Name: _____ Band:_____ Lab 10.1 Heat Capacity

Lab Objective: To compare the heat capacity of different substances.

Materials:

1)	Rock	2)	Piece of Metal	3)	Beaker	4)	Ring Stand
5)	Styrofoam cups	6)	Burner	7)	String		

Procedure:

1. Record the mass of the rock and the piece of metal
2. Tie string around the rock and tie another piece around the metal
3. Submerge the rock and metal in boiling water. Leave them in for 5 minutes. Keep string out of flame!
4. In the styrofoam cups, measure out 50 mL *room temperature* water.
5. Remove the rock from the boiling water and place it into the styrofoam cup. Record data in chart below.
6. Refill your styrofoam cup with 50 mL *room temperature* water.
7. Remove the metal from the boiling water and place it into your styrofoam cup. Record your data in the chart below.
8. Refill your styrofoam cup with 50 mL *room temperature* water.
9. Carefully measure out enough of the boiling water to equal the mass of the metal. (Hint…The mass of water is 1 gram per mL).
10. Place the boiling water into your styrofoam cup. Record your data in the chart below:

Heat capacity = mass x Δ T

Sample	Mass (in grams)	Heat Capacity
Rock		
Metal		
Boiling Water		

Sample: Rock **Total Temperature Change:**

Minutes:	**0**	**0.5**	**1**	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**	**4.5**	**5**	**5.5**	**6**	**6.5**	**7**	**7.5**	**8**
° C																	

Sample: Metal **Total Temperature Change:**

Minutes:	**0**	**0.5**	**1**	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**	**4.5**	**5**	**5.5**	**6**	**6.5**	**7**	**7.5**	**8**
° C																	

Sample: Water **Total Temperature Change:**

Minutes:	**0**	**0.5**	**1**	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**	**4.5**	**5**	**5.5**	**6**	**6.5**	**7**	**7.5**	**8**
° C																	

Calculate the heat capacities of each substance, above. Compare the heat capacities of the metal, rock and water in a short sentence:

_____
_____
_____

Explain why the objects had to be the same mass for this experimentation to work out:

_____
_____
_____