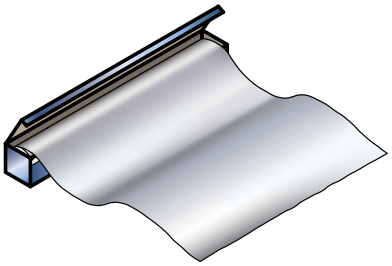
Investigation: It's Raining in the Coffee Pot!

MATERIALS

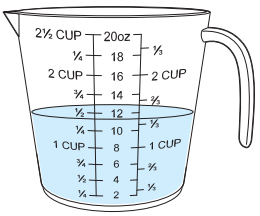
- water
- ice cubes
- cooler
- drip-type coffee pot with filter basket (no coffee, filter or lid needed)
- aluminum foil
- pot holder or oven mitts
- plastic measuring cup
- flashlight
- plastic cup, transparent
- paper towel



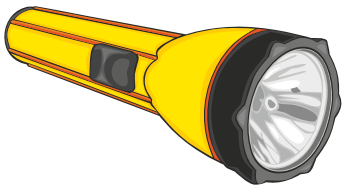
CAUTION: Explain throughout that only adults can do this investigation. Use the hot mitts to reinforce this warning. As a safety precaution, keep the students seated away from the coffee pot as you demonstrate.

DIRECTIONS:

1. Pour one or two cups of water in the reservoir of the coffee pot. Then turn it on. When the hot water starts flowing into the pot, point out the steam. Remind students that steam is water vapor that you can see rising into the air. The heat of the coffee pot changed water into vapor.



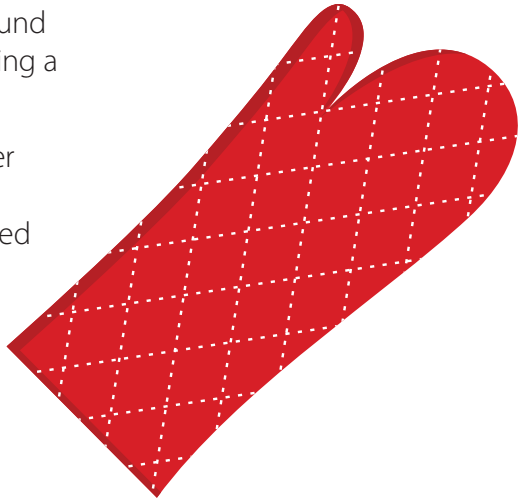
2. After all the hot water has flowed into the pot and the steam has decreased, use the oven mitts to remove the filter basket. You can show students that the water vapor is still rising into the air, even if it is not as visible. Shine a flashlight just above the pot. Students should be able to see the vapor in the beam of the flashlight. Or, you can hold the plastic cup just above the coffee pot and show students the vapor that collects on the cup.



3. Tell the class that the vapor is like a coffee pot cloud.

4. After the reservoir stops dripping, carefully wipe the moisture off the inside glass sides of the pot (above the water line) with a paper towel.

5. Place the aluminum foil over the opening of the pot and crimp it around the edges. Fill the cover with ice cubes. Talk to students about ice being a solid form of water.



6. Watch as the vapor begins to condense on the underside of the cover and to drip into the pot. Even if moisture collects inside again on the glass sides of the pot, students should still be able to see the disturbed surface of the water as the condensation drips into the pot.

7. Tell the class that the dripping is like rain in the coffee pot.