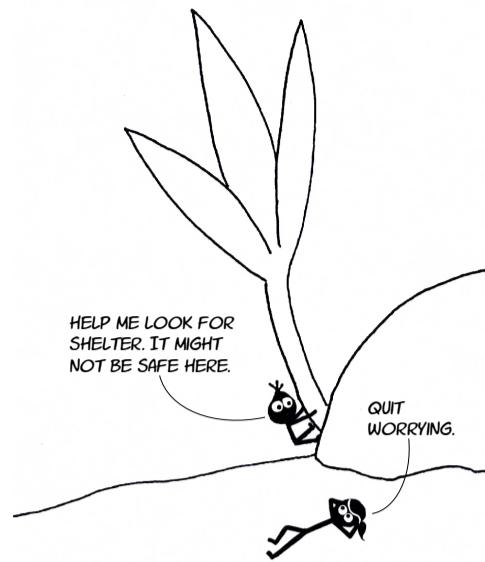


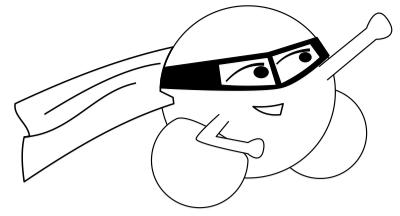
## SCIENCE MOM

— www.science.mom —  
[www.youtube.com/ScienceMom](http://www.youtube.com/ScienceMom)

### SCIENCE MOM'S Guide to WATER, Part 7



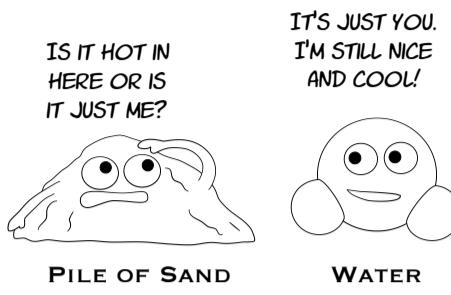
If you add the same amount of heat to water and sand, the sand will heat up FIVE times more than the water. It's almost as if water has a super power to be resistant to changes in temperature.



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)

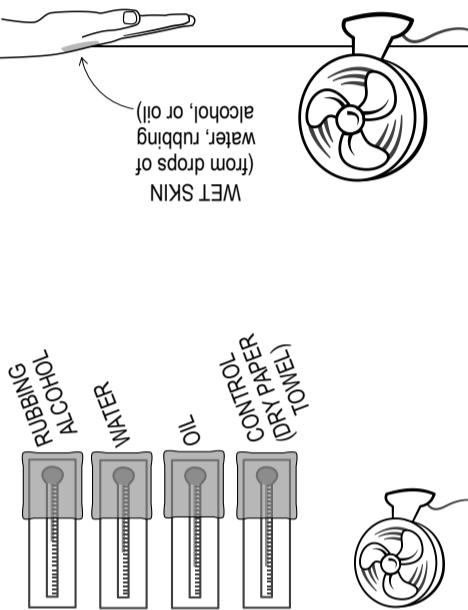
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- Optional variation: place paper towels soaked in different liquids over the thermometers. Observe the change in temperature over 5 to 10 minutes.
- a) Put a small bit of water on the top of your hand.  
**Method:**  
 • Rubbing Alcohol (optional)  
 • Water  
 • Oil  
 • Fan  
 • Thermometers
- b) Place your hand in front of the fan so that the wind is flowing over it for at least 20 seconds.  
 Make note of how much colder the wet part of your skin feels.  
 Make note of how much colder over 10 minutes.
- c) Repeat with the rubbing alcohol and oil.
- d) Place your hand in front of the fan so that the wind is flowing over 10 minutes.
- e) Optional variation: place paper towels soaked in different liquids over the thermometers. Observe the change in temperature over 5 to 10 minutes.

## 2. Water Cycle in a Jar

### Materials:

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

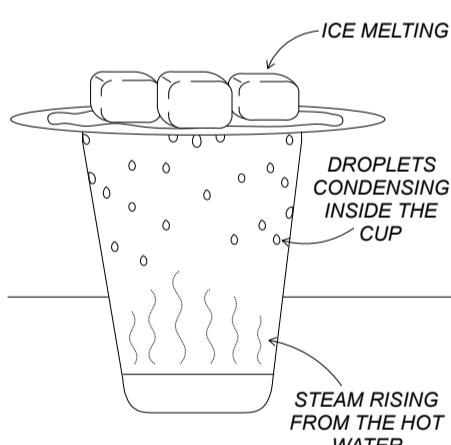
### Method:

- 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.

HAVE YOU EVER SEEN WATER CONDENSE ON THE OUTSIDE OF AN ICE-COLD DRINK? THE MORE HUMID IT IS, THE WETTER THE CUP WILL BE.

THAT'S WHY COASTERS WERE INVENTED!

