

6

How food works

Unit Objectives

- Describe food and drink and how it is prepared
- Read about the science of food
- Give detailed instructions
- Reply to an informal email about a favourite dish



On Track Video

1  Watch the video. Choose the best title.

- a The science of taste
- b How your taste buds work

2  Watch again. Are the sentences true or false? Correct the false sentences.

- 1 Our sense of smell is an essential part of tasting food.
- 2 The middle of your tongue tastes food more strongly.
- 3 Adults have around 20,000 taste buds.
- 4 Our sense of smell gets weaker in our 60s.

3 **YOUR TURN**  Discuss in pairs. Think of foods that have the tastes below. Which tastes do you enjoy? Which don't you like?

- sweet
- salty
- sour
- bitter

I enjoy salty food the most. I don't like bitter things, like dark chocolate.

4 **MEDIATION**  Your friends are doing a project on the science of taste. Tell them three facts from the video in your own language.

Adjectives: food and drink

i Vocabulary presentation

1 **6.01** Read and complete the facts with the adjectives in the boxes. Listen and check.

Fascinating food facts

creamy fizzy **hot** mouldy raw



Jalapeños are **hot**, but the Carolina Reaper chilli is 200 times stronger. It's the spiciest chilli in the world!



What happens if you mix ¹... lemonade with curry spices? This Japanese drink tastes exactly as you imagine!



Would you eat this cheese? In fact, it's usually safe to eat cheese like this – just cut off the ²... bit first!



Have you ever tried chicken sashimi? Yes, that's ³... chicken! You don't cook it! Don't try to make this at home, but it's served in Japanese restaurants.



Everyone loves the sweet taste and ⁴... texture of ice cream. But why? The sugar and fat in ice-cream increases our production of dopamine – a chemical that makes up happy.

bitter frozen greasy juicy ripe



95% of a cucumber is water – which makes them very ⁵... . Fancy a glass of cucumber juice?



About 25% of people are supertasters. They have more taste buds on their tongue. Food or drink with a strong taste, like coffee and olives, can taste extremely ⁶... to supertasters.



Have you ever tried ⁷... grapes? They're a fantastic snack. Just wash them and put them in the freezer. They taste sweeter too!



When mangoes are ⁸... their flesh is soft and bright orange. But in India it's common to eat them when they are green and hard – often with a little salt.



Food made with lots of oil or fat isn't good for us, but many of us enjoy ⁹... foods like burgers, chips, and pizzas. Why? One reason is that fat makes flavours stronger.

2 Which adjective in exercise 1 describes ... ?

- 1 food that is spicy
- 2 a liquid with small bubbles
- 3 food that is not cooked
- 4 food, e.g. bread or cheese, that isn't fresh
- 5 food that is kept at a very cold temperature
- 6 fruit and vegetables that are ready to eat
- 7 food with a lot of oil
- 8 a strong taste that isn't sweet
- 9 food that contains a lot of juice
- 10 food that has the taste or texture of cream

3 **YOUR TURN** Which of the foods in exercise 1 have you tried? Which would you like to try?

I've tried frozen grapes – they were sweet and delicious.

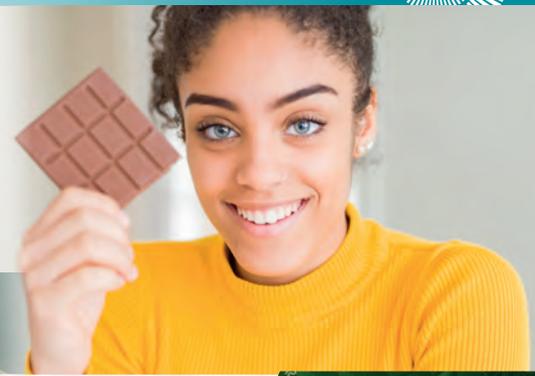
I'd like to try a Carolina Reaper chilli because I love spicy food.

i Vocabulary practice

An informative article

1 Read the text, ignoring the gaps. Which statement is true?

- a Microbes and bacteria can be dangerous, but also useful.
- b You must always try to avoid microbes and bacteria in food.



