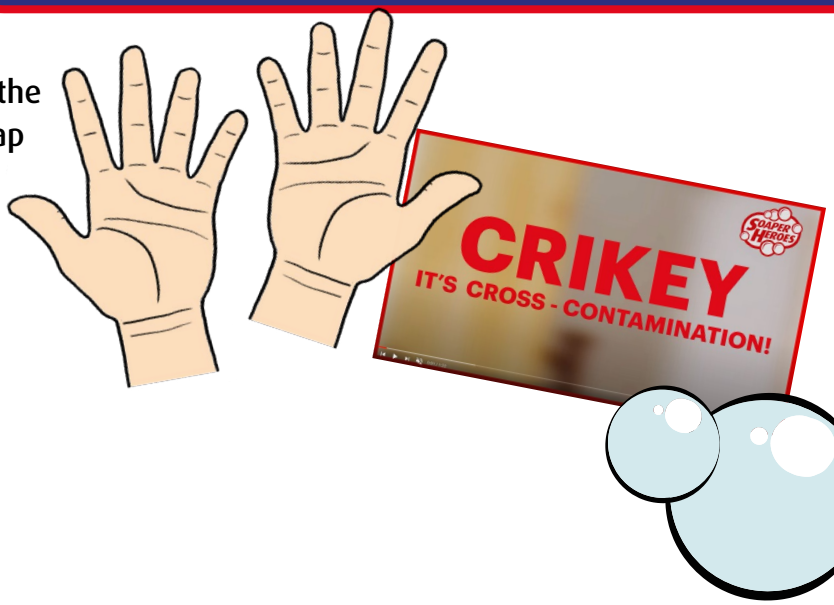
EXPERIMENT SHEET 1

How does cross-contamination spread germs?

Objective

To understand how germs can be spread through cross-contamination. This demonstration stresses the importance of thoroughly washing hands with soap and warm water to prevent the spread of germs.

This experiment is not suitable during times of social distancing.



What you need

- Flour, paint, gel or talcum powder
- Paper towels
- Sink (to wash off)

Experiment

1. Ask students to stand in a circle.
2. Select every 5th student and place some flour, paint, Glo-germ gel or talcum powder onto their hands. Explain that this represents germs.
3. Ask them to shake hands with another 3 students.
4. Then, ask these students to shake hands with another 3 students.
5. Continue this process until all hands in the classroom have been touched.
6. Lead a discussion about how germs can spread from one person to another.

How many people ended up with 'germs'?

How can we reduce the spread of germs?

What does 'cross-contamination' mean?

Why must we wash our hands after touching key Hygiene Hotspots/things that other people touch?

EXPERIMENT SHEET 2

How far can a sneeze travel?

Objective

To show how far sneezes can travel and encourage students to prevent contamination from sneezing.

What you need

- Floor marked out in 1 metre intervals
- 10 smiley face print outs
- Water spray bottle
- Box of tissues
- Tape measure
- Paper towels
- Masking tape
- Food colouring or poster paint (optional)

Experiment

1. Create a 4 metre floor grid by marking out 1 metre intervals with masking tape
2. Place the smiley faces on the floor at intervals
3. Fill up the spray bottle (you could add a little food colouring or poster paint) and stand at the start point of the sneeze zone
4. 'Sneeze' by using the spray bottle and measure how far the drops go. Repeat 5 times.
5. Hold a tissue in front of the spray bottle. 'Sneeze' again by using the spray bottle and measure how far the drops go. Repeat 5 times.

		SNEEZE 1	SNEEZE 2	SNEEZE 3	SNEEZE 4	SNEEZE 5
SNEEZE	Distance covered					
	Number of people affected					
SNEEZE WITH TISSUE	Distance covered					
	Number of people affected					

How far can a sneeze travel?

What was the highest number of smileys affected by one sneeze?

What happens when you put a tissue over your mouth when you sneeze?

What do you do with a tissue once it has been used? Why?

Why is it better to use a tissue or elbow when sneezing, not your hand?

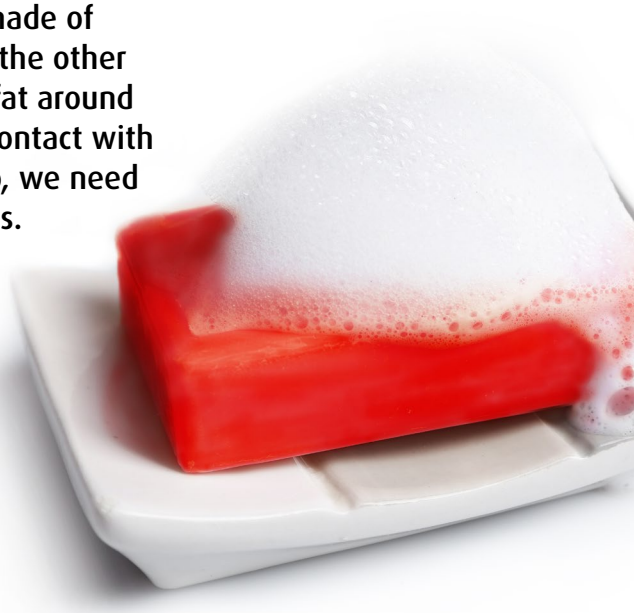
Make up a slogan to help people sneeze the right way

EXPERIMENT SHEET 3

Busting viruses with soap

Objective

Understand how soap can destroy viruses. Explanation: soap is made of molecules. Each molecule is like a pin. One end loves water and the other end loves fat. Some viruses (and bacteria) have an envelope of fat around them. See what can happen when a soap molecule comes into contact with a virus. Soap bursts the fatty envelope and destroys the virus. So, we need to wash our hands with soap and water to keep safe from viruses.



What you need

- Balloon with glitter or small bits of coloured paper inside
- Pin (this is your soap)
- Soap

Experiment

1. Put some glitter (or confetti) inside a balloon and inflate it. This represents a virus.
2. Ask the class how they might stop this virus from spreading.
3. Draw attention to the pin (representing a soap molecule) and show how, when the pin comes into contact with the virus envelope, it is destroyed.
4. Collect observations from students and discuss what you've seen.

What are the scientific terms for the water-loving and fat-loving ends of the soap molecule?

What happens when soap touches the virus? Why?

How do we make sure the contents of the burst virus don't lie around?

EXPERIMENT SHEET 4

Where do most germs hide... in the kitchen?

Objective

To understand where microbes hide in the kitchen. (Alternatively you can do this experiment in the classroom). Remember: not all microbes are harmful. Most of the microbes you will find are completely harmless to us. Let's be microbe detectives!

What you need

- 4 slices of bread
- 4 small sealable clear plastic bags
- Sprinkle of water
- Camera (optional)
- Magnifying glass
- Marker pen
- Notebook

Experiment

1. Put 1 slice of fresh bread into a plastic bag. Seal the bag and label as "control and clean".
2. Add a tiny sprinkling of water to the other 3 bread slices. Don't soak them.
3. Take 1 slice and carefully rub it across your kitchen floor. Try not to break up the bread. Put it into a bag, seal it and label the bag "floor".
4. Repeat step 3 but for different kitchen surfaces, e.g. a shelf in the fridge or the kitchen sink. Each time, seal the bag and label with the surface name.
5. Place all the bags in a cupboard, and leave them for at least 1 week. Take notes and photos of any changes you see to the bread every day. Never open the bags. **At the end of the experiment, put the unopened bags in the bin.**

What happened to the bread?

Which slice had the most microbes?

What does this tell us?