

## FOOD FOR THOUGHT

NAME:

### 1. Results

	Dried bread	Food 2	Food 3	Food 4	Food 5
Mass of foodstuff					
Start temp.					
Finish temp.					
Rise in temp.					

- Which food, if any, provided the most energy?
- Draw a bar chart of your results - attach it to the back of this sheet.
- Below is a food label. Complete the following questions about it.

Name of food - crisps	Per 100g example	Percentage composition
Energy*	2180 KJ	
Protein	8.5g	
Carbohydrate Of which are sugars	50.0g 2.0g	
Fibre	1.0g	
Vitamins	-	
Minerals	0.2g (sodium)	
Fat Of which are sugars	8.3g 2.5g	
Water		
Total		

- Total up, but do not add in those with an asterisk \*.
- Why does the total not add up to 100g?
- How much water is present in 100g of crisps?
- How much starch is present in 100g of crisps?
- Fats can be split into two groups. Name the two groups.
- Complete the table by filling in the percentage composition.
- Draw a bar graph showing the nutritional composition of the crisps.

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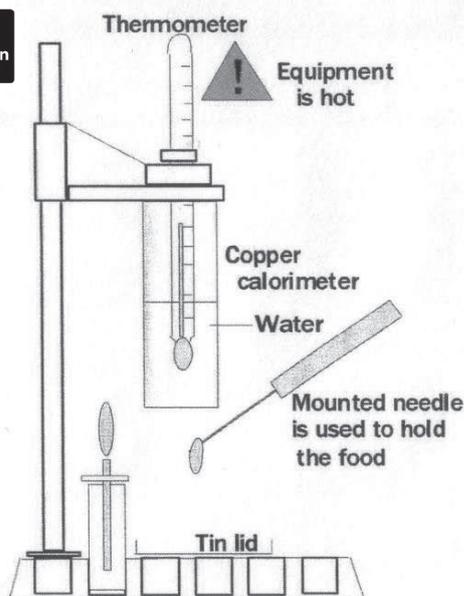
How much energy does the food you eat and drink provide for your body?

Have you looked on the side of food packs? They often tell you how much energy is provided per 100g you eat. Your body needs lots of energy for the jobs it does. In this experiment we will compare different foods for the energy they produce.

If we are to have a fair test, we must either get the same quantity of food to test and burn it completely or to burn the fuel for a set period of time. We will be heating a small amount of water and measuring the temperature increase over this time.



Eye protection must be worn in this area



### Method

1. Set up the equipment as shown in the diagram opposite. Place the stand in FL.
2. Using a measuring cylinder, put exactly 20.0 ml of water in the copper vessel (calorimeter).
3. Attach this to the plastic head which is attached to the stand.
4. Weigh out your sample of food (use the same weight for each sample) and attach it to the mounted needle.
5. Take the original temperature of the water and note this down.
6. Place microburner in E6 (away from the calorimeter) & light the burner.
7. Place the food sample in the microburner flame to ignite.
8. Once the sample is lit place it under the calorimeter.
9. Continue to heat the water until all the sample is burnt.
10. Measure the final temperature, noting this down.
11. Calculate the overall temperature rise.  
(final temp. - original temp. = temp. rise)
12. **Then allow the calorimeter to cool down before you dismantle and wash up your apparatus!**

### Question

Can you list jobs your body needs the energy for?