

# Foggy Hands

**Overview:** Skin has another function that is vital to your survival: temperature regulation. Being exposed to high temperatures causes your skin's pores to open up and release sweat onto your body. This helps cool us off by the resulting process of evaporation.

Your pores will close in extremely cold temperatures. Also, the body stops blood flowing to the skin in order to conserve heat for the important vital organs and their processes. In this lab, we study the moisture that your skin produces.

## Materials

- baggie, gallon size
- string, 12 inches long
- pencil
- clock

## Experiment

1. Record a description of how moist your hand is prior to putting it in the baggie. This is at *0 minutes*.
2. Put your hand in the baggie and use the string to close it around your wrist. No air should be able to get in or out of the baggie. Record the time for tracking purposes.
3. Check your hand every 10 minutes for a half hour. With each observation note the amount of moisture that has accumulated. Record your observations at *10 minutes*, *20 minutes*, and *30 minutes*.
4. What do you think will happen if you go outside and run around with your hand inside the bag? Try it and see if it accelerates the process.

## Foggy Hands Data Table

Time	Observation
0 minutes	
10 minutes	
20 minutes	
30 minutes	

### Reading

Sweat glands are always producing moisture on our skin, releasing it through the pores. When this moisture hits the air, it starts to evaporate – which means it changes from a liquid into a gas or vapor. This process helps to cool us down. Most of the time, we don't really notice that it's going on (unless we're really active or it's a very hot day). But by enclosing your hand in plastic, this moisture can't evaporate as it normally would. In this experiment, the bag collects and condenses it.

It is interesting to note that your body can produce up to a gallon of water in extremely hot temperatures – 110 degrees Fahrenheit and higher. This is one of the reasons it's so important to stay hydrated in extreme heat!

### Exercises

1. How is sweat released from the body through the skin?
2. How does sweat help to cool the body?
3. What did you observe at the 30 minute mark in your experiment?
4. What is evaporation and how is it different from condensation?

**Answers to Exercises: Foggy Hands**

1. How is sweat released from the body through the skin? (via pores)
2. How does sweat help to cool the body? (It's released onto the skin and evaporates, which is cooling.)
3. What did you observe at the 30 minute mark in your experiment? (Answers will vary, but the bag should be foggy and the hand will be wet.)
4. What is evaporation and how is it different from condensation? (Evaporation turns a liquid into a gas [or vapor], condensation turns it from a gas back to a liquid.)