

# Microbes and their effects

## Solve the case of the dodgy barbeque

At her birthday garden party, Chloe's dad cooked beef burgers on a barbeque for the guests. Everybody was very hungry and so Chloe's dad cooked the burgers quickly. They were burnt on the outside. After a couple of mouthfuls, a few guests complained that their burgers were cold in the middle, so Chloe's dad put them back on the barbeque to heat them through. A few hours later, some of the guests had bad stomach pains and a few vomited. The next day, many of the guests were being sick and had diarrhoea.

**Task:** Use the information above to explain why the guests had food poisoning and the body's response to the infection.

You can do this either by:

- drawing a cartoon strip to show the stages of infection;
- writing an exciting story to show how the infection takes hold and is defeated.

**Make sure you include:**

1. How bacteria can enter the body.
2. Which barriers the bacteria must overcome when entering the body.
3. How the bacteria reproduce in the digestive system.
4. What the body can do to fight the infection.
5. How the body can prepare itself for a future infection from the same bacteria.

### Food poisoning fact file:

Food poisoning can be caused by bacteria called **Salmonella**.

A small number of the bacteria on meat can cause food poisoning. These bacteria enter the body and **reproduce** by dividing in the same way as cells in the body. Each **bacterium** can divide every 20 minutes.

When it enters the body, it reacts with chemicals in the **digestive system** and causes food poisoning.

**Keywords:** antibodies, bacterium (bacteria), food poisoning, illness, immune, infection, small intestine, stomach, stomach acid, white blood

To get level	You might have:
In line with expectations	<ul style="list-style-type: none"> <li>• Explained simply why the guests got food poisoning.</li> <li>• Described the body's defences against the bacteria.</li> <li>• Explained why it takes a few hours before a person feels ill.</li> <li>• Described how the body fights the infection.</li> <li>• Explained how food poisoning can be prevented.</li> </ul>

To get level	You might have:
Above expectations	<ul style="list-style-type: none"> <li>• Explained why the guests got food poisoning.</li> <li>• Explained how some human body cells are specialised to stop bacteria entering it.</li> <li>• Explained, using diagrams, how the bacteria divide in the body.</li> <li>• Explained how the body responds to the infection.</li> <li>• Explained the body's response if it was infected by the same type of bacteria again.</li> </ul>
Exceptional	<p>Followed the instructions for Above expectations, using detailed scientific knowledge and understanding, and also:</p> <ul style="list-style-type: none"> <li>• Used numerical methods to estimate the number of bacteria that are in the body after a few hours.</li> <li>• Made comparisons of the sizes of bacteria and human cells.</li> </ul>