



**Get hands-on
with real-life
science**

HostBusters's Information for Teachers

Learning level	S1-3
Research themes	Infectious diseases Microbiology Food security
Duration	Secondary – (100 min) double lesson

HostBusters overview:

In this activity, participants will learn about how bacteria infect humans or animals. The concept that bacteria are everywhere and can have both advantageous and detrimental roles in human health will be discussed using examples and news headlines.

To initiate a discussion how bacteria can spread, a small activity using the Glo Germ kit will be performed, and the class will be divided in groups of 4/5 pupils.

The concept of pathogenicity and virulence factors will be introduced using a cartoon strip where bacteria pick up pathogenic traits called “power-ups” and become stronger with each one. These ideas will be reinforced by playing the Host Busters game where bacteria acquires different power-ups to infect a range of different animals.

In the final section of the activity, scientists will sum up the concepts explained during the activity with a summary powerpoint slide and will talk about their projects and every-day live at the Roslin institute.

Learning objectives:

S1-3

- Understand that bacteria can be found everywhere
- Understand that bacteria can be beneficial or pathogenic.
- Understand how bacteria spreads.
- Understand that bacteria uses different tools and strategies to fight and escape the host immune system.

Curriculum links

Secondary

Biological systems	Topical science	Planet Earth
Body systems and cells		Biodiversity and interdependence
<p>I have explored the role of technology in monitoring health and improving the quality of life. SCN 3-12b</p> <p>I have contributed to investigations into the different types of microorganisms and can explain how their growth can be controlled. SCN 3-13b</p>	<p>I have explored how the body defends itself against disease and can describe how vaccines can provide protection. SCN 3-13c</p> <p>I have collaborated with others to find the present information on how scientists from Scotland and beyond have contributed to innovative research and development. SCN 3-20a</p>	<p>I can sample and identify living things from different habitats to compare their biodiversity and can suggest reasons for their distribution. SCN 3-01a</p>

Developing the Young Workforce 'I can' statements

- I can discuss the relevance of skills to the wider world and make connections between skills and the world of work.
- I can explain to others my ambitions/what I would like to do and look for ways to achieve them/that.
- I can recognise the skills I have and need for work.
- I can identify my interests, strengths and skills and use them to make informed choices.
- I can choose a blend of subjects, courses and experiences to enable my career pathways.