Magical microbes

We know that microbes are tiny organisms that exist all around us. But how do they affect the things we eat?

c Salmonella bacteria, for example, which is sometimes found in raw foods such as eggs and chicken, can make people very ill. Fortunately, the bacteria is killed if these foods are cooked correctly. However, millions of people become sick with salmonella every year and the infection can be serious.



salmonella bacteria

So does this mean all microbes are dangerous? ¹... Our stomachs contain trillions* of them. They are used by our bodies to process food, fight unsafe microbes and keep us healthy. What's more, many of the world's most delicious foods get their taste and texture from microbes.

Reading strategy

Recognize topic sentences

A topic sentence is a sentence that explains the main idea of a paragraph. It is usually the first or second sentence in a paragraph. The rest of the paragraph then gives more detail.

2  **6.02**  Read the Reading strategy. Then complete the article with the missing topic sentences a–f. There is one extra sentence. Listen and check.

- a For chocolate, the process starts with cocoa pods.
- b Fortunately, the vast majority of microbes are not only harmless, but also useful.
- ~~c We all know the dangers of microbes in our food.~~
- d Without microbes we wouldn't have many of the delicious foods we eat every day.
- e Other microbes might change the appearance and smell of foods, too.
- f For thousands of years, humans have used a process called fermentation to make food like bread.

²... This method is when microbes are used to change other substances. For instance, bread-making uses a microbe called yeast. The yeast reacts with the flour and produces carbon dioxide gas. This makes bread rise and gives it a special texture.

³... Each one contains 20 to 50 cacao beans. The taste of the raw beans is really bitter and nothing like chocolate. But if they are left in a warm, humid place, then bacteria and yeast in the air react with the cocoa pods. This reduces the bitter taste of the beans.

⁴... You know the holes in Swiss cheese? They're made by carbon dioxide from microbes, too. And the blue stuff in some cheese is mould – a type of microbe. It's similar to the mould you find on old, mouldy food. However, the mould in this cheese is safe and gives the cheese its special flavour. And if you think some cheeses smell like old trainers – well, you're right. The same bacteria is found on both!



cacao pods



*a trillion = a million million or 10^{12}

3 Answer the questions.

- 1 Why is salmonella in food usually not a problem?
- 2 How are microbes in your stomach helpful?
- 3 What makes bread rise?
- 4 Why do old trainers and some cheeses smell similar?

4 **YOUR TURN**  Imagine you could learn how to make any type of food. What would you choose? In pairs, discuss your choices. Which sounds the most interesting?

I'd like to learn how to make good bread.

 Guided mediation

Present simple passive

i Grammar animation

1 **6.03** Read and listen to Grammar in context. Why do we use carmine?

Grammar in context

Carmine is a natural food dye – it changes the colour of food. **It's used** by food manufacturers in everything from sweets to smoothies. But what **is carmine made** from? The answer is tiny insects, called cochineal. These insects **are mostly farmed** in Peru. Millions of cochineal insects **are collected** every year to make the dye. Sometimes on a list of ingredients, the word 'cochineal' **isn't included**. Instead, **it's written** as E120 or Natural Red 4.



Present simple of <i>be</i> + the past participle	
Affirmative	Carmine is used by food manufacturers. Millions of cochineal insects are collected every year (by farmers).
Negative	Sometimes, on a list of ingredients the word 'cochineal' isn't included . Cochineal insects aren't found in cold countries.
Questions	What is carmine made from? Where are cochineal insects farmed ?

Sentences can be active or passive.
Active: We **use** carmine in many different foods.
Passive: Carmine **is used** in many different foods.
We often use the passive if we don't know who does the action, or when it is obvious or not important.



STOP

If we want to say who or what does the action in a passive sentence, we use **by**.
*Carmine is used **by** food manufacturers.*

- 2** **9** Study the table. Choose the correct verb form.
- 1 Butter **is made** / **are made** from cream.
 - 2 Bananas **are grown** / **are grew** in over 150 countries.
 - 3 Sometimes a fast-food burger **contains** / **is contained** meat from hundreds of cows.
 - 4 Where **does food eat** / **is food eaten** at your school?
 - 5 15% of Indians **aren't eaten** / **don't eat** meat.
 - 6 Milk **isn't often use** / **isn't often used** in Asian cooking.
- 3** Complete the text with the present simple passive form of the verbs in brackets.