### ALL THREE STATES OF WATER TOGETHER IN ONE COOL PLACE:



- Method:**
- Put a few spoonfuls of water into one balloon, and tie a knot at the ends.
  - Blow up each balloon and tie a knot at the ends.
  - Light the candle. NOTE: ALWAYS HAVE ADULT SUPERVISION WHEN USING FIRE. A BIRTHDAY CAKE CHOCOLATE CHIP CAKE IS NOT THE BEST CHOICE. YOU WANT A CANDLE THAT WILL STAY UPRIGHT.
  - Hold each balloon over the candle so that it just barely touches the flame.
  - Observe if and when they pop!
- Materials:**
- Water
  - Balloons
  - Candle
  - Matches

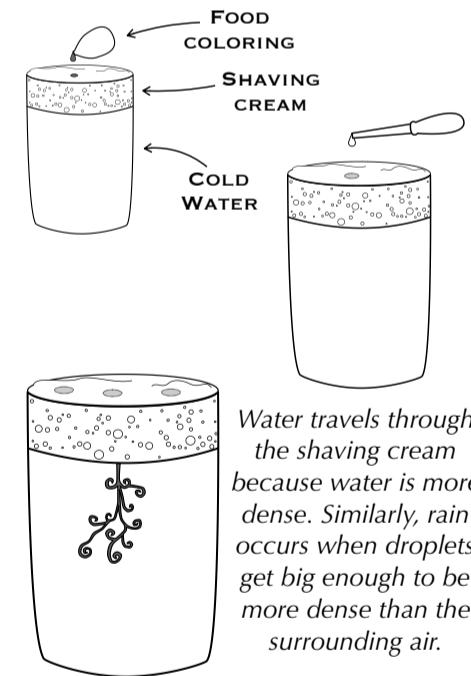
## 3. Rain in a Jar

### Materials:

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

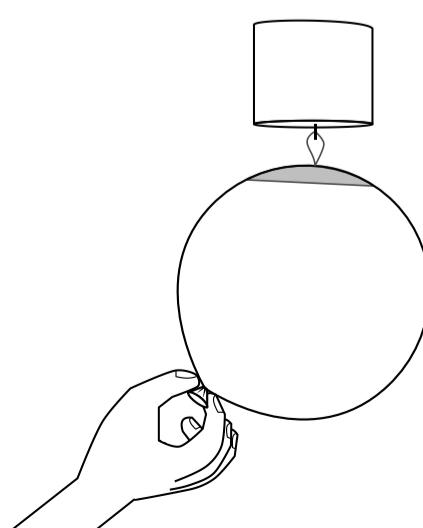
### Method:

- 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.

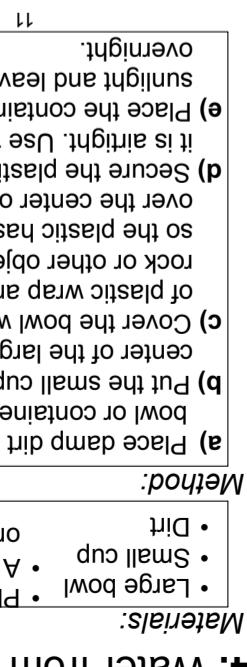
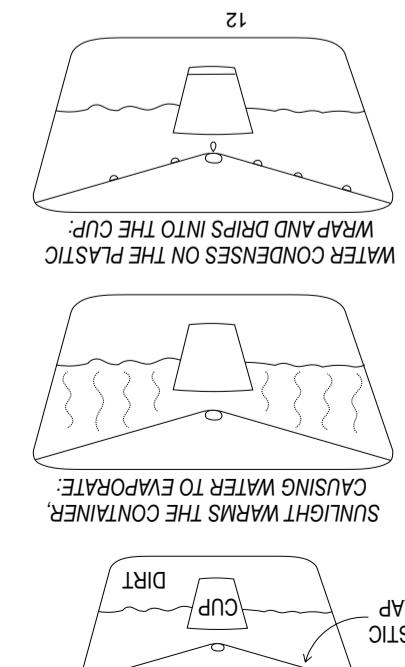


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- Method:**
- Put a few spoonfuls of water into one balloon, and tie a knot at the ends.
  - Light the candle. NOTE: ALWAYS HAVE ADULT SUPERVISION WHEN USING FIRE. A BIRTHDAY CAKE CHOCOLATE CHIP CAKE IS NOT THE BEST CHOICE. YOU WANT A CANDLE THAT WILL STAY UPRIGHT.
  - Hold each balloon over the candle so that it just barely touches the flame.
  - Observe if and when they pop!
- Materials:**
- Water
  - Balloons
  - Candle
  - Matches



**Method:**

- Dirt
- Large bowl
- Plastic wrap
- Small cup
- A small pebble

- Place the small cup in the center of the large bowl or container.
- Put the damp dirt into the large container.
- Cover the bowl with a loose layer of plastic wrap and place a small rock or other object in the center of the wrap so the plastic wrap stays in place.
- Secure the plastic wrap so that it is air tight. Use tape if needed.
- Place the container in direct sunlight and leave outside overnight.

**Materials:**

- Water from dirt
- Large bowl
- Plastic wrap
- Small cup
- A small pebble

B

A

A

X

B

C

C

D

F

E

E

D

E

G

G

X