

Science:

This half term we are learning about the basic needs of humans and other animals (hygiene, water, food, air). We will also be learning about the importance of eating a balanced diet.

Lesson 1: Good Hygiene - The Importance of Washing Hands

Key vocabulary: hygiene, germs, Louis Pasteur, experiment, prediction

In this week's Science lesson the children will be learning about the importance of good hygiene. The children will learn about Louis Pasteur and then have the option to take part in different experiments. For 'How Germs Spread' we have included an instruction sheet, for 'Why Soap Works' we have included instructions, a recording sheet and an explanation sheet, and for 'Growing Germs' there is an explanation slide at the end of the lesson. There are also some extra activities the children may like to take part in.

There are videos on these slides for children to watch.

1. Key vocabulary - hygiene, germs, Louis Pasteur, experiment, prediction
2. When do we wash our hands? Why do we wash our hands?
3. Learn about Louis Pasteur, a famous scientist
4. Experiments you can choose from. 'How Germs Spread', 'How Soap Works' and 'Growing Germs'. In the 'Growing Germs' experiment I have used a potato but you could use bread.
5. Optional activities
 1. Make a 'Handwashing Hero' poster. The children could design a hero and explain how they help people to remember to wash their hands.
 2. Make a fact sheet about Louis Pasteur.



Our key vocabulary:

hygiene



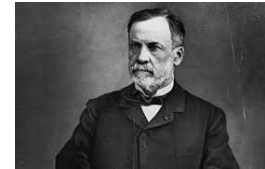
experiment

germs



prediction

Louis Pasteur



When do we wash our hands?

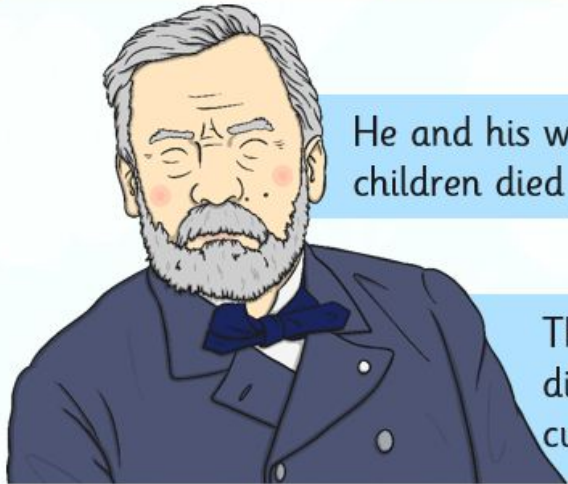


Why do we wash our hands?

Louis Pasteur

Louis Pasteur was born in France in 1822. This is almost 200 years ago!

At school, Louis loved learning about science. He went to college to study science and maths, and when he left college he became a science professor at the university.

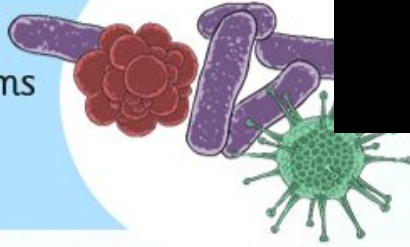


He and his wife, Marie, had 5 children. Sadly, three of their children died from a disease called typhoid.

This made Louis want to find out more about diseases and infections so that he could find a cure, and stop other people dying from illnesses.

Louis Pasteur

At the time Louis was alive, people believed that germs like bacteria just appeared out of nowhere! They knew that germs existed, but thought that they could suddenly appear on a person, making them ill.



Louis carried out some experiments to prove that germs are living things that can spread between objects and people, through touch or through the air.



He used a microscope to see tiny mould germs living on food, and to see germs that cause diseases.

His experiments convinced people that germs do spread diseases, and do not just appear.

How Germs Are Spread

Science Experiment



Method

1. Put a drop of lotion on your hands and rub them together to spread the lotion out evenly.
2. With your hands over newspaper, ask your partner to put a pinch of eco-friendly glitter in the palm of one of your hands.
3. With your hands still over the newspaper, make a fist with the hand that has eco-friendly glitter on it, then spread your fingers out. What do you see?
4. Now press the palms of your hands together and pull them apart. What do you notice about your hands?
5. Touch your partner's hand. Now do you see anything on it?
6. Get a paper towel and use it to wipe your hands clean of all the eco-friendly glitter. Is it working?
7. After using the paper towel, try using soap and water to wash your hands. Did the eco-friendly glitter come off?

