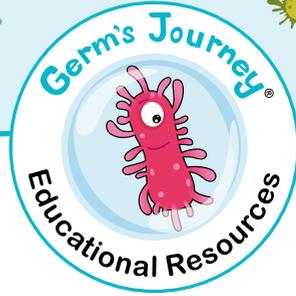


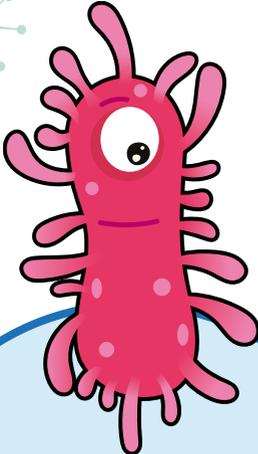
Creating better health  
through infection  
prevention education:

**Resources for  
Key Stage 2**



# MISSION MICROBE

**FIVE-STEP  
QUEST** 

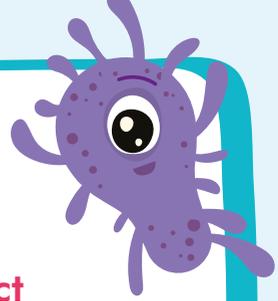


A teaching resources  
pack brought to you by

**Germ's Journey®**



# Why get involved?



**Children deserve to know how to protect themselves, and their loved ones, from infection. For many, antimicrobial resistance may be one of the biggest global health challenges they will face in their lifetime.**

Germ's Journey aims to tackle infection by educating children on one of the simplest prevention and control measures: effective handwashing.

**Our mission is to educate one billion children on everyday infection prevention by 2030.**

To date, we've trained **300 teachers** and reached more than **30,000 children directly**. We've evidenced a **100% increase in children's understanding of the importance of handwashing to remove germs**. We operate in three continents and our resources are already available in **10 languages**.

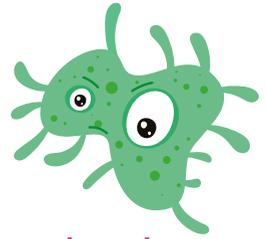
But this is just the beginning. We need your help to give more children an infection prevention education.

We hope you'll share our Microbe Mission and get involved.

Thank you.



# Using the resources



This pack has been designed by infection prevention and teaching experts to provide valuable, free resources to educators working with children in KS2.

The aim of the Microbe Mission is to complete all five steps of the learning quest to become a **'Germ's Journey Explorer'**.

Each step includes engaging, fun activities that introduce children to the topic of germs and infection. The five steps can be run across consecutive days or weeks, depending on your learning setting, lasting approximately 20 minutes.

On completion of the five steps, children will receive a **'Germ's Journey Explorer'** certificate to mark their achievement.



## Resources include:



**Five-steps learning resources pack**



**Links to online videos and games**



**Worksheets for in-session learning**



**Stickers, posters & certificates**



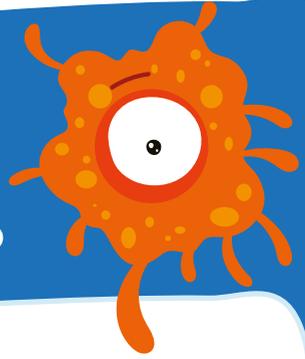
**Activities to take home**



**Additional information for educators**

# Step 1:

## What are germs and how do they spread?



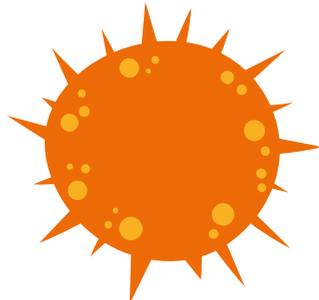
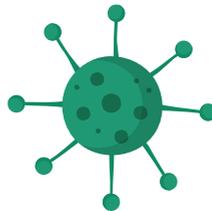
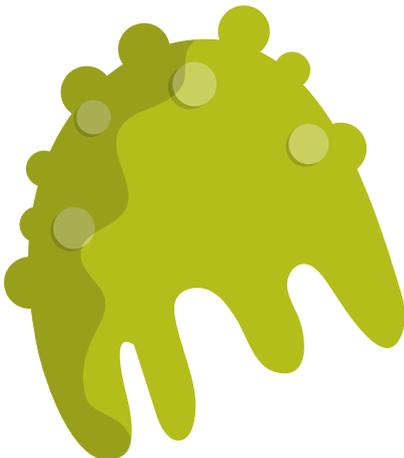
### Learning objective:

- To learn what germs are.
- To learn the difference between germs that are good for us and our bodies, or germs that could be harmful or make us ill.
- To learn the difference between viruses and bacteria.



