Lesson 5: Processed food

Children will learn to: recognize the differences between natural and processed food; identify processed food that is good and bad for you; understand and sequence stages involved in processing food
Main outcome: Children design a flow chart to show how food is processed
Cognitive skills: predicting, matching, deducing, sequencing, applying knowledge, deciding, reasoning
Main language: *It's / They're ... It has ... / makes you ... What have you got? I've got ... ... is / are taken / added / collected / put ... First, next, then, after that, finally ... What happens first, next ...?*
Main vocabulary: *processed, natural, junk, fast, organic,* names of food, *refrigerated, tinned, frozen, dried, convenient, safe, vitamin, mineral, home, factory, restaurant, good, bad, sugar, saccharin, aspartame, sodium, salt, trans fat, saturated fat, risk, overweight, obesity, disease, additives, cow, dairy farm, milk, machine, cream, pasteurized, homogenized, cartons, tetrapak, shelves, shopper*
Materials: Worksheet 1: The processed food quiz (copy for each child); Worksheet 2: How milk is processed (copy for each child); examples of processed food or processed food packages (optional)

Revision activity

- Ask questions from the taste buds question circuit, e.g. *Where are your taste buds? / How many taste buds do you have?* and listen to the children's response.

- Play a game with the whole class. Say the name of a food and explain that children should respond by identifying the taste, e.g. *Chocolate! It's sweet! / Crisps! They're salty!*

Introduction and setting objectives

- Ask the children *What's the difference between having an apple or a banana as a snack and having chocolate or crisps as a snack? Is there a difference in the type of food?* and listen to the children's response. Elicit or explain that apples and bananas are examples of fresh, natural food and chocolate and crisps are examples of processed food.

- Say *In this lesson we're going to do a quiz in order to learn about processed food and we're going to learn about how food is processed. We're also going to design a flow chart to show how food is processed for our e-zines (or magazines).* Explain that a 'flow chart' is a kind of diagram but don't go into detail yet.

Suggested lesson procedure

Activity 1

- Explain to the children that they are going to do a quiz in order to learn about processed food. Divide the class into two teams. Get the children to choose a name for their team related to the project theme e.g. 'The proteins' / 'The vitamins'.

- Explain that you are going to ask questions in the quiz (from Worksheet 1) and give three options for each answer. Children in each team take turns to say which of the options they think are correct and explain that there may be more than one. If children identify all the correct options in answer to each question, they score two points for their team; if they identify at least one correct option, they score one point for their team. If you like, you can deduct points from the teams if children call out when it isn't their turn.

- Demonstrate the quiz by asking the first question as an example, e.g. *What is processed food? a. Fresh, natural food. b. Food which is altered in some way. c. Food which is refrigerated, frozen, dried or tinned.* Explain that *altered* means changed in some way, e.g. by adding something to food or by cooking it. Elicit or clarify the meaning of *refrigerated, frozen, dried* and *tinned* either by explaining, e.g. *You keep milk in the fridge so it's refrigerated and stays cold and fresh. / Ice cream is frozen.* or by showing children examples of processed food or processed food packages if you have these available. Invite children from each team to say which answer(s) they think are correct (b and c) and demonstrate awarding points accordingly.

- Do the quiz. Read the questions and options on Worksheet 1 and children in each team take turns to

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identify the correct answers and score points for their team. As children answer, use the key and notes below to explain and clarify as necessary. Keep a score of the points on the board. At the end, the team with the most points wins.

- Give a copy of Worksheet 1 to each child.
- Children work individually, read the questions and tick the correct answers in the quiz.
- Check the answers. At the end ask the children to tell you the answers they think are most interesting and/or surprising.

Key:

1. b, c; 2. a, b; 3. a; 4. b; 5. c; 6. a, b, c; 7. a, c;

8. a, b, c; 9. b, c; 10. a, b; 11. a, b, c; 12. a, b, c

- Ask the children if they eat a lot of processed food and whether they think they should eat less and listen to their response. Make the point that it's important not to eat too much of certain types of processed food such as crisps, sweets and hamburgers in order to stay healthy and that it's worth looking at food packages to see the ingredients and what has been added to the food before buying it.

Notes:

1. Processed food is a term which refers to food which is changed in some way.

2. Although cheese and bread come from natural products they are both processed and have other ingredients added to them.

3. In some cases, processed food preserves minerals and vitamins, such as in orange juice and frozen vegetables.

4. Processed food refers to food that is altered or changed in some way, for example, by adding chemicals or other substances to food to keep it fresh for a long time.

5. Food such as cheese, bread, orange juice and frozen vegetables are good for you but other processed food such as crisps and chocolate isn't.

6. Saccharin and aspartame are even sweeter than sugar; sodium is a mineral most commonly found in salt - too much is bad for you. Saturated fats raise cholesterol levels and trans fats give processed food a longer shelf life - neither is good for you.

