

# Heat Be Gone!

## A Qualitative Approach

### Student Handout



## Introduction

The human body is an excellent indicator of temperature change. The nerve receptors on the surface of the skin act like tiny thermometer bulbs. Information is transmitting by impulses to our brain indicating even the tiniest temperature fluctuation. Your skin will feel cool if heat from within your body is being transferred to another surface. Your skin will feel warmer if heat is transferred into your body.

During the following lab you will put your temperature indicating system to the test. You will use your thermometer (skin) to make a qualitative analysis (analysis with no actual numbers) of the conductivity of five different materials. Sounds like fun, doesn't it?

## Materials:

**All of the items should be room temperature.**

- 1 Roll of paper towels
- 1 piece of wood
- 1 piece of cloth
- 1 bowl of water
- 1 piece of metal (example – bowl, large spoon, pan, pot)
- 1 room with “air”

## Data Table #1

Item	Describe your observations below
1. air	
2. wood	
3. water	
4. metal	
5. cloth	

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## Procedure

1. Describe how your skin feels in room temperature air. (Data table #1)

2. Carefully place each of the following against your skin. The water will be a little tricky. You will need to alternate sides or wait between trials to allow the skin to return to its original temperature. Record your observations in data table #1. Please pay special attention to any temperature changes you notice and the duration (time length) of the change.

- A. air
- B. wood
- C. water
- D. metal
- E. cloth

3. Clean your testing area in accordance to your teacher's discretion.

## Data analysis (questions)

1. A. Why did the 5 items feel like they had a different temperature even though they were all the same temperature? \_\_\_\_

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B. Is the skin a reliable indicator of temperature? (Explain) \_\_\_\_\_

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2. Rank the following according to conductivity. (least to greatest) A. air B. wood C. water D. metal E. cloth

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3. Why does a pool that is 70 degrees Fahrenheit feel so cold? Why does a cold pool pose more of a risk for a smaller child in comparison to a larger child? \_\_\_\_\_

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