### Resources needed:

- **1KS2A:** [Giant Microbes video](#) [Click to view](#)
- **1KS2B:** [Virus and bacteria construction sheets](#) (*print out*)
- Scissors
- Glue





## Activities:

### Giant Microbes video



Play the Giant Microbes video to introduce children to the concept of germs.

In the video, using fun microbe plush toys, Jules (the Germ's Journey Book's illustrator) explains how invisible germs on hands and in coughs and sneezes can be spread. Germs come in all shapes and sizes but are all very small and can only be seen with special equipment called microscopes. Jules uses giant microbe toys to show variation of germs (SARS-CoV-2, *Pseudomonas* sp., *Staphylococcus aureus* and MRSA).

The video explores bacteria and viruses and 'good' and 'bad' germs. Good germs help us make bread, yoghurt and medicine. Some good germs live inside us to help us digest our food and they can stop bad germs. Bad germs make us feel ill. Bacteria can live outside the body; viruses must get inside our cells before they can make more viruses.

### Antibiotic Resistance origami and bacteria cut and stick (one for school/one for home)



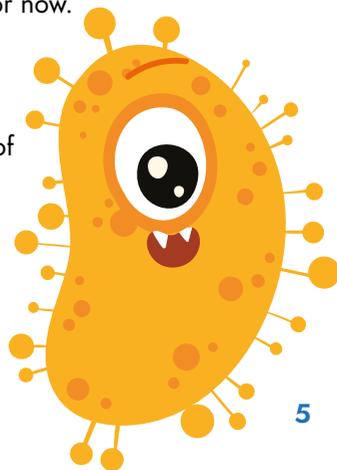
Give the children a virus and bacteria sheet each and let them choose which to make first (they can take the other sheet home.) Follow the guidance to make the virus and bacteria using scissors and glue.

**The virus:** cut out the virus net and assemble into the diamond shape. Cut out the RNA spiral and put it into the virus net.

**The bacteria:** cut out the bacteria and the 3 organelle cards (parts 1 and 2 on the sheet). Put the antibiotic to one side for now.

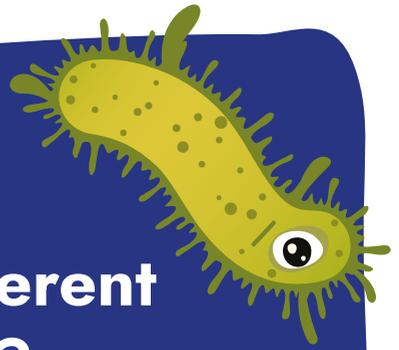
Use the activity to help children find out some of the differences between viruses and bacteria:

- **Virus:** more simple structure – just the one long string of nucleic acid, that tucks inside the capsule
- **Bacteria:** more complicated structure and have several items (organelles) to tuck inside.



# Step 2:

## Where do we find germs and what different uses do germs have?



### Learning objective:

- To understand where germs can be found and the different uses that germs have.



### Resources needed:

- **2KS2A: Funky Facts Germs** (*print out*)
- **2KS2B: Checklists** (*print out*)



### Activities:

#### Funky fact germs game

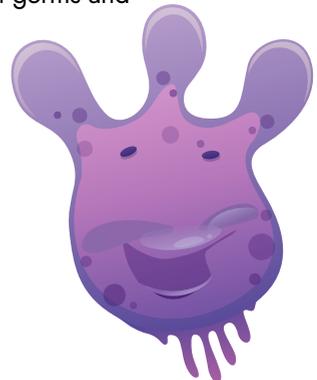


Place the print outs of the germs in different areas around the room (these could be placed around certain areas of the where the real germs would be hiding depending on what each germ specifies).

Give the children the checklist worksheets to complete in small groups.

Ask the children to go around the room, find the different germs and note down whether each germ is good or bad and write a sentence explaining why on their checklist.

The germs can then be displayed as a visual prompt or be taken down to play again.



# Step 3:

## How, when and why do we wash our hands?



### Learning objective:

- To learn **how** to wash hands effectively to remove germs, **why** hand-washing is important and **when** to do it.