How salted crisps are made

- 1 First, each potato ... (check) for quality.
- 2 The potatoes ... (wash) and peeled to remove the skin. Potato skins usually ... (not use) for crisps so the skins ... (send) to make animal food.
- 3 Each potato ... (cut) into slices 1.8 mm thick and then washed again.
- 4 The slices ... (dry) in hot air and then fried in oil.
- 5 About 17 g of salt ... (add) for every 1 kg of crisps.
- 6 Nitrogen gas ... (use) to fill crisp bags because normal air makes crisps soft.



DID YOU KNOW?

The most popular flavour of crisps in the UK is cheese and onion.

- 4** Complete the questions with the correct passive form of the verbs in brackets.
- 1 Where ... your favourite food ... (make)?
 - 2 What foods ... (export) from your country?
 - 3 When ... you ... (allow) to eat at school?
 - 4 How much food ... (throw away) in your house?

5 YOUR TURN **2** In pairs, ask and answer the questions in exercise 4.

Where is your favourite food made?

I love Manchego cheese. I think it's made in

i Grammar practice

Preparing food

i Vocabulary presentation

1 **6.04** Match the verbs in the box with the photos. Listen and check.

bake ~~barbecue~~ boil freeze fry
grill heat up mix roast slice



barbecue



2 **Q** Work in pairs. Think of examples of food that ...

- 1 is often baked in an oven
- 2 you might roast in an oven
- 3 is delicious when it is barbecued
- 4 you usually boil before eating
- 5 you should always freeze
- 6 you can fry or grill
- 7 you often heat up in a microwave
- 8 you might slice thinly

3 **6.05** **E** Look at the pictures of these people. What do you think each person invented? Listen and check.

crisps the choc chip cookie the sandwich



John Montagu
(1718–1792)



George Crum
(1824–1914)



Ruth Wakefield
(1903–1977)

4 **6.05** Listen again. Choose the correct answers.

- 1 Why did the Earl of Sandwich invent his snack?
 - a It was easy to eat while doing something else.
 - b He wasn't always hungry at lunchtime.
 - c He didn't have time to stop working for lunch.
 - d He wanted people to spend more time at work.
- 2 What does Charly think about the invention of crisps?
 - a The original inventor was American.
 - b It happened before the invention of French fries.
 - c Someone probably invented the story of the chef and the customer.
 - d Someone probably invented crisps before 1853.
- 3 Which statement is true about choc chip cookies?
 - a A chocolate company thought of the idea first.
 - b The inventor wasn't paid any money for her recipe.
 - c They were invented by accident.
 - d The inventor used a special type of chocolate.

5 YOUR TURN **Q** Work in pairs. Think of a dish you know how to make. Tell your partner how to make the dish, but don't say the name. Can your partner guess the dish?

First, slice some potatoes and fry them. Then, mix some eggs with ...

Is it an omelette?

i Vocabulary practice

Past simple passive

i Grammar animation

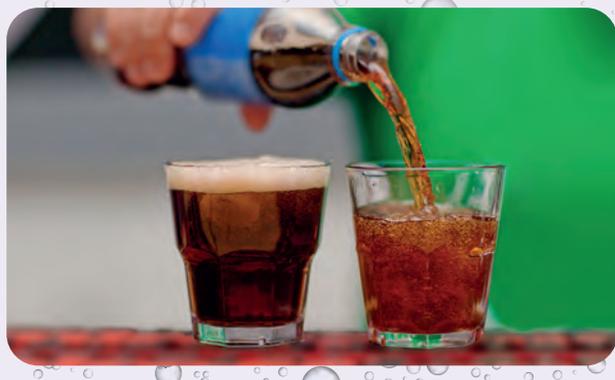
- 1 **6.06** Read and listen to Grammar in context. Which nationalities are mentioned?

