

Before you watch

- 1 **SPEAKING** Work in pairs. Answer the questions.
- 1 When was the last time you cut yourself?
 - 2 What did you do?
 - 3 Where is the nearest hospital to you? Can you describe it?

Comprehension check

- 2 **▶ Watch the DVD clip. Choose the correct answers.**
- 1 What are germs?
 - a things you use during an operation
 - b drugs
 - c living things that can make people ill
 - 2 Where was Joseph Lister born?
 - a Glasgow
 - b near London
 - c Edinburgh
 - 3 Which of these sentences is false about surgery today?
 - a Surgeons' hands and clothes are clean.
 - b Surgeons cover their mouths.
 - c Hospital staff can't kill germs in the operating theatre.
- 3 **▶ Watch again. Choose the correct words.**
- 1 In the past, surgeons **did** / **didn't** wash their hands between operations.
 - 2 Before the 19th century, hospitals were **dirty** / **clean**.
 - 3 Joseph Lister studied medicine in **London** / **Glasgow**.
 - 4 Doctors didn't use **drugs** / **germs** to help people sleep during an operation.
 - 5 Patients didn't often **live** / **die** after an operation.
 - 6 Lister found the answer to the problem in **a book** / **the countryside**.
 - 7 Before he used antiseptics, about **15%** / **45%** of Lister's patients died during an operation.
- 4 **▶ Watch again. Complete the sentences with the words below.**
 cows diseases germs instruments lives water
- 1 Germs often carry _____ that can make people ill.
 - 2 Antiseptics can kill _____ and make surgery safer.
 - 3 Doctors didn't clean their _____ between operations.
 - 4 Farmers used carbolic acid to treat _____.
 - 5 Lister created the first antiseptic with carbolic acid and _____.
 - 6 Nowadays, antiseptics save lots of _____.

Round up

- 5 **SPEAKING** Work in groups. Answer the question.
 Would you like to be a doctor or nurse? Why? / Why not?

Vocabulary

- 6 **RECYCLE** Complete the text with the words and phrases below. There is one extra word / phrase.
after finally first of all next to start off

How to prepare for an operation

1 _____ with, surgeons should wash their hands and arms using special antiseptic liquid for about five minutes. 2 _____ that, they should use a brush and the liquid to clean their fingers and fingernails for about three minutes. 3 _____, they should use water to clean the antiseptic liquid away. After that, they should take a clean towel and dry their arms, hands and fingers. 4 _____, they should put on the special clean clothes they need to wear for the operation. They mustn't touch anything that is not clean.

- 7 Match the words below with the pictures from the DVD clip.

face mask operating theatre operation patient surgeon



1 _____



2 _____



3 _____



4 _____



5 _____

Extension

- 8 Work in groups. Find out about another important invention that has saved lives. Write a presentation about the invention. Think about the following:

- what the problem was
- who the inventor was
- the story of how they got the idea
- how it changed people's lives

- 9 Give your presentation. Use the time expressions.

Time expressions

Many years ago, ...
Later, ...
At that moment, ...
Afterwards, ...
In the end, ...

DVD clip summary

This DVD clip is about the inventor of modern antiseptic surgery, Joseph Lister.

Background

The use of antiseptics to clean wounds and kill germs dates back many hundreds of years, but it wasn't until scientists understood what germs were that the benefits of antiseptics have really been felt. Alcohol was one of the first antiseptics used. In medieval times, surgeons began to use wine to clean wounds, and in 1833, the religious leader Joseph Smith suggested that 'strong drinks' were better for washing the body than for drinking. But it was the surgeon, Joseph Lister, who was the first to really understand the benefits of using antiseptics during surgery.

Joseph Lister first became interested in this after reading a study on microorganisms and germs by the French chemist, Louis Pasteur. Pasteur suggested these could be killed by filtering, heat and chemicals. Lister started testing whether a new chemical – carbolic acid – could be used to kill germs and treat patients' wounds and sterilise surgical equipment. The results of his experiments were very clear. Using carbolic acid on wounds and on his equipment significantly reduced rates of infection in patients, and soon all his surgeons were regularly cleaning their clothes, hands and equipment with this new chemical. Lister's contribution to medical science is undoubtedly one of the most important. His findings have made surgery significantly safer and have saved thousands of lives. Carbolic acid, also known as 'phenol', is still used in some medicines today.