### Resources needed:

- **3KS2A: Glow Gel Video** [Click to view](#)
- Bowl
- Water
- Ground pepper
- Kitchen roll
- **3KS2B: Soaper Stars activity sheet** (*print out*)





## Activities:



### (How) Glow gel activity video

Play the video to show children the correct way to wash their hands. The video shows someone covering their hands with glo-gel ('germs') and then placing their hands under a UV lamp. The person first washes their hands quickly; the result is that many of the germs are still present. The person then washes their hands properly. When they place their hands under the UV lamp all the germs have gone.



### (How) Pepper and soap activity

This activity can be completed either as a whole class, or in smaller groups.

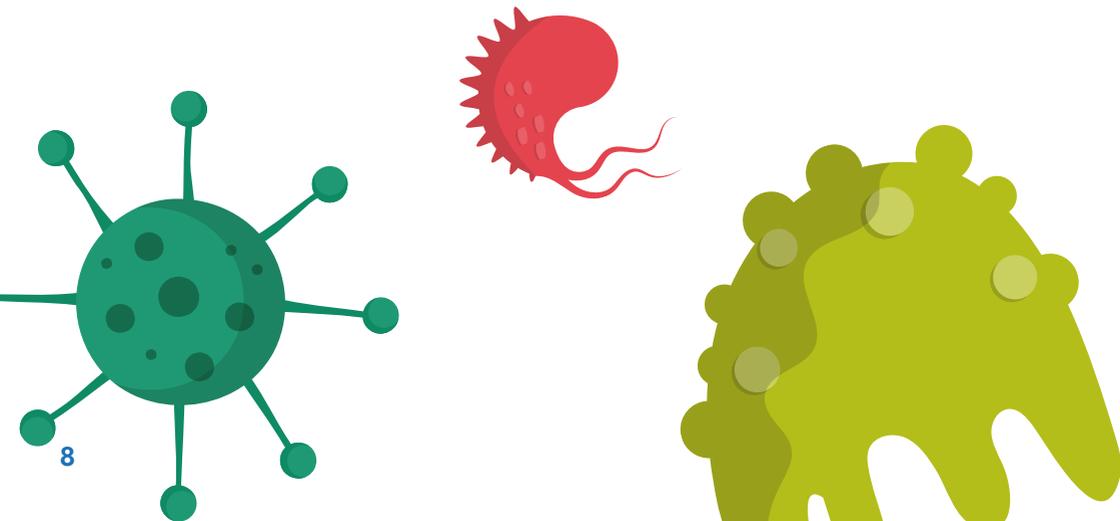
Sprinkle a generous amount of pepper (pretend germs) into a bowl of water.

Ask a child to put their finger into the bowl of water and pepper; when they remove it the pretend germs will be all over their finger. Next, ask your child to place soap on their finger and once again put their finger in the bowl.

Watch the pretend germs 'run away' from the soap.

Use this method to visually show the children how germs disappear when using soap, and why correct handwashing is so important to keep their hands clean and themselves healthy!

Be sure to explain that just placing soap on their hands is not enough to get rid of real germs, they must wash their hands properly to keep their hands clean.



# SOAPER STARS

## Activity Sheet



Introduce the Soaper Stars as below:

The **Soaper Stars** are your new best hand cleaning and bubble buddies. They help to stop the germs dirty tricks and save the day.



First up is **King Clean** and the **Hygiene Queen**, they are the royal rulers of the Soaper Stars and hunt down the germs and get rid of them with the help of their clean team.



There's **Gel-boy**, his handy hand gel means he's ready to clear the germs wherever he goes.



**Cleany-Genie** uses her soap sabre to stop the germs in their tracks.



The magic foam that **Sudley** produces makes any germ vanish in the blink of an eye.

**Evie Squeezy** is too much for germs with her soap slime sending them away.



And finally there's **Swipez** and his wonder wipes being there to wave the germs bye-bye.



Print out the Soaper Start activity sheets for each child.

## (When) Soaper Stars Activity Sheet

Ask children to complete the Soaper Stars maze worksheet first. Follow **Evie Squeezy** on her journey to see **Swipez**. Use the sheet to discuss when it is most important to wash our hands, which are:

1. **After playing with shared toys**
2. **After going to the toilet**
3. **Before touching food**
4. **After playing outside**
5. **After coughing and sneezing into our hands**

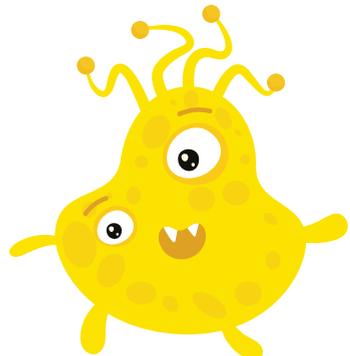


Ask the children to suggest other times too e.g. after playing with pets. The children will then be able to take the sheet to complete at home.

