

July 16, 2011 – Evaporation

Wowza! It sure was hot last week. I think I almost melted. It seems time to use this hot weather to help us complete some science experiments. This one is fairly simple, but pretty neat at the same time.

****Remember to always ask an adult before completing any science experiment****

Materials:

- 2 clay or ceramic pot with a drainage hole
- 2 trays for the pot (Bigger than the opening of the pot)
- thermometers
- water
- Plasticine or modeling clay (non-drying)

Procedure:

1. Choose a warm day to do this experiment.
2. Turn both pots upside down and put the thermometer into the hole. Make sure the end of the thermometer is approximately 3 cm into the pots.
3. Seal this with some plasticine. This will ensure none of the heat produced by the experiment will escape and it will keep the thermometer in place.
4. Label one of the pots with #1 and the other with #2.
5. Place pot #1 on the tray, keeping it dry.
6. Fill the other clay tray with water and place pot #2 on it. Each pot should be upside down on their trays with a thermometer sticking out of them.
7. Leave your pots in the sun for an hour, and come back and check on them. What did you notice? If nothing has happened to the temperature of the pots, leave them in the sun and come back to them every hour to see a change.

Explanation:

The change we are looking for in this experiment is a change in the temperature of the two pots. Pot #2 should have a slightly lower temperature than Pot #1, and some of the water you originally put in the tray should be gone. So what happened?

We demonstrated one of the properties of evaporation. Evaporation happens to water all the time, in fact it is a pretty important step in the water cycle. Evaporation is the process in which liquid molecules turn into gas molecules and it happens at the liquid's surface. It is why a glass of water left out on the counter isn't there a week from now.

Evaporation is what scientists call an endothermic reaction. This means it needs energy from the outside to occur. So on a hot day, when the sun's energy is really high, the water will evaporate faster than on a cool day when we aren't receiving as much energy from the sun.

Pot #2 had a lower temperature than Pot #1 because the water was using some of the energy around it (heat energy) to turn the liquid water in water vapour. The water is using that energy, so the temperature drops. We set up two pots one with water and the other without, so we would have something to compare our results to. Every experiment needs a control (Pot #1) and an experimental element (Pot #2).

We did an experiment last summer that looked at why people and animals sweat, and we found out that we sweat on a hot day in order to cool down. So we know evaporation really works!

Happy Experimenting!

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