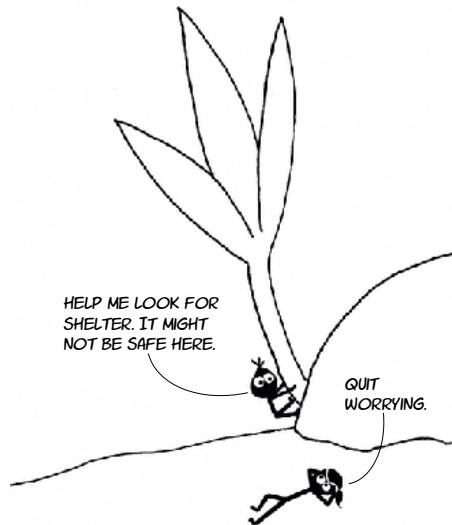


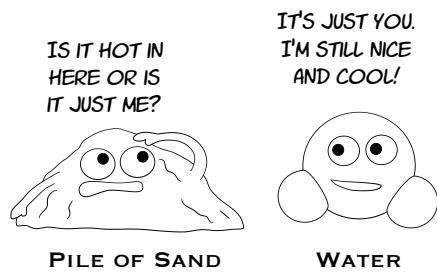
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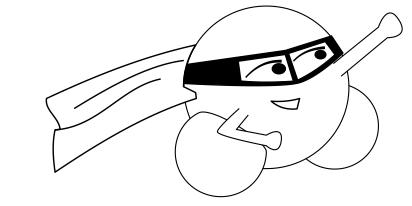
SCIENCE MOM'S Guide to WATER, Part 7



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.



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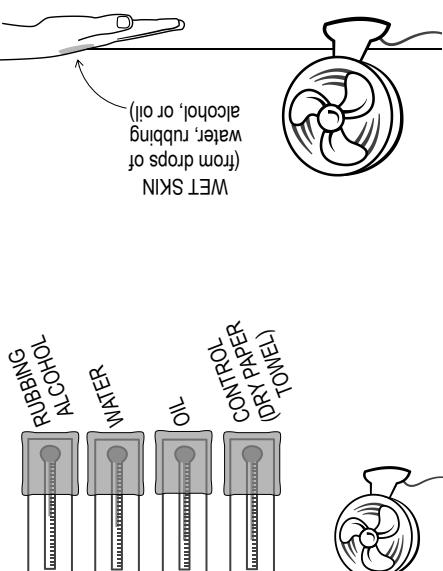


The ability of water to absorb a lot of heat before changing temperature is known as having a "high specific heat capacity." This attribute of water regulates the temperature of our planet, helps us cool down when we sweat, and much more.

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)

2

6



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

1. Evaporation Sensation

2. Water Cycle in a Jar

Materials:

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

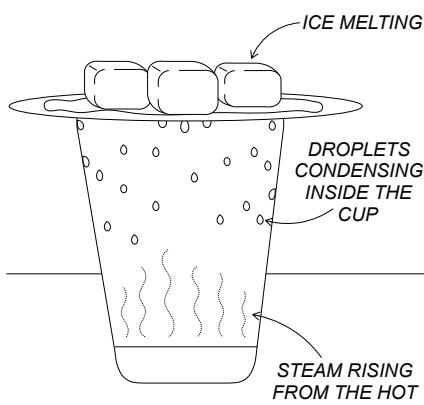
Method:

- 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.

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:



8

7

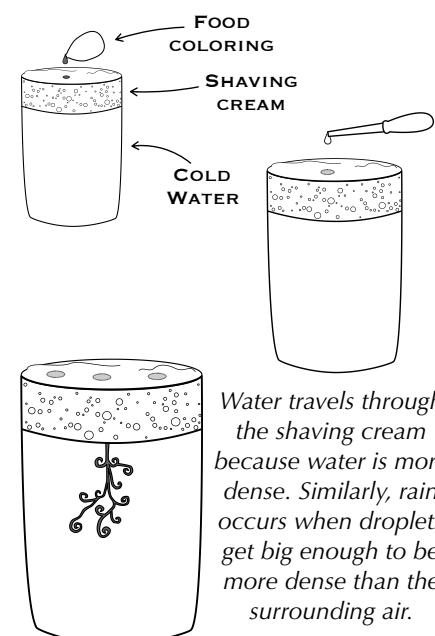
3. Rain in a Jar

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.

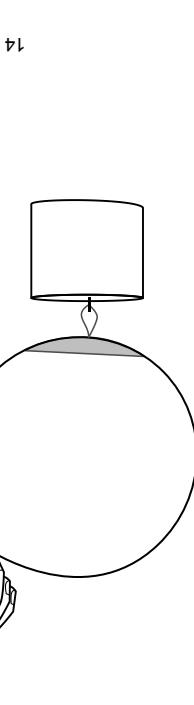


10

9

- 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 CANDELS ARE 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.
 - Watch as the water droplets form on the outside of the balloon.
 - Observe if and when they pop!
- Materials:
- Balloons
 - Water
 - Candle

5. Pop-proof balloon



14

- Method:
- Put the small cup in the large bowl or container.
 - Cover the bowl with a loose layer of plastic wrap and place a small rock or other object in the center of the plastic wrap so that it is air tight. Use tape if needed.
 - Secure the plastic wrap so that it is airtight. Use tape if needed.
 - Place the container in direct sunlight and leave outside overnight.
 - Place damp dirt into the large bowl or container.
 - Put the small cup in the large bowl or container.
 - Cover the bowl with a large container.
 - Rock or other object in the center of the plastic wrap so that it is air tight. Use tape if needed.
 - Secure the plastic wrap so that it is airtight. Use tape if needed.
 - Place the container in direct sunlight and leave outside overnight.
- Materials:
- Dirt
 - Large bowl
 - Plastic wrap
 - Small cup
 - A small pebble

11

12

13

14

B

A

A

X

B

C

C

D

F

E

E

D

E

G

G

X