7. Junk food is food that may taste good but is high in calories, fats, salt or sugar and has little nutritional value. Fast food is food that is convenient and can be prepared quickly and is often similar to junk food. Organic food is food which is produced in a natural way without using chemicals or additives.

8. Although there is no need to be alarmist, it is worth children being aware of the risks. Attention deficit problems means difficulty concentrating.

9. Hamburgers are high in fat and salt. Processing milk kills bacteria and makes it safe to drink. Processing orange juice preserves the vitamin C the fruit contains.

10. Chips and doughnuts are high in fat - chips have added salt and doughnuts have added sugar. Frozen peas preserve the minerals and vitamins they contain.

11. The danger is that if you eat too much processed food you get used to having high levels of sugar and salt in your diet which aren't good for you and that you start to enjoy the flavour of natural food less.

12. The reason it lasts longer is due to chemicals or preservatives added to extend the food's shelf life.

Activity 2

- Play a game with the whole class. Go round the class secretly assigning and whispering to individual children the name of either a natural food e.g. potato or a processed food e.g. crisps. Make it clear that the children must keep the word you assign them a secret. (See below for examples of food you could use.)
- Explain that some of the children have the name of natural foods and other children have the name of processed foods. The aim of the game is for children to walk round the class asking questions until they find their partner, in other words the child who has the natural or processed version of their food.
- Demonstrate the game with two children at the front of the class, e.g. *T: My food is potato. What have you got? P1: I've got chocolate. T: So we're not partners. What have you got? (asking the second child) P2: I've got crisps. T: Great! Crisps are processed from potatoes. So we're partners!*
- Children play the game. As soon as they find their partner ask them to sit down and try and think of other examples of pairs of natural and processed foods. If you don't want the children to walk around, they can play the game in groups and remain seated instead.

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• At the end, get children to name all the pairs of natural and processed foods used in the game. Examples of pairs of foods you can use in the game are as follows: *potato / crisps; strawberry / strawberry jam; wheat / bread; tomato / tomato ketchup; egg / mayonnaise; lemon / lemonade; orange / orange juice; banana / banana ice cream; peanut / peanut butter; grape / raisin.*

Activity 3

• Ask the children *Is milk a processed food? (Yes) Is milk a processed food that is good for you or bad for you? (It's good for you) Why is milk good for you? (It's got calcium and vitamins) Why is milk processed? (To kill bacteria and make it safe to drink).*

• Say *Let's find out how milk is processed.* Give a copy of Worksheet 2 to each child.

• Read the sentences 1- 8 in turn. Children listen and identify the pictures. Check understanding and clarify meaning of any unfamiliar vocabulary, e.g. *factory*, *lorry*, *storage tank*, *shopper* as you do this. Explain that *pasteurization* is a process in which the milk is heated to high levels and then cooled very quickly. This kills bacteria which may cause disease and ensures that the milk stays fresh for longer. Explain that *homogenization* is a process which breaks down the fat and ensures that the cream does not separate from the milk. Explain that a *tetra pak* is a special kind of carton that allows milk (and other liquids) to be stored at room temperature for up to a year.

• Ask the children to work individually, read the sentences, match them to the pictures and write the numbers. Draw their attention to the example.

• Children compare their answers in pairs.

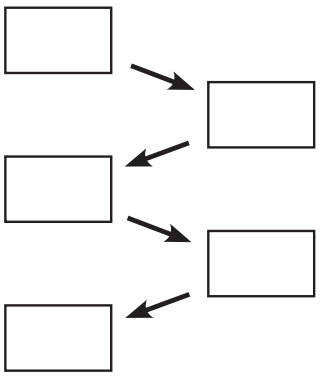
• Check the answers by asking individual children to take turns to read the sentences and identify the pictures.

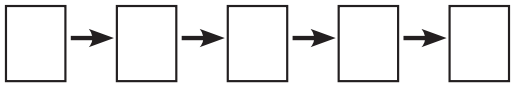
Key:

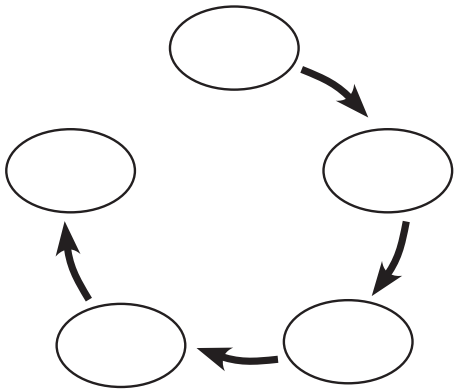
1. f; 2. c; 3. e; 4. h; 5. b; 6. g; 7. a; 8. d

Activity 4

• Say *Let's make a flow chart to show how milk is processed.* Draw a few possible examples of how the flow chart might work on the board. Explain that flow charts are a type of graphic organiser and that they are very useful if you wish to describe a process or show a sequence of events.