## (Why) Recap – Discussion

Ensure children have understood **why** handwashing is important, based on what has been learned in days 1 and 2. Discuss:

- That there are good and bad germs. Good germs are helpful for our bodies and keep us healthy. Bad germs can cause illness.
- That germs are everywhere but are invisible. If we touch things with bad germs on them, and then touch our faces, eyes or put our hands in our mouths, germs can get inside our bodies and make us ill. That's why it is so important to wash hands regularly with soap and water, and make sure we dry our hands properly, to remove the germs from our hands.



# Step 4:

## How should we treat an infection? Can we always use antibiotics?



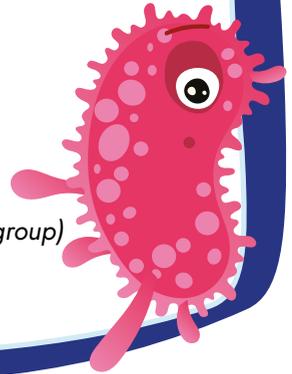
### Learning objective:

- To learn about the correct use of antibiotics.
- To only use them for bacterial infections not viral infections.
- To take the whole course of antibiotics.
- To not share with other people.



### Resources needed:

- **4KS2A: Patient Casefile** (1 per group)
- **4KS2B: Infection fact-file** (1 per group)  
*Streptococcus* sp. (pronounced strep-toe-coc-us) (1 per group)  
Rhinovirus (pronounced rhino-virus) (1 per group)
- **4KS2C: Microbiology cheat sheets**



### Activities:



### Casefiles - Taken from the book 'Fight Against Resistance'

In this activity, the children have a puzzle to solve; a little boy has a sore throat. Can they work out what has caused it, and decide on the best cause of treatment?

The patient case file gives a list of the signs and symptoms and asks the children to work out:

- a) is it a viral or a bacterial infection?
- b) should it be treated with antibiotics?
- c) if yes, which is the best antibiotic to use?

They will have fact files to help them decide.

DOC (Director of Operations and Control) is a character from the book 'Fight Against Resistance' who gives some very important information about the proper use of antibiotics. This can be given to the children to read, or the teacher can read it to the whole class.

# Step 5:

## Do I really need antibiotics?

### What happens if I don't take the whole course?



#### Learning objective:

- To learn how quickly bacteria can multiply.
- What happens if antibiotics are not used properly.



#### Resources needed:

- **5KS2A:** [1st video \(introduction\)](#) [Click to view](#)
- **5KS2B:** [2nd video \(scenario 1\)](#) [Click to view](#)
- **5KS2C:** [3rd video \(scenario 2\)](#) [Click to view](#)
- **5KS2E:** [4th video \(scenario 3\)](#) [Click to view](#)
- **5KS2F:** [Video worksheet](#) (*print out*)



#### Activities:

### Antibiotic resistance videos



There are four videos to play that show bacteria multiplying.

- **Video one: Introduction** – This introduces the concept of bacteria, antibiotics, bacterial mutation and resistance.
- **Video two: Scenario 1** – All the antibiotics are taken; the bacteria are unable to multiply, and the infection clears up.
- **Video three: Scenario 2** – None of the antibiotics are taken, and the bacteria keep on multiplying (*see if the children can work out how many there will be*).
- **Video four: Scenario 3** – Only some of the antibiotics are taken. This allows a mutant bacteria to take over, and soon all the bacteria are resistant to antibiotics, and the infection cannot be treated.

*(Note, try speeding up the videos to make them more fun!)*

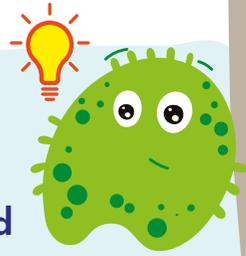
Give the children an accompanying sheet to reinforce the learning.

# Completing the mission and becoming a Germ's Journey Explorer

To finish the five-step quest, children must be able to show they know how to protect themselves against germs by answering the following questions correctly (either as a whole group, or individually).



- Q1:** Can antibiotics be used whenever we feel ill?
- Q2:** Should antibiotics only be used when we have a bacterial infection?
- Q3:** Can you stop taking antibiotics when you start to feel better?
- Q4:** What is the difference between a bacteria and a virus?
- Q5:** How can we stop germs spreading?



