



Spread of Infection: Respiratory Hygiene

In this fun experiment students learn how easily microbes can be spread through coughs and sneezes and recreate a sneeze.

Curriculum Links

Science

Working scientifically, Living things and their habitats

PSHE/RSHE

Health and prevention

English

Reading and comprehension,
Spoken language

Mathematics

Comparing measurements

Key Words

Bacteria, Hygiene, Micro-organism,
Sneeze, Cough, Hand wash,
Hand sanitiser.

Weblink

[e-bug.eu/eng/KS1/lesson/
Respiratory-Hygiene](http://e-bug.eu/eng/KS1/lesson/Respiratory-Hygiene)

Learning Outcomes

All students will:

- Understand there can be harmful microbes in our coughs and sneezes.
- Understand that infection can be spread through coughs and sneezes.
- Understand that good respiratory hygiene can reduce the spread of infection.

Most students will:

- Understand that we can spread infection through touching surfaces after touching/wiping our nose or holding a cough/sneeze.
- Understand how to develop best practice respiratory hygiene behaviours in everyday life to reduce the spread of infection.

Resources Required

Activity: Snot Runway *Per group*

- Long roll of paper such as wallpaper
- Measuring tape or 2m ruler
- Pump action spray bottle/s
- Green food colouring
- Disposable plastic/vinyl gloves
- Kitchen roll
- Pens and sticky notes (optional)
- A funny mask to cover the spray bottle (optional)
- Cardboard

Extension Activity: Fact Sheet *Per student*

- SH1 Super Sneezes Fact Sheet

Extension Activity: Super Slimy Snot Activity *Per student*

- SH2 Super Slimy Snot Activity

Extension Activity: Super Sneezes Wordsearch

- SW1 Super Sneezes Wordsearch

Extension Activity: Fill in the Blank Worksheet

- SW2 Super Sneezes Fill in the Blank Worksheet

Advance preparation

1. Create a paper runway on the floor or by placing 3 – 4 desks in a row and covering them with white paper (lining wallpaper is a cheap alternative).
2. Fill one spray bottle per group with water and food colouring.

3. Create a large cardboard cut out hand for each group with a longer arm section for holding or alternatively cover a student's hand with a disposable glove.
4. Create a large tissue from a section of kitchen roll.

Health and Safety

Students may require aprons.

Ensure that the food colouring is dilute (to avoid staining).

Ensure that all spray bottles have been thoroughly cleaned and rinsed prior to use.

Students may need to wear safety goggles.

For safe microbiological practices in the classroom consult CLEAPPS www.cleapps.org.uk

Supporting Materials



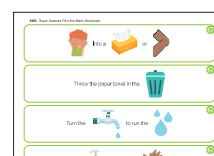
SH1 Super Sneezes Fact Sheet



SH2 Super Slimy Snot Activity (available online)



SW1 Super Sneezes Wordsearch



SW2 Super Sneezes Fill in the Blank Worksheet

Lesson Plan



Introduction

1. Begin the lesson by explaining to students that they are going to learn how harmful microbes (germs) can make us poorly and are passed from person to person through coughing and sneezing.
2. Explain to students that many harmful microbes can travel in tiny droplets of mucus/snot and water coughed and sneezed into the air by people. If you are carrying out the Super Slimy Snot Activity (SH2) it is useful to refer to that here. You can use examples like the common cold or flu.
3. Continue to discuss a cold, or flu, explaining that they are caused by very small microbes called viruses.
4. Explain that it is very important for everyone's health that people cover their mouth and nose with a tissue when they cough and sneeze, or with their sleeve/into the crook of their elbow if they have no tissue. They should then wash their hands or use hand gel.

Discussion

Explain that sneezing in your hand can spread the microbes to things that we touch, so it is better to sneeze into the tissue and then throw it away and wash your hands or use hand sanitiser as soon as possible.

Discuss with the class what happened. You may want to show the glove or hand that covered the cough/sneeze and notice that the spray germs (microbes) are still on it. Show the students that when they place the hand on the paper, sprayed side down, the microbes transfer to the paper.

As was observed from the activity, microbes can still be passed from person to person through touch if we cover our coughs and sneezes with our hands. Recent guidance recommends we sneeze or cough into our elbow or sleeve because we are less likely to transmit harmful microbes to other people by doing this.

Activity: Snot Runway

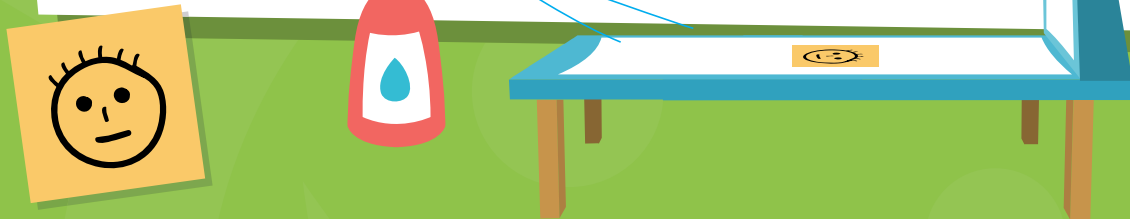
1 Write your name or draw a picture of yourself on sticky note and place on runway

