

Warm it UP!

Have you ever noticed that puddles seem to dry up faster on a warm day than on a cool day? What makes that happen and where do you think the water goes?

Materials:

- 2 wide clear plastic cups
- 2 tall clear plastic cups
- Hot tap water
- Room temperature water
- Magnifier

Procedures:

1. Fill one punch cup about 2/3 full of hot tap water and fill another about 2/3 full of room temperature water.
2. Quickly place a tall clear plastic cup upside down over each of the punch cups as shown.
3. Watch the cups for about 2-3 minutes.



4. Look very closely at the sides and top of the top cups. Do you notice any difference between them? Use a magnifying glass if you have one. What do you think is on the inside of the cup over the hot water? How do you think it got there?

Think about this ...

There are lots of examples where water evaporates faster when it is warmed than when it is cold or room temperature. Wet towels and clothes dry faster in warm weather because the water evaporates faster. Can you think of any other examples?

Where's the Chemistry?

Any sample of water is made up of an enormous number of water molecules. At all times, some of the water molecules are breaking away from the rest of the water and going up into the air. When water molecules do this, they change from liquid water to water vapor – a gas. This changing from a liquid to a gas is called evaporation. Heating a liquid causes evaporation to happen faster. That's why there is more evaporation from the hot water than the room temperature water. The water vapor is invisible so what you see on the inside of the top cup is actually the water vapor that has already turned back to liquid water.

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