

## **THE DISAPPEARING LIQUID**

**A. Question:** *How long does it take for something to evaporate?*

**B. Materials Needed:**

1. A medicine dropper & wall clock (or timers)
2. Rubbing alcohol (isopropyl alcohol) or methyl hydrate

**C: Procedure:**

1. Have each of the students stretch out one of their hands with the palm facing up and held horizontally.
2. Come around with the “colorless liquid” (the alcohol) and the dropper; place 3-4 drops on each of the palms.
3. Have the students measure the time it takes for the liquid to evaporate completely.
4. You may repeat the activity, but this time have the students race to evaporate the liquid as fast as possible. They may do anything to the liquid except remove it from their palm or apply a match to it. Some may try blowing it, spreading it, etc.

**D: Anticipated Results:**

Within minutes the students should observe that the liquid disappears or evaporates.

**E: Thought Questions for Class Discussion:**

1. Where did the liquid disappear to?
2. What did you observe during the evaporation process?
3. How long did it take for three drops to evaporate?
4. Which method proved to be the most effective to speed up evaporation?
5. Where did the energy to change the liquid into a gas come from?

**F: Explanation:**

As alcohol is very volatile, it evaporates quickly. The three drops on the palm evaporate within a few minutes. The transfer of a liquid into its vapor state takes energy. This energy is usually supplied to the liquid in the form of heat. When this heat is not supplied to the liquid, and it evaporates by itself, it withdraws the heat from its environment. This is why the palm feels cool.

The evaporation process can be sped up by blowing over the liquid and by making its surface area larger by spreading it over the whole palm. Doing both at the same time would probably be the most time efficient. Each of these methods would increase the rate of evaporation.