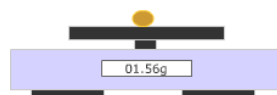| Experiment:	Measuring the energy content of different food stuffs

Apparatus

- Clamp stand + clamp
- Test tube
- 250 ml beaker
- 400 ml beaker with water
- Thermometer
- Spirit burner
- Lighter
- Metal probe (type biology)
- Digital balances

Chemicals (food samples)

- Big corn
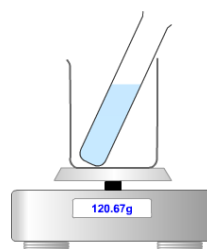- Rice cakes
- Doritos

Instructions

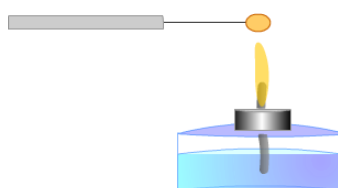- Weigh a piece of food on the digital balance.

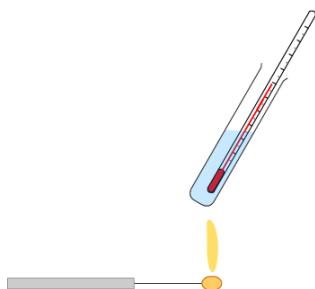- Weigh an empty text-tube by standing it on a balance in a beaker.

- Half-fill the test-tube with water and re-weigh.

- Clamp the half-full test-tube at an angle.
- Record the temperature of the water.
- Impale the food sample on a biological probe and set fire to it using the spirit burner.

- Hold the burning food sample under the half-filled test-tube to heat up the water.

- When the food sample has finished burning, re-weigh the burned food sample and record the highest temperature reached by the water.

01.56g

- Repeat the experiment to get more data for the food sample*.
- Now repeat the experiment using different types of food.
- Record all of your data carefully in a table.

Data recording

Open up an Excel document to make the table.

Create a table in Excel using the format below. Select, copy and paste into this document.

	experiment 1	experiment 2	experiment 3
Mass of empty test tube			
Mass of full test tube			
Mass of water			
Initial temperature of the water			
Final temperature of the water			
Temperature change of the water			
Mass of food before burning			
Mass of food after burning			
Mass loss in food.			

Data analysis

Energy change in water (Joules) = mass of water x 4.2 x temperature change

Energy change per gram of food = Energy change/ mass of food burned (grams)

Conclusions

You should write down the energy content available from food* per gram.

Evaluation

You should think about all of the things that you did in the course of the experiment.

You should try to identify areas in which inaccuracies arise.

Where you identify things that cause inaccuracy see if you can make suggestions that would improve the experiment.