Grammar in context

Question: How were fizzy drinks invented?



Some of the most famous fizzy drinks companies are American, but fizzy drinks **weren't invented** by an American. A British scientist discovered how to get carbon dioxide into water in 1767. In 1781, the first factories **were built** to make fizzy water – one company **was started** by a German called Johann Scheppe. Soon flavours **were added** to fizzy water. Coca-Cola **was invented** in 1885, but 7-Up **wasn't invented** until 1929!



Past simple of *be* (*was* or *were*) + the past participle

Positive	One company was started by a German called Johann Scheppe. In 1781, the first factories were built .
Negative	Fizzy drinks weren't invented by an American. 7-Up wasn't invented until 1929.
Questions	How were fizzy drinks invented ? When was Coca-Cola first sold in your country?



STOP

When we use adverbs with the passive, we usually put them before the past participle.
Many important foods, like bread, were probably invented accidentally.

- 2 **9** Study the table. Choose the correct verb form.
- Croissants **was** / **were** invented in Austria.
 - Where **did** / **was** the first microwave oven produced?
 - The potato **didn't** / **wasn't** become popular in Europe until the 18th century.
 - Popcorn **was first eaten** / **first was eaten** over 6,000 years ago.
 - Two thousand years ago, black pepper **used** / **was used** as money because it was so valuable.
 - Hot dogs **didn't** / **weren't** invented by an American.
- 3 Complete the story of the Cronut with the present simple or past simple passive form of the verbs.



The Cronut **was introduced** (introduce) in 2013, by Dominique Ansel at his bakery in New York. A Cronut is a mix of a croissant and a fried donut. Each one ¹... (fill) with fresh cream. The day before the bakery started selling them, a food reviewer ²... (invite) to try one. He loved it and his review ³... (read) by thousands of New Yorkers. Two days later there were long queues outside the bakery. Now, Cronuts ⁴... (produce) by different bakeries all over the world but other bakeries ⁵... (not allow) to use that name – Dominique trademarked the word 'Cronut' about a week after the first ones ⁶... (sell).



- 4 Complete the questions with the past simple passive form of the verbs in the box.

build direct give make write

Where **were** your clothes **made** ?

- Who ... your favourite book ... by?
- Who ... your favourite film ... by?
- What presents ... you ... on your last birthday?
- When ... your house or flat ... ?

- 5 **YOUR TURN** **9** Work in pairs. Ask and answer the questions from exercise 4.

Where were your clothes made?

I think they were made in China.

i Grammar practice

Listening: A conversation

1 How do you normally prepare these foods?

a toasted cheese sandwich cookies a piece of salmon

2  6.07 Listen and match these unusual ways of cooking with the foods in exercise 1.



3  6.07 Listen again. Complete each sentence.

Arlo is reading an article about unusual ways of *cooking food*.

- 1 The method for cooking a toasted cheese sandwich uses an iron and two
- 2 To bake cookies, the temperature needs to be
- 3 The article suggests adding ... to the salmon.
- 4 Mollie doesn't think their dad will let them bake cookies in
- 5 The first solar oven appeared in the late
- 6 An advantage of solar ovens is that the energy is

Listening strategy

Reference to avoid repetition

When you listen, remember that pronouns (*it, they, mine, everyone, etc.*) and adverbs (*here, there, then*) can refer to a previously mentioned situation, person, thing or idea.

4  6.07  Read the Listening strategy. Then listen again, paying attention to these sentences. What do the **highlighted** words refer to?

- 1 Well, you can make **one** using an iron.
- 2 I guess it's like an oven in **there**.
- 3 Then you wrap **everything** really tightly in three layers of aluminium foil.
- 4 Whenever I use **ours**, I always burn myself!
- 5 **It** isn't new.
- 6 **they**'ve opened up several restaurants for tourists.

 Listening extension

Speaking: Give detailed instructions

1  Watch part 1 of Lily and Harry's vlog and choose the correct answer.

- The vlog is about:
- a outdoor survival
 - b recipes you can make outside
 - c making campfires



2  Watch part 2 of the vlog and answer the questions.

- 1 What does Lily call the dish she cooks?
- 2 What ingredients are needed to make the dish?
- 3 What does Lily forget to do to the frying pan? Why is it a useful tip?



