



The National
Orthodox School
Shmaisani

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Subject: Science/ Biology

Name:

Study sheet : Energy in food

Date:

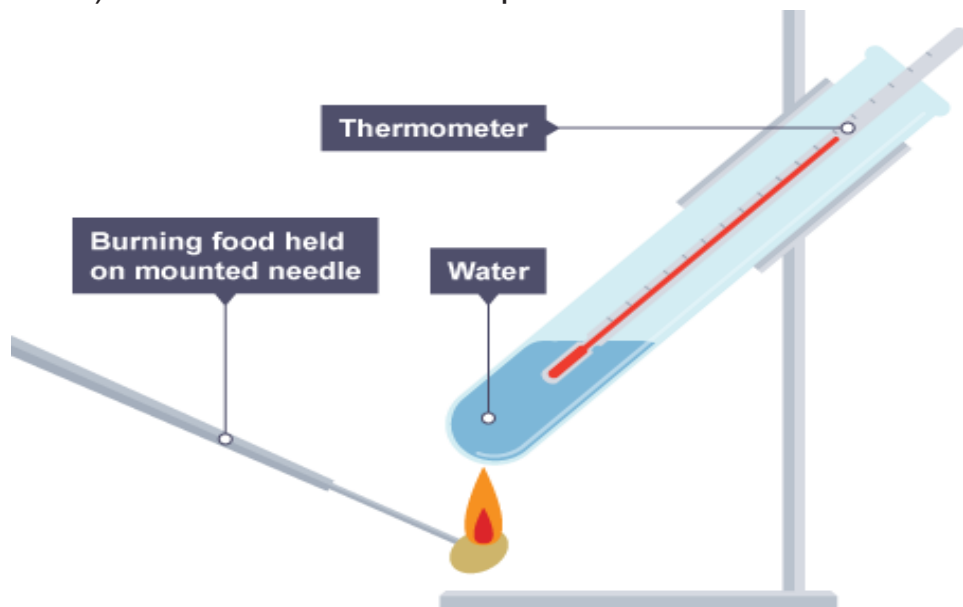
Grade-Section: 7CS- all sections

Objective : Understand how to measure the energy in food .

Food provides energy and nutrients. Components of the diet have different sources and functions.

The energy content in a food sample can be measured using simple calorimetry as shown below .

When food is burned the chemical energy inside it is released as (heat) which will raise the temperature of water.



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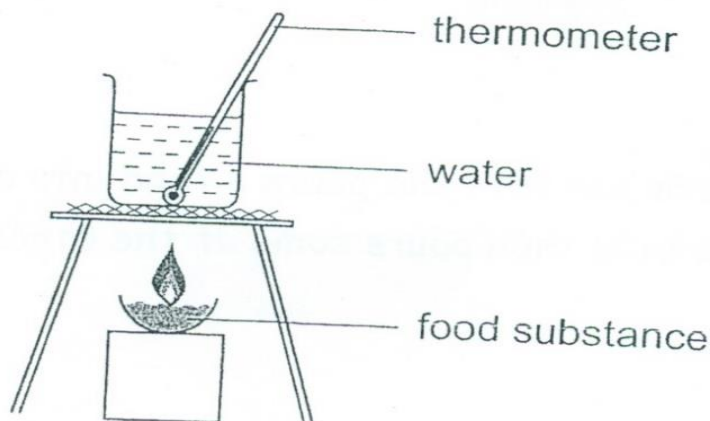
To carry out this experiment, you need to:

1. pour cold water into a boiling tube
2. record the starting temperature of the water
3. record the mass of the food sample
4. heat the food until it catches fire
5. heat the water using the flame from the burning food
6. record the final temperature of the water

Example :

A girl wants to compare the energy content of dry bread and a peanut.

The energy content of foods can be compared using the apparatus shown in the diagram .



a. list the controlled variables and complete the table below:

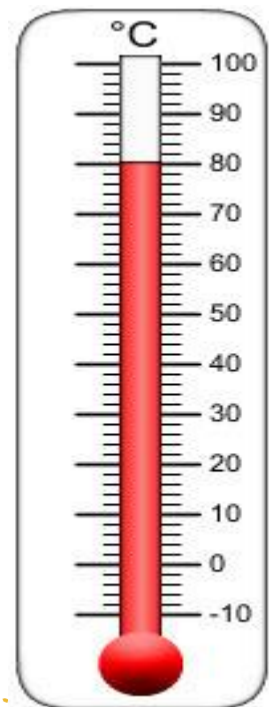
Controlled Variable	How will you keep this controlled? <i>Stating the values and the equipment that you will be using</i>	How could it affect your results if not controlled?
Mass of food	Using a balance	This will affect the time needed to burn the food
Initial temperature	Using a thermometer	This will affect the change in temperature
Amount of water	Using a measuring cylinder	This will affect the final temperature

b. The thermometer shows the temperature of the water after the girl had burned 1 gram of peanut (final temperature)

- Write down the temperature shown by the thermometer **80 ° c**
- Before the girl burned the peanut the temperature of the water was 18°C, Calculate the rise in temperature

(temperature change)

..... **80 ° c - 18 ° c = 62 ° c**



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1 gram of dry bread raised the temperature of the water by 40 c.

- State which food ,bread or peanut, contains the highest amount of energy

Explain your answer using the results from the girls experiments .

Food ___ peanut _____

Explanation the change in temperature when the peanut was burned is greater than the change in temperature when the bread was burned .

- The girl thought that her results might not be very reliable.

Suggest one thing she could do to improve her investigation .

..... she has to repeat the investigation