

ScienceSource 7 > Chapter 10 > Body Heat Background

**Background:**

In our Canadian climate, it's important to dress properly for the conditions. In particular, certain parts of the body must be carefully insulated against heat loss, as they tend to lose heat faster.

Is it possible to determine which parts of the body lose heat faster?

**Task:**

What parts of the body lose heat the fastest?

**Materials:**

- Temperature sensor and computer
- Beaker of cool water

**Procedure:**

For this activity, a temperature sensor is used to track the temperature change over time for different parts of the body.

**Step 1:**

Prepare a half full beaker of cool water. The exact temperature of this water is not important. This beaker will be used to bring the temperature sensor back to a similar starting temperature between trials. Place the end of the temperature sensor into the water.

**Step 2:**

Connect the temperature sensor to your computer.

**Step 3:**

Configure the data collection software to collect temperature data over time. It is also recommended to display the temperature digitally as well as in a graph, so it can be seen to change minute to minute.

**Step 4:**

Take the temperature probe from the water and place it against the back of your hand:

As soon as the sensor is in contact with your hand, start recording data and continue for about 30 seconds.

Stop collecting data and put the temperature sensor back into the water.

**Step 5:**

Repeat step 4 with different body parts, such as the top of your head (against the skin) and against the armpit.

**Forming Conclusions:**

- Explain the results you obtained. Do different parts of the body lose heat at different rates? If they do, why?

**Applying and Connecting:**

- Suppose you were to fall off a boat into very cold water. What do your results mean in regard to cold water survival?