3  Put the instructions a-i in the correct order. Then watch part 2 of the video again and check.

- a Make a hole in the middle of the bread.
- b Rest the pan on a grill or some logs over the fire.
- c Wait a minute or so until the egg is ready.
- d Heat some water on the fire to do the washing-up.
- e Fry the bread on one side until it's crispy and toasted.
- f Butter the bread or heat up some oil in the pan.
- g Check that there aren't lots of flames.
- h Crack the egg into the hole.
- i Put some washing-up liquid on the bottom of the frying pan.

Speaking strategy

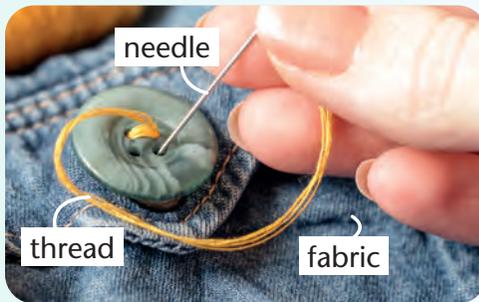
Give detailed instructions

- Before you begin (cooking), make sure that ...
- The first thing you should do is (put ...)
- The best way to (support your frying pan) is to ...
- When you've done that, (get a small cup).
- By now, (the bread should be toasted).
- While you're (warming up your pan), you can ...
- The next thing is to (crack an egg).
- The last step is to (heat some water).

4 Read the Speaking strategy. Find and underline phrases from the strategy in the instructions below.

How to

sew a button onto a shirt



- A Then push the needle and thread up, through the fabric and through the first hole in the button.
- B The first thing you should do is put the thread through the hole in the needle. The next thing is to tie a knot at the end of the thread.
- C By now, your button is attached to the fabric. Continue until the button is secure.
- D When you've done that, decide where to put the button. The best way to put it in the right place is to line it up with the buttonhole.
- E The last step is to push the needle through the material, tie a knot, and cut off the thread.
- F Before you begin, make sure you have a button, a pair of scissors, some thread and a needle.
- G The next thing is to push the needle through the second hole in the button to attach it.

5 **6.08** Put the instructions A–G from exercise 4 in the correct order. Then listen and check.

6 Read Global skills. You're going to give instructions about one of the skills below. In pairs, choose a skill to explain.

GLOBAL SKILLS

Learn simple life skills

It's important to learn simple life skills such as cooking and sewing. For example, learning to cook will help you to eat healthily, save money and learn other skills like cleaning. Cooking a variety of dishes helps you to learn about different cultures and customs.

How to ...

- make the perfect sandwich
- stay organized with your schoolwork
- stay safe online
- fix a slow phone
- take the perfect selfie



7 In pairs, make notes about detailed instructions on how to perform the life skill you chose. Think about:

- What are the most important stages?
- Do you need photos to explain anything?

LET'S SPEAK!

8 Work in pairs. Give detailed instructions to the class on how to do your life skill. Use your notes from exercise 7. Follow this model.

Today we're teaching everyone how to ...

Yes, so before you begin, make sure ...

Then the first thing you should do is ...

The best way to ... is to ...

When you've done that, ...

The next thing is to ...

The last step is to ...

Real Talk: Active Learning Kit

An informal email

- 1  Read part of an email that Conor sent to a Portuguese friend. Can you summarize his request in one sentence?

Hi Beatriz! Can you help me? We're having an international food evening at school – everyone cooks a dish from a different country and we share them. What's your favourite Portuguese dish? How easy is it to make? Have you got a recipe? Do you know anything about its history, too?

- 2 Read Beatriz's reply. Does she answer all of Conor's questions?



Hi Conor,

Nice to hear from you! I love pastéis de nata (custard tarts)! They're delicious little cakes – with crispy pastry and sweet creamy custard. They were invented in the 18th century at a monastery near Lisbon. The monks used the white part of eggs to wash clothes, so they had **loads** of yellow yolks! They used them to make custard tarts. Nowadays you find these tarts everywhere but imo the best ones are made in the bakery next to the original monastery. They sell 20,000 every day!