You will need:

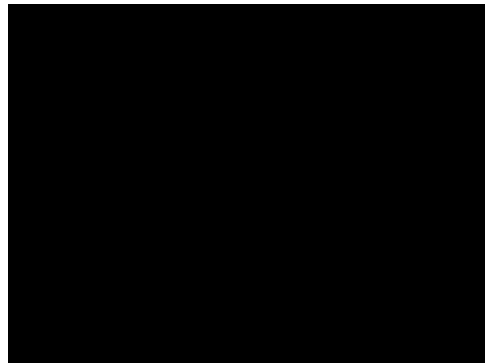
Hand lotion
Eco-friendly Glitter
Sink or large bucket
Newspaper
Paper towels
Soap
Water



Experiment 1

How Germs are Spread

Remember to make a prediction before you start your experiment!



Science Experiment

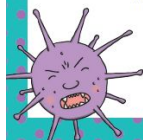
How Germs Are Spread

How can we keep germs from spreading?

Why is it important to wash our hands with soap and water?

Why does the eco-friendly glitter come off after we wash our hands in soap and water?

When should you wash your hands during the day?



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Why Soap Works Experiment

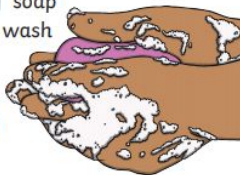
You will need:

- A bowl
- Some water
- A sprinkle of black pepper (or another spice)
- Liquid hand soap
- A hand towel
- A camera (optional)

In this experiment, you are going to find out why soap works and why it is better than using just water to wash your hands.

In the experiment, the surface of the water in the bowl represents your hands. The pepper represents harmful dirt and germs that need to be washed away.

There are two tests in this experiment and they will show you what happens when you wash your hands with and without soap.



Fill the bowl with water, but not all the way to the top.



Sprinkle some black pepper on to the surface of the water. You should see the black pepper floating.



Test 1: Dip your finger into the centre of the bowl of water. Watch what happens to the pepper and record this.

Experiment 2

Why Soap Works

Remember to make a prediction before you start your experiment!



Dry your hand, then dip your finger into the liquid hand soap.



Test 2: Dip your soapy finger into the centre of the bowl of water. Watch what happens to the pepper and record this.

Top Tip

Use a camera to take photos to record what happens to the pepper each time you put your finger into the bowl.

What you will need:

- A teacher
- Gloves
- Potato
- Sharp knife
- 4 sandwich bags
- Masking tape
- Marker pen

Experiment 3

Growing Germs

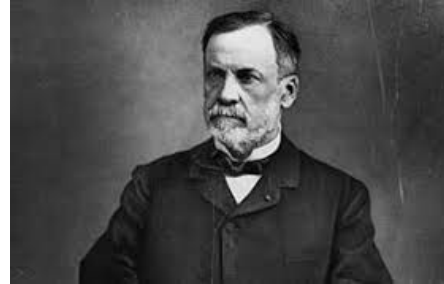
Remember to make a prediction before you start your experiment!

What to Do

1. The teacher must wash their hands, put the gloves on, and then cut the potato into four equal pieces.
2. Take the first potato piece and put it in one of the bags. Seal the bag. Use the marker to write on the masking tape and label this bag as 'control'.
3. Pick a surface such as a sink or the floor and while wearing gloves, rub the second potato piece on it. Place the potato slice in a bag and label it with the surface it was rubbed on.
4. Take the third potato piece outside and lay it in a flower bed, or a puddle. Place the potato slice in a bag and label it with the outside area it was placed in.
5. Finally, touch the fourth potato piece all over with your bare hands. Place the potato slice in a bag and label it 'touched with hands'.
6. Take all four bags and place them in a dark cupboard at room temperature. Leave them there for a week. After a week has passed, pull the bags out and look at the potato pieces (don't take the potatoes out of the bags).

Optional Extra Activities!

1. Make a 'Handwashing Hero' poster. You could design a hero and explain how they help people to remember to wash their hands.
2. Make a fact sheet about Louis Pasteur.



Please remember to send in your Science Selfies! You can e-mail them to the school office or post them on Tapestry. Please say if you are happy for them to be shared in the school newsletter and on our School Website.

Growing Germs Experiment - Explanation

What's Happening?

What can you see on the potato? Is there black, green or white furry stuff?

These are germs called mould or bacteria. The number of germs has grown so much you now don't need a microscope to see them. Which pieces have the most mould on them?

It is probably the pieces handled by you, rubbed on a surface and placed outside. This is because the potato picked up germs from these places. What has happened to the piece that wasn't touched? This probably has the least amount of germs.

This potato piece is the most important because it shows you how many germs already existed there. The other pieces started with this many germs but once they had touched other things the potato picked up more germs.