• Divide the class into pairs. Children design and draw a flow chart to show how milk is processed. Depending on time and level, children can *either* draw pictures *or* copy the sentences to show the sequence of how milk is processed, *or* do both. Alternatively, you can use the activity simply to introduce the concept of using a flow chart to describe a process or sequence before children design and write their own in the next activity.

Activity 5

• Divide the class into their project groups, and within each group, into pairs. Explain that you want the pairs to research and design a flow chart to show how another food is processed for their e-zine (or magazine). If the children haven't made a flow chart to show how milk is processed in the previous activity they can *either* design a flow chart to show how milk is processed *or* choose another processed food, e.g. chocolate, crisps, orange juice. Ask children to decide on the processed food each pair will do in their groups.

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- Ask children to research and check information about the processed food they choose using computers and the internet. Explain that they should then design a flow chart, draw pictures and write sentences to describe each stage of the process.

- Give out pieces of paper (one to each child). Children work with their partner and research, design and complete a flow chart for how the food they choose is processed. Alternatively they can use computers to do this. Monitor and be ready to help as necessary. The processed food flow charts can be completed either as homework or in a follow-up lesson as necessary.

Learning review

- Briefly review learning by asking the children *What have we done today? What have you learnt? How did the quiz help you learn about processed food? How do flow charts help you to describe a process? What did you enjoy most / find most interesting / difficult?*

Optional extra

Ask the children to use their completed processed food quiz sheets (Worksheet 1) to write a description of processed food. Give an example and elicit the description orally from the children first before they write, e.g. *Processed food is food which is altered in some way or food which is refrigerated, frozen, tinned or canned. Bread and cheese are two examples of processed food. People eat frozen food because it's ...*, etc.

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Read and tick (✓) the correct answers (there may be more than one).

1. What is processed food?
a. Fresh, natural food. ☐
b. Food which is altered in some way. ☑
c. Food which is refrigerated, frozen, dried or tinned. ☑

2. Which of these foods are processed?
a. Cheese. ☐
b. Bread. ☐
c. Eggs. ☐

3. Why do people eat processed food?
a. It's convenient. ☐
b. It's safe. ☐
c. It preserves vitamins and minerals. ☐

4. Where is food processed?
a. In your home. ☐
b. In factories. ☐
c. In restaurants. ☐

5. What is the effect of processed food on your health?
a. It's good for you. ☐
b. It's bad for you. ☐
c. Some is good for you, some is bad for you. ☐

6. What is frequently added to some processed food?
a. Sugar, saccharin or aspartame. ☐
b. Sodium or salt. ☐
c. Trans or saturated fats. ☐

7. What is some processed food often called?
a. Junk food. ☐
b. Organic food. ☐
c. Fast food. ☐

8. What are the risks of eating a lot of processed food?
a. Overweight or obesity. ☐
b. Disease such as heart disease or diabetes. ☐
c. Attention deficit problems. ☐

9. Which of these processed foods are good for you?
a. Hamburgers. ☐
b. Milk. ☐
c. Orange juice. ☐

10. Which of these processed foods are bad for you?
a. Chips. ☐
b. Doughnuts. ☐
c. Frozen peas. ☐

11. What does eating a lot processed food do to your taste buds?
a. It makes you like sweet food. ☐
b. It makes you like salty food. ☐
c. It makes you like strong, unnatural flavours. ☐

12. How can you easily recognize processed food?
a. It comes in a sealed packet, box, tin, jar or carton. ☐
b. It has a list of ingredients and additives. ☐
c. It lasts for longer than natural or unprocessed food. ☐

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1. Read, match and number the pictures.

1 Cows on dairy farms are milked by machine two or three times a day.

2 The milk is piped into refrigerated storage tanks on the dairy farm.

3 The milk is collected by lorries and taken to the factory to be processed.

4 First the milk is separated into cream and milk with different levels of fat.

5 Next the milk is pasteurized and homogenized.

6 Then Vitamins A and D are added to the milk.

7 After that the milk is put into cartons or tetra paks

8 Finally the packaged milk is taken to the supermarkets for shoppers to buy.

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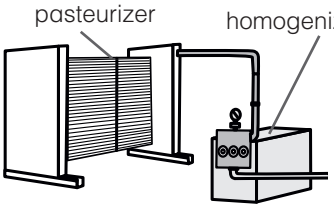
b 

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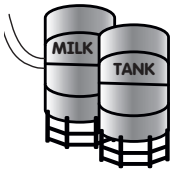
c 

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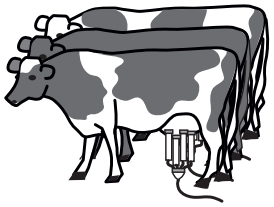
f 
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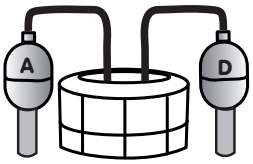
g 

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2. Design and draw a flow chart to show how milk is processed.