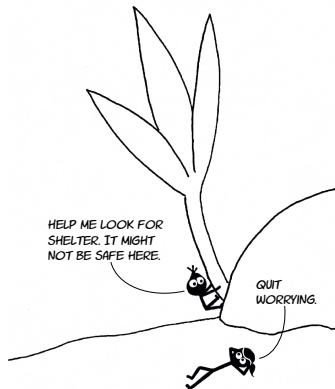


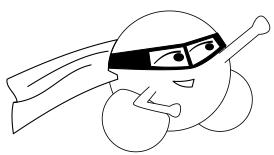
SCIENCE MOM'S Guide to WATER, Part 7



SCIENCE MOM
JENNYBALLIF.COM
www.youtube.com/ScienceMom

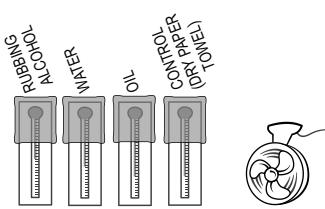
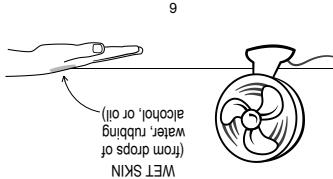


If you add the same amount of heat to water and sand, the sand will heat up FIVE times more than the water. It's almost as if water has a super power to be resistant to changes in temperature.



The ability of water to absorb a lot of heat before changing temperature is known as having a "high specific heat capacity." This attribute of water regulates the temperature of our planet, helps us cool down when we sweat, and much more.

SPECIFIC HEAT CAPACITY = THE AMOUNT OF HEAT ONE GRAM ABSORBS OR LOSES TO CHANGE TEMPERATURE BY 1 DEGREES CELSIUS. WATER HAS A SPECIFIC HEAT OF 1 CALORIE (OR 4.18 JOULES)



- Materials:
 • Rubbing Alcohol
 • Water
 • Oil
 • A fan
 • A thermometer (optional)
 • A fan
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 • A thermometer (optional)
- Method:
 a) Put a small bit of water on the top of your hand.
 b) Place your hand in front of the fan so that the wind is blowing over it for at least 20 seconds.
 c) Repeat with the rubbing alcohol fan so that the wind is blowing over it for at least 20 seconds.
 d) Optional variation: place paper towels soaked in different liquids over the temperature over 5 to 10 minutes.

1. Evaporation Sensation

2. Water Cycle in a Jar

Materials:

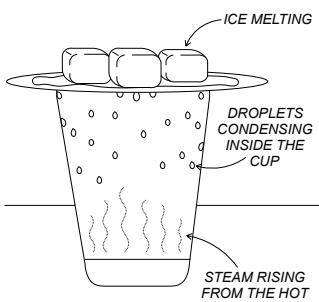
- Clear jar or cup
- Ice
- Hot water
- Plate

Method:

- Place a small amount of hot water in the cup or jar.
- Cover the cup or jar with a plate and place ice on top of the plate.
- Observe the water droplets condensing on the sides of the cup and underneath the plate.

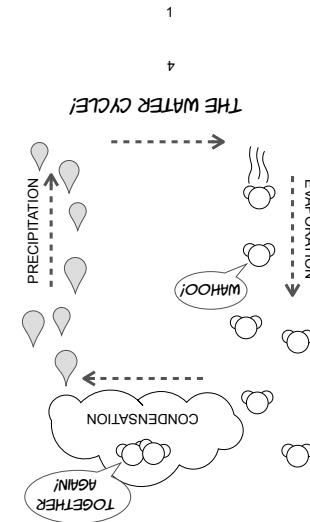


ALL THREE STATES OF WATER TOGETHER IN ONE COOL PLACE:



- Materials:
 • Water
 • Balloons
 • Candles
 • Matches
- Method:
 a) Put a few spoonfuls of water into the balloon, and no water into the other balloon.
 b) Blow up each balloon and tie a knot at the ends.
 c) Light the candle. NOTE: ALWAYS HAVE ADULT SUPERVISION WHEN USING FIRE A BIRTHDAY CAKE WILL STAY UPRIGHT.
 d) Hold a balloon over the flame so that it just barely touches the flame.
 e) Observe if and when they pop!

5. Pop-proof balloon



Water's high specific heat also plays a big role in how and when water changes between solid, liquid, or gas. Have you ever gotten out of a shower or bath and noticed how cold you feel while you're wet? That's because it takes a lot of energy for temperature drops to break a sweat. Because it takes a lot of energy for water to change from liquid to gas. As evaporates, it pulls heat from your body. That energy (heat) that evaporates is used to change water from liquid to gas.

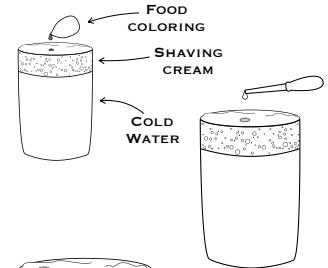
3. Rain in a Jar

Materials:

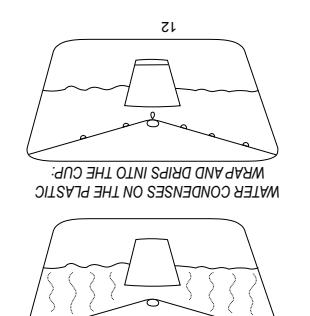
- Clear jar or cup
- Food coloring
- Shaving cream
- Dropper

Method:

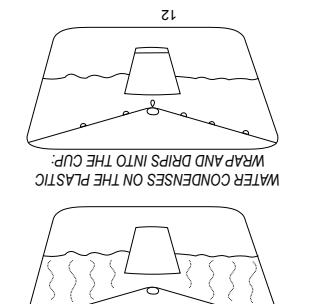
- Fill the jar most of the way full with warm water.
- Add shaving cream and smooth it out so the shaving cream completely covers the water.
- Add 5 to 7 drops of food coloring on top of the shaving cream.
- Observe for a few moments. If desired, use a water dropper to add 3 to 4 drops of water on top of the spot(s) of food coloring.
- Observe the jar and watch as the food coloring moves down and into the water.



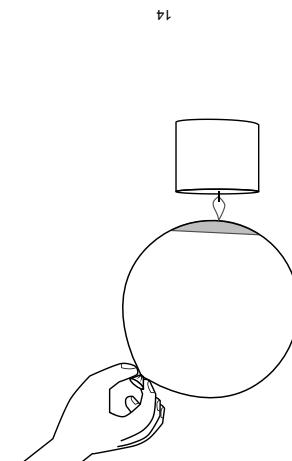
Water travels through the shaving cream because water is more dense. Similarly, rain occurs when droplets get big enough to be more dense than the surrounding air.



9



10



- Materials:
 • Plastic wrap
 • Small cup
 • A small pebble
 • Dirt
- Method:
 a) Place damp dirt into the large bowl or container.
 b) Put the small cup or bowl in the center of the large bowl or container.
 c) Cover the bowl with a plastic wrap so the plastic wrap has a low point over the center of the cup.
 d) Secure the plastic wrap so that it is tight. Use tape if needed.
 e) Place the container in direct sunlight and leave outside overnight.

Water condenses on the plastic wrap so the plastic wrap has a low point over the center of the cup. So the plastic wrap is held in the center of the bowl or container. It is tight. Place the container in direct sunlight and leave outside overnight.

Materials:
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 • Plastic wrap
 • Small cup
 • A small pebble
 • Dirt

Method:
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 e) Place the container in direct sunlight and leave outside overnight.

4. Water from dirt

B

A

A

X

B

C

C

D

F

E

E

D

E

G

G

X