

Food for Thought

key message: food is the fuel of the human body,
it keeps us alive and gives us energy.



sese curriculum link:

Content Strand – Living Things
Strand Unit – Human Life

skill development:

Experimenting, observing,
recording, sorting and analysing.

integration opportunities:

SPHE: Myself – Taking care of my body
SESE: History – Life, society, work and
culture in the past: the Potato Famine
in Ireland

Food for Thought

Key Message: Food is the fuel of the human body, it keeps us alive and gives us energy.

Before you start

Today we are going to look at food as a fuel for the human body and how it provides us with energy.

- What do you need to put in a car to make it go?
- What does the petrol give to the car? *Energy*
- What makes a bicycle go? *Energy from cyclist*
- Where does the cyclist get energy from? *Food*
- Where do you get your energy from? *Food*
- Where does food come from? *Plants or animals*
- Where did they get their energy from originally? *The sun*
- How do you usually feel before and after a meal?
- What do sports people eat before an event to have a good store of energy? Lots of carbohydrates e.g. pasta
- How can we find out which foods give us the most energy?
- Why is it very important for some people to know what foods contain? *Diabetics, coeliacs, allergies*

The human body is like a big machine that is always working. Even when you are asleep you are breathing and your heart is beating. Food is the fuel which keeps all these things going. We also use large quantities of energy from food to keep warm. If you eat more food than your body needs then you store it as fat.

Background

Yeast is a microbe (a tiny living organism which is invisible to the naked eye, but visible under a microscope) that needs food and heat to live, like all living things. The yeast feeds on the chemical energy stored in the sugar and produces the gas carbon dioxide which inflates the balloon.

Foods can be divided into three basic groups: fats, carbohydrates and protein. Foods rich in carbohydrates are our main source of energy. Sugar and starch are carbohydrates. Starch is found in plants and also in other things, e.g. some paper. Pasta, cereals and bread also contain starch.

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How can we see the energy of yeast?

You will need

Dried yeast	Sugar	Jug
Glass bottle	Balloon	Bowl

Steps

1. Discuss the function of yeast in bread-making; it does nothing when it is dry and cold, but when it is warm and wet it feeds off the sugar and produces the gas carbon dioxide. You can see these bubbles as little holes in bread.
2. Mix 2 teaspoons of yeast with 2 tablespoons of warm water in the jug.
3. Stir in a teaspoon of sugar.
4. Pour this yeast mixture into a glass bottle and stretch the balloon over the neck of the bottle.
5. Stand the bottle in a bowl of warm water.
6. Watch what happens the balloon. *It inflates!* What does this tell us about yeast? And about bread?



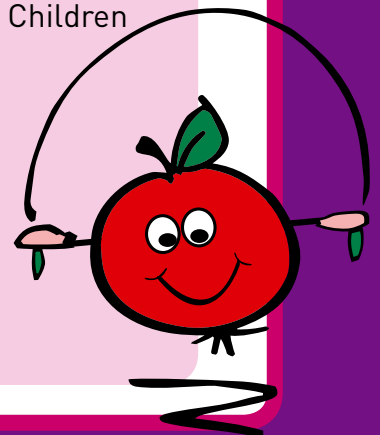
How can we identify starch in food?

You will need

Tincture of iodine (available from chemists) - for teachers' use only
Small dropper bottles (available from chemists)
Various samples of food, e.g. bread, sugar, pasta, rice, apple, potato, piece of cheese, orange

Steps

1. Prepare the iodine solution for use by the children. Dilute the tincture of iodine with water in the ratio of approximately 10:1 water:iodine. If possible provide one dropper bottle per four children. NOTE: Children should not be given undiluted iodine
2. Scientists know that iodine turns dark blue when it meets starch. Starch contains a good deal of energy and we are going to test to see which foods contain starch.
3. Add a few drops of the iodine solution to each of the food items and observe the change of colour (if any). Record the results using the recording sheet.



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Safety

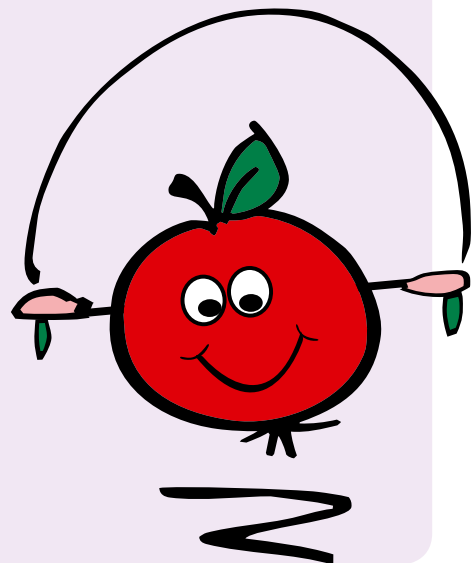


Care with iodine – close adult supervision; do not get into mouth; keep away from clothes, iodine stains.

Store the tincture of iodine away from the classroom. Wash hands after activity.

Discussion

- How can we see the energy of yeast for ourselves? What questions would we like answered by the experiment? What did you think would happen? What did happen?
- Which items caused the iodine to change colour? Are these items similar in any way? What have we learned about these items of food?
- The children could design a healthy balanced snack. Design and make a nutritious sandwich for lunch.
- Look at different food packages e.g. cereals, pasta and compare the amounts of energy in them (could be suitable for a group or individual project).
- What unit is the energy measured in? *kilocalories or kilojoules*
- The unit 'calorie' has been largely replaced by the 'joule' in many areas of science but 'calorie' is still often used in relation to food. 1 calorie and 1 joule are so small that energy in food is usually measured in kilocalories.



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Did you know?

The average person walks the equivalent of twice around the world in a lifetime – quite a lot of food is needed to provide that amount of energy!

Humans and animals eat other things (plants or animals) for food, but plants make their own food.

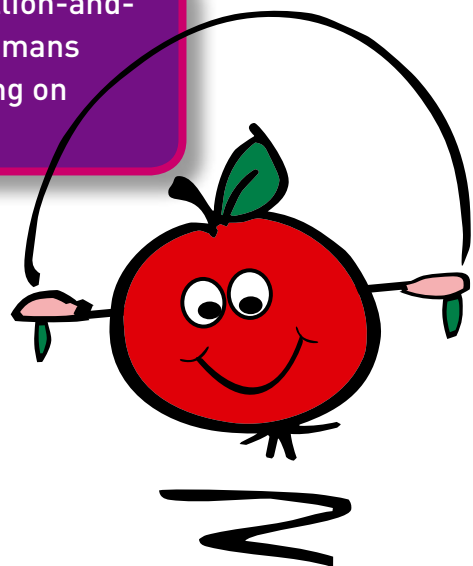
Sugar cane is grown in Brazil to make fuel.

During the Potato Famine in Ireland in the 1840s many people lost their main source of energy (the potato) and died as a result.

Some nutritionists say that junk food affects mental health and behaviour and that food affects the structure and function of the brain, i.e. “We are what we eat”.

The Blue Whale needs a million-and-a-half calorie diet a day! Humans need about 2,000 – depending on their age, lifestyle, etc.

Flies taste their food with their feet! That is why they walk all over food before you eat it. Should you keep food covered from flies?



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recording sheet - photocopy and use

Food:	Did the colour of the iodine change?	Does it contain starch? Yes or no?
Bread		
Sugar		
Pasta		
Rice		
Apple		
Potato		
Cheese		
Orange		