Before you watch

Exercise 1

- Read the questions with the class and elicit answers from individual students. Encourage the students to personalise their answers and use their suggestions to start a class discussion.
- **Answers:** Students' own answers

Comprehension check

Exercise 2

- **Pre-watching:** Go through the questions with the students.
-  Play the whole DVD clip. The students choose the correct answers. Check their answers.
- **Answers:** 1 c 2 b 3 c

Exercise 3

- **Pre-watching:** Ask the students to try and choose the correct answers before they watch the DVD again.
- **Weaker classes:** Check that students understand the meaning of the words. Play the DVD clip and pause after each answer.
-  Play the DVD clip to check the answers.
- **Answers:** 1 didn't 2 dirty 3 London 4 drugs 5 live 6 the countryside 7 45%

Exercise 4

- **Pre-watching:** Ask the students to try and complete the sentences before they watch the DVD again.
- **Weaker classes:** Check that students understand the meaning of the words. Play the DVD clip and pause after each answer.
-  Play the DVD clip to check the answers.
- **Answers:** 1 diseases 2 germs 3 instruments 4 cows 5 water 6 lives

Round up

Exercise 5

- Put the students in groups. Give them a few minutes to discuss the question.
- **Answers:** Students' own answers

Vocabulary

Exercise 6

- Ask the students to read through the text first, then complete the sentences. With a **weaker class**, you could go through the sequencing phrases and elicit how they are used.
- **Answers:** 1 To start off 2 After 3 Next 4 Finally

Exercise 7

- Ask the students to match the words with the pictures from the DVD clip.
- **Answers:** 1 operation 2 patient 3 face mask 4 surgeon 5 operating theatre

Extension

Exercises 8 and 9

- **Materials needed:** Access to the internet
- **Preparation:** Put the students in groups of three or four. Tell them that they are going to give a presentation about an important invention.
- **Language:** Encourage them to use the time expressions.
- **Activity:** Ask the students to spend a minute deciding on an important invention they would like to research. Nominate one note-taker in the group. Give the students 5–6 minutes to find out about all the points and make notes. Alternatively, you could ask students to do this at home. Then ask them to present their ideas to the class. Set a time limit for each presentation of 2–3 minutes.
- **Extension:** Ask the students to write a short story about how the invention helped someone.

Joseph Lister

Before the 19th century, many patients died after operations. Surgeons didn't wash their hands between operations and hospitals were not clean places. They were full of germs – very small living things which often carried diseases.

Joseph Lister was a famous British surgeon. He invented antiseptic surgery. This meant that doctors could kill many of the germs on themselves and their tools. It changed surgery forever.

Lister was born near London in 1827. He studied medicine at University College London, and after that, moved to Scotland to work as a surgeon. To start off with, he worked in Glasgow, but later he moved to Edinburgh to work as the Professor of Surgery at the city's university.

This is St Thomas' Church in London. It was part of an old hospital and still has an original operating theatre. At that time, surgery was very different from the operations we know today. There were no drugs to help you sleep during the operation, so the patient lay awake on a wooden table like this. The surgeon used a variety of instruments. Most of these weren't clean because doctors and surgeons didn't understand the danger of germs. Even their clothes were still dirty with other patients' blood!

Most operations were terrifying and painful, and patients often died. Lister wanted to improve the situation, but he didn't find the answer in a book or even in a hospital – he found it in the countryside. At that time, farmers used carbolic acid to treat a common disease in cows.

First of all, Lister mixed the carbolic acid with water, creating the first antiseptic. Next, he cleaned all his instruments and his clothes with the antiseptic. Finally, he used the new, clean instruments in his surgery. The results were amazing!

Before he started using antiseptics, around 45% of Lister's patients died during surgery. After he introduced antiseptics, only 15% of his patients died. Soon, all surgeons used antiseptics in surgery.

Today, we know that germs are dangerous and it's important to be clean. All surgeons wash their hands with antiseptic liquid. They wear clean clothes and face masks so they don't carry germs into the operating theatre. The theatre itself doesn't have any germs because staff members clean the equipment with antiseptics before and after each operation.

Lister's work changed surgery forever, and today – over a century after his death – his antiseptics are still saving lives.