

# Contamination Detectives

## Teachers' notes



### Background information

Bacteria can be easily spread through families and communities due to poor hygiene. Simple steps such as thorough hand washing can reduce the spread of bacteria from person to person.

The aim of this activity is to raise awareness of the transmission of bacteria and to show how easily germs can spread from person to person but also on to different surfaces around the house and school. The key message is that thorough hand washing can reduce the spread of bacteria.

### Materials to run Contamination Detectives

- Glo Germ™ powder or gel
- UV torch
- Worksheet
- Contamination marker cards
- Biohazard tape (optional)

### Sourcing Glo Germ™ products

Glo Germ™ is available from the following websites\*:

<http://www.hygienicsolutionsuk.com/>

<http://www.handinspection.co.uk/?gclid=CKWUzqjdiaQCFYlg4wodiTaRHw>

\* This is not an endorsement; other suppliers are available.

### Safety notes

The Glo Germ™ product is non-toxic and non-staining. However, when running the activity please ensure that you:

- tell the students not to touch their faces or anyone else's whilst the Glo Germ™ is on their hands
- ensure that all students wash their hands thoroughly at the end of the activity.

If using an alternative product please check with the manufacturer that it is suitable for this activity.

The UV LED torch should only be operated by the supervising adult or activity leader. When using the torch, please ensure that the torch is pointed at the floor, work surfaces or the student's hands.

Under no circumstances should the torch be pointed at anyone's face.

### Activity preparation

#### Room set up (prior to students arriving)

Glo Germ™ is used to represent generic "bacteria" that can be spread through human contact and left on household surfaces. Prior to the students arriving you need to create a "contamination scene" in your classroom.

Choose five places in the room to mark as places of "contamination", i.e. things you would have touched

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or picked up as part of a daily routine such as a door handle, desk work surface, chair, blackboard etc. Either brush these areas with the Glo Germ™ powder to imitate an area of bacterial contamination or apply the gel to your hands and make hand print or fingerprint marks on the chosen surfaces. Make sure the places you choose are easy to clean afterwards.

### Running the activity

#### Setting the scene

1. Explain to the students that they are "Contamination Detectives". Earlier today someone didn't wash their hands after sneezing or visiting the toilet and they have to identify places in the room where bacteria has been spread.
2. As a group, encourage the students to think and discuss which items would most likely have been touched or leant against.
3. Encourage students to make a list of five places where they think they will find bacteria using their worksheet.

#### Identifying the contamination sites

1. As a group, visit all of the places suggested and use the UV torch to identify if there is any "bacteria" to be found. **Remember:** only the adult group leader should use the torch (see safety notes).
2. Once a contamination site has been detected, place a yellow contamination marker card at this location for the group to see.

#### Completing the worksheet

Students should complete the worksheets during the activity so they can feedback their results.

For a focused discussion you can record the results on a flip chart or whiteboard. This can be used to encourage discussion about their ideas and help the students to answer the final question on their worksheet: *What are the best ways to prevent bacteria and other microbes spreading to other surfaces?*

The best ways to prevent bacteria and other microbes from spreading is to regularly wash your hands with warm water and soap especially after sneezing, visiting the bathroom, playing outside or handling animals. To prevent the spread of harmful bacteria it is also important to regularly clean surfaces that come into contact with food such as kitchen tables or work surfaces.

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#### Observation sheet

Using the table below list five places in the room where you think you will find bacteria contamination?

	Possible sites of contamination	Was bacteria found here?
1		
2		
3		
4		
5		

Were there any sites that you did not think of? If so, where were they?

What are the best ways to prevent bacteria and other microbes spreading to other surfaces?



yourgenome.org



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## Further information

Additional sources of information on the web for teachers and students to increase their knowledge of pathogens:

### Wellcome Trust *Big Picture*: Epidemics

These are online articles on issues surrounding disease epidemics looking at:

- how individuals and governments should respond to the possibility of new outbreaks
- the role pharmaceutical companies have to play in disease control
- who should have priority for vaccines when there is not enough medicine to go around.

The website also has an excellent online picture gallery of a range of different infectious microbes including, fungi, bacteria and viruses.

<http://www.wellcome.ac.uk/Education-resources/Teaching-and-education/Big-Picture/All-issues/Epidemics/index.htm>

### Wellcome Trust *Big Picture*: Influenza special edition

This downloadable issue of the *Big Picture* looks at:

- the nature of influenza, drugs and vaccines that can fight it
- the current H1N1 pandemic, how it compares to previous strains and what international and national bodies are doing about it.

<http://www.wellcome.ac.uk/Education-resources/Teaching-and-education/Big-Picture/All-issues/Influenza-special-issue/index.htm>

## Online resources

Additional resources and activities for the classroom help support this activity:

### Sneeze game online

This is an interactive game from the Wellcome Trust where you have to infect as many people as possible with a single sneeze.

<http://www.routesgame.com/games/?challengeId=2>

### E-bug

E-bug is an online antibiotic and hygiene teaching resource aimed at Key Stage 2 and Key Stage 3 students. Created by the Health Protection Agency (HPA), it involves a consortium of 18 partner European Union countries. It has a range of games, interactive quizzes, disease fact sheets and much more.

[www.e-bug.eu](http://www.e-bug.eu)

### BBC broadband classroom clips

This website offers video clips to support the teaching of bacteria in the classroom. Some recommended clips to support this activity are listed below:

<http://www.bbc.co.uk/learningzone/clips/microbes-and-the-human-body/207.html>

<http://www.bbc.co.uk/learningzone/clips/seeing-the-bacteria-carried-on-hands/2277.html>

<http://www.bbc.co.uk/learningzone/clips/investigates-the-importance-of-handwashing-in-food-hygiene/2883.html>