Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_

Virtual Calorimetry Lab

<http://www.classzone.com/books/hs/ca/sc/bio_07/virtual_labs/virtualLabs.html>

Using the above website, complete the lab.

Objective: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Define the following terms:

Calorimeter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Crucible: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Predictions:

List the five food samples you’ve selected in order from fewest to greatest number of Calories per gram

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (fewest number of Calories per gram)
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (greatest number of Calories per gram)

Table: Data Collection for Food Samples

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Food Sample | Initial Mass of Food Sample with crucible (g) | Final Mass of Food Sample with Crucible (g) | Changes in Mass (g) | Initial Water Temp (℃) | Final Water Temp (℃) | Change is Water Temp(℃) |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Energy Given off by Food Sample:

To figure out the Calories in the food sample use your calorimetry equation that we learned.

\*hint - the amount of energy gained by the water is equal to the amount of energy that was in the piece of food\*

The specific heat of water in this lab is with Calories instead of joules: 1 calorie/kg℃ then divide by 1000 to get into Calories.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Food Sample | Change in Mass (g) | Change in water temp (℃) | Calories in Food Sample (Cal) | Calories per gram (Cal/g)\*calories in the food sample divided by the change in mass\* |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Conclusion Questions:

1. Did you make correct predictions?
2. What is the relationship between the release of energy in the form of heat and Calories?