

Fuel your body



Location

Ground floor, Food exhibition

In a nutshell

Watch flour burn to see how much energy is in our food! How much food does your body need? How many doughnuts is too many? Play the game to find out!

What to do

- 1) Find all the activities you do in a day. Don't forget that sleep is an activity too. Find all the food you eat in a day. Compare the energy you use to the energy consume.
- 2) Press the Load button to collect your fuel Press the Fire button to release the energy

Time Required

KS3 & KS4 4 – 5 minutes per student.

What's happening?

The food we eat contains energy. Our bodies release this energy through respiration using oxygen from the air we breathe a bit like burning a fuel. In this example we are showing the energy stored in flour being released. The chemical equation for respiration is; glucose + oxygen → carbon dioxide + water (+ energy), we write the energy in brackets as it is not a substance.

We need to eat enough food to provide us with the energy for all the things we want to do. When we eat more energy than we use our weight increases. When we eat less energy than we use we lose weight.

Curriculum links

Curriculum links	
KS3	<p>Science - Nutrition and digestion</p> <ul style="list-style-type: none"> - content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed - calculations of energy requirements in a healthy daily diet - the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases <p>Science - Cellular respiration</p> <ul style="list-style-type: none"> - aerobic and anaerobic respiration in living organisms, including the breakdown of organic molecules to enable all the other chemical processes necessary for life - a word summary for aerobic respiration <p>Science - Energy</p> <ul style="list-style-type: none"> - comparing energy values of different foods (from labels) (kJ) <p>Science - Energy changes and transfers</p> <ul style="list-style-type: none"> - other processes that involve energy transfer: changing motion, dropping an object, completing an electrical circuit, stretching a spring, metabolism of food, burning fuels <p>Cooking and nutrition</p> <ul style="list-style-type: none"> - understand and apply the principles of nutrition and health
KS4	<p>Science - Biology</p> <ul style="list-style-type: none"> - organic compounds are used as fuels in cellular respiration to allow the other chemical reactions necessary for life <p>Science - Cell metabolism</p> <ul style="list-style-type: none"> - describe cellular respiration as an exothermic reaction which is continuously occurring in all living cells - compare the processes of aerobic and anaerobic respiration <p>Food preparation and nutrition</p> <ul style="list-style-type: none"> - develop knowledge and understanding of the functional properties and chemical processes as well as the nutritional content of food and drinks - understand the relationship between diet, nutrition and health, including the physiological and psychological effects of poor diet and health

Relates to:

Workshops & Theme Days	Shows	Trails	Other exhibits
<ul style="list-style-type: none"> • Choose Health (KS3 lower) 	<ul style="list-style-type: none"> • How my body works (KS3) 		<ul style="list-style-type: none"> • World of food • Food energy • Digestive run • Body builder