2 Spray the bottle from end of runway

3 Measure the distance

4 Spray the bottle with hand or glove over nozzle

5 Spray the bottle with kitchen towel over nozzle



1. Ask the group to write their name or draw a picture of themselves on a sticky note (or write directly on the runway). Ask the group to imagine that the runway is a bus and the students can place themselves where they think they will avoid the germs from the cough/sneeze.
2. Hold the bottle at the end of the sneeze runway and simulate a sneeze/cough by squeezing the trigger while everyone shouts 'ACHOO'. You can then work out who was closest to the actual distance by measuring the distance between the spray droplets and the student's name or picture of themselves. You may wish to repeat to allow all students to have a go.
3. Ask a student to measure how far and how wide the cough/sneeze spreads with a meter ruler or tape measure and determine which student guessed the closest.
4. Ask the group what you would usually do when sneezing or coughing – put a hand over your nose.
5. Ask one student to put on a glove and place their hand over the nozzle to demonstrate putting a hand over your

nose as you cough/sneeze. Pull the trigger again after predicting what will happen. Ask students if this is an effective way to stop the microbes in the snot spreading to others? The microbes stay on our hands and can spread to anything we touch. Explain that students should wash their hands immediately if they cough or sneeze into their hands.

6. Ask someone to put a piece of kitchen towel over the nozzle to demonstrate holding a tissue over your nose as you cough/sneeze. Pull the trigger after predicting what will happen. The cough/sneeze is successfully caught in the tissue and won't infect anyone else if the tissue is thrown in the bin straight away. Ask the catcher to throw the tissue away.
7. Ask the group to recite what they have learned, for example by repeating the phrase 'catch it, bin it, kill it'. Reinforce that catching a cough/sneeze in a tissue is the best way to prevent the spread of microbes to others.

Students will notice that the spray travels furthest when it isn't covered.

Extension Activities

Fact Sheet

SH1 contains fun facts about sneezes. You can read and discuss this sheet with students at the end of the snot runway activity, or provide it as a home reading activity for students.

Super Slimy Snot Activity

Provide each student with the SH2 guide for students to make their own gooey snot. The activity demonstrates how snot sticks to germs and prevents them from entering our bodies.

Super Sneezes Wordsearch





Provide each student with a copy of SW1 and ask them to find hidden key respiratory hygiene words, this can be completed in class or as a homework activity.

Fill in the Blank Worksheet

Provide each student with SW2. Ask students to name the image to complete the sentence. Students can re-write the completed sentence or read it out loud.

Learning Consolidation

At the end of the lesson, ask the class to create some simple rules or messages to reduce the spread of coughs, colds and flu in their school, for example:

-  Coughs and sneezes spread diseases.
-  Catch it, bin it, kill it.
-  Cover my coughs and sneezes with a tissue or cough/sneeze into the crook of my elbow or sleeve (not my hand).
-  Wash my hands after a cough or a sneeze or use hand sanitiser.





Super sneezes

Fact sheet

Why do we sneeze?

Sneezing is a way in which our body tries to get rid of harmful microbes. Germs and dust get stuck in our nose hair and so we sneeze to blow them away.

What is in a sneeze?

Sneezes contain snot and harmful microbes. That is why it's important to cover our sneezes with a tissue or our sleeve (but never our hand), so we don't pass the harmful microbes onto someone else.



Surprise your friends and family with these fun facts!

**DID YOU
KNOW?**

- Sneezes can travel at a speed of 100 miles per hour!
- Sneezes can spread microbes 2-3 meters.
- The longest sneezing spree was 978 days, a record set by Donna Griffiths of Worcestershire, England.
- It is impossible to sneeze without closing your eyes.
- It is illegal to burp or sneeze in a church in Nebraska.





Super slimy snot

Activity

Make your own snot!

Sticky, slimy snot in our noses traps microbes. This helps to stop harmful microbes getting into our bodies and making us poorly. Ask an adult to help you make your own snot using the recipe below.

To make your own snot, you will need:

INGREDIENTS

- PVA Glue
- Laundry starch and warm water
- Green food colouring
- Water
- 2 disposable cups, labelled A and B
- A plastic spoon or stirrer
- A tablespoon
- Rubber gloves

Method

1. Put the gloves on. Fill cup A with water, and ask an adult to add a spoonful of laundry starch to the cup. Stir to mix the powder and water.
2. In cup B, add 2.5cm of PVA glue to the bottom of the cup, and mix with about three tablespoons of water. Stir to mix.
3. Add a few drops of green colouring to cup B and stir to mix.
4. Finally, add a tablespoon of the starch solution (from cup A) to cup B, and watch the green slimy snot form! After about 30 seconds you can play with it!

You can play with the snot, but do not eat it!

Wash your hands when you have finished playing with the snot. It will last a few days if you keep it wrapped up in cling film.





Super Sneezes Wordsearch

Can you find all the sneezy words in the wordsearch below?

Remember that words can be horizontal (across), vertical (down) or diagonal (top left to bottom right)

G	E	R	M	S	N	Y	Y	K	O
M	C	O	L	D	J	Z	W	T	S
B	N	O	H	C	D	E	I	W	P
A	P	I	G	S	U	B	U	G	S
C	B	Z	J	C	N	C	O	K	S
T	F	L	U	P	M	O	J	A	N
E	B	V	K	A	S	D	T	T	E
R	F	C	O	U	G	H	S	B	E
I	I	W	F	R	S	V	H	B	Z
A	V	I	R	U	S	B	C	D	E

SNOT

BUGS

VIRUS

COUGH

COLD

SNEEZE

FLU

BACTERIA

GERMS





Into a



or



Throw the paper towel in the



Turn the



to run the



Put



on your



Rub your



together



Rinse your



with



Turn off the

