Melting Lab Name _____ Period _____

The purpose of this lab is to investigate on a macroscopic scale what is happening on the microscopic level.

Before experimenting, answer the following:

1. Explain the process of melting. Why does ice melt? (think on a particle scale!)

2. The melting point of ice is 0°C or 32°F. Does that mean that ice only melts at exactly that temperature? Explain.

3. Explain the process of conduction. Use a particle model to explain why different solids might be better or worse conductors of heat.

4. If you have 3 blocks that are the same size sitting on a desk, are they the same temperature? Why or why not? Explain

5. You are going to put an ice cube on 3 different surfaces – plastic, metal and wood. You will compare rates of melting between them. Predict how the rates of melting will differ between each surface and provide reasoning for your explanation.

Procedures

1. Obtain 3 blocks, one metal, one plastic and one wood and 3 ice cubes of close to the same size.
2. All at once, place an ice cube onto each block. Observe what happens and record in your data table.
3. Time how long it takes the ice to melt for each block and record in your data table.
4. If the ice hasn't melted after 10 minutes, estimate how much of the ice is left and record it in the table.

	Wood	Metal	Plastic
Observations			
Time to melt			

After experimenting, answer the following:

1. Compare the data you collected to your prediction. Did anything surprise you?

2. Draw a particle model of the ice melting.

3. Ice needs to gain energy to melt. Where is the ice cube getting the heat?

4. Think back to the idea of specific heat capacity. Does heat capacity help explain your results?

5. Which of the materials you used (wood, plastic or metal) is the best conductor? How do you know? Which is the best insulator? How do you know?

6. Which material would be best for an ice cube tray? Why?