Find the answers and additional information here [Answers](#)

When you have confirmed that the children know the answers, visit the [Germ's Journey](#) website to create a certificate for each child.



# Curriculum links

The Germ's Journey learning activities have been developed to support the National Curriculum, as follows:

## National Curriculum links for KS1 and KS2:

- **English:** Reading and comprehension, writing.
- **Science:** Living things and their habitats, animals, including humans.
- **Maths:** Number place and value.
- **PHSE:** Health education.
- **Art & Design:** Creativity.

## DfE Statutory Guidance Categories: Physical Health and Mental Wellbeing (Primary)

By the end of primary school, pupils should know about personal hygiene and germs including bacteria, viruses, how they are spread and treated, and the importance of hand washing.

## NICE guideline:

Antimicrobial stewardship: changing risk-related behaviours in the general population, NICE guideline [NG63] Published: 25 January 2017

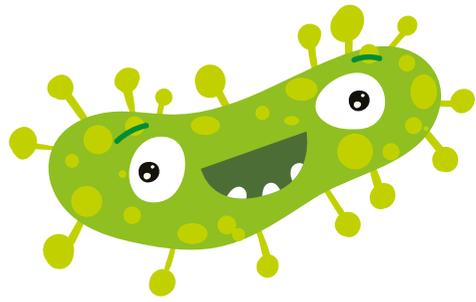
- 1.4.6** Teach all children, in an appropriate way for their age and ability, about the need to reduce inappropriate antimicrobial demand and use.
- 1.4.11** Teach all children, in an appropriate way for their age and ability, about the importance of washing and drying hands to prevent infections and stop them from spreading. Discuss when and how hands should be washed.
- 1.4.12** Consider giving children information to take home about when and how to wash their hands.
- 1.4.13** Share information with parents and carers that can support their children's learning. This could include teaching their children how and when to wash their hands.

## UK Health Security Agency Health Guidance:

Protection in children and young people settings, including education.

[www.gov.uk/government/publications/health-protection-in-schools-and-other-childcare-facilities](https://www.gov.uk/government/publications/health-protection-in-schools-and-other-childcare-facilities)

# Further resources



A Germ's Journey – Fight Against Resistance

Buy now from Amazon



A Germ's Journey –  
Fight Against Resistance (comic book)

Buy now from Medina Publishing

For more resources visit: [www.germsjourney.com](http://www.germsjourney.com)

## Contact

To find out more about Germ's Journey initiatives, and how you can get involved or support our work, please contact us.



[enquiries@germsjourney.com](mailto:enquiries@germsjourney.com)



[www.germsjourney.com](http://www.germsjourney.com)



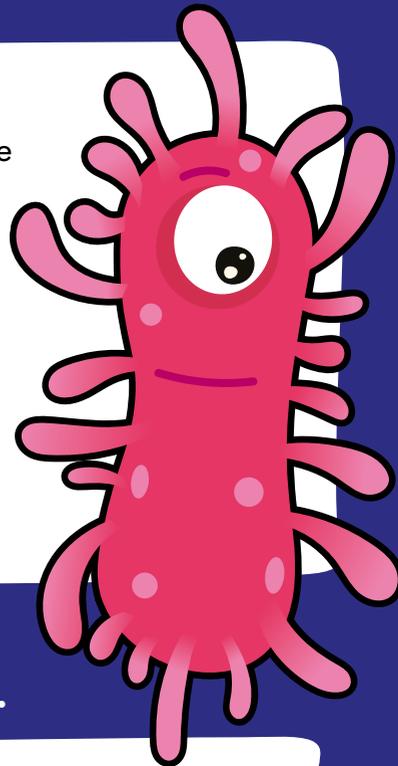
# How **Germ's Journey** began



The idea for **Germ's Journey** came about when microbiologist, Prof. Katie Laird was trying to teach her young son about germs and handwashing and realised that there were very little educational resources available for teaching young children about this topic. Katie then discussed this idea with education specialist, Prof. Sarah Younie.

The two worked together alongside a multidisciplinary team of experts from a range of areas including: microbiology, education, psychology, art and design, technology and media to develop unique interactive learning resources for young children.

Germ's Journey has successfully grown its resources and reach, and now supports educators to raise awareness of health hygiene across the globe.



We hope you enjoy your **Germ's Journey** experience with us.