Here's the **link** to my dad's favourite recipe. He's into cooking. It's **pretty** easy but he suggests buying the pastry. You cut the pastry into circles and put them in a baking tin. For the custard, mix egg yolks with sugar, vanilla flavouring and slowly add milk. Then heat the mixture until it boils. The last step is to fill the pastry circles with the custard and bake them in the oven for 20 mins **or so**. The top should be golden yellow and brown. OK, I have to go, so that's all for now. Let me know how it goes!

Beatriz xx

- 3 Read Beatriz's email again. Answer the questions.

- 1 Where were pastéis de nata first made?
- 2 Who were they invented by?
- 3 Where are Beatriz's favourite tarts sold?
- 4 Which ingredients are mentioned in the email?
- 5 How will Conor know when they are cooked?

Writing strategy



Informal emails

In replies to informal emails:

- start with a greeting: *Hi Conor, Hello Conor*
- use a short phrase to respond to the previous email: *Nice to hear from you! Thanks for your email!*
- use short forms, e.g. *I'm*
- use informal expressions and abbreviations: *He's into (cooking), imo (= in my opinion)*
- finish the email with phrases like: *Keep in touch! Say hi to your parents!*
- don't forget to answer the questions you were asked.

- 4  Read the Writing strategy. Which phrases from the strategy can you find in Beatriz's email?

- 5 Answer the questions.

- 1 What are the five short forms in in Beatriz's email?
- 2 Which **highlighted** informal words and expressions in the text mean ... ?
a approximately b quite c a lot
- 3 What informal phrase does Beatriz in the last paragraph of her email?

LET'S WRITE! Language practice

- 6 Think and plan.

Imagine you received Conor's email.

- Decide on a dish you're going to write about.
- Find out about the history of the dish.
- Find a simple recipe.

- 7  Write your reply to Connor's email.

- Use Beatriz's email as a model.
- Use the tips in the Writing strategy.
- Use the present passive or past simple passive forms where appropriate.
- Use vocabulary to describe and prepare food.

- 8 Check your writing.

- present simple passive and past simple passive
- adjectives to describe food; verbs for preparing food



The discovery of DNA



Before you watch

1 🎧 Answer the questions.

- 1 Who are the most famous scientists in your country's history?
- 2 What did they do?
- 3 What do you know about DNA (deoxyribonucleic acid)?



While you watch

2 🎮 Choose the correct answers.

- 1 What shape is DNA?
a a double helix b a triangle c a circle
- 2 When did scientists discover the structure of DNA?
a in the 1990s b in the 1970s c in the 1950s
- 3 Which Nobel prize did the scientists win?
a physics b chemistry c medicine

3 🎮 Watch again. Choose the correct words.

- 1 **X-rays** / **Genes** are the instructions which exist in every cell of every living thing.
- 2 A gene is a small part of a **molecule** / **chromosome** called DNA.
- 3 Different combinations of **base pairs** / **genes** make up the instructions for every living thing.
- 4 The long molecules of DNA are organized into **chromosomes** / **diseases**.
- 5 A complete set of chromosomes is a **genome** / **gene**.
- 6 Doctors will use **guanine cytosine** / **the human genome** to help prevent and cure diseases in the future.

4 🎮 Match the information with the numbers or years. Watch again and check your answers.

- 1 the number of chromosomes humans have
 - 2 the number of base pairs in a human gene
 - 3 the number of scientists who wrote the code for the human genome
 - 4 the number of years it took to write the code for the human genome
 - 5 the year that Rosalind Franklin died
 - 6 the year that Crick, Watson and Wilkins won the Nobel prize
- a over 10
b more than 5,000
c 1962
d 46
e about 3 billion
f 1958

After you watch

5 **MEDIATION** 📡 Go online and find out about how DNA is being used today. Choose three different uses and write a sentence about each of them.

6 👥 In groups, share your sentences. What do you think is the most important use of DNA?

i Video extension