



Spread of Infection: Hand Hygiene

By taking part in a classroom experiment students will understand how soap or sanitisers work and that hand washing is the best way to remove microbes.

Curriculum Links

Science

Working scientifically, Living things and their habitats

PSHE/RSHE

Health and prevention

English

Reading and comprehension, Writing

Key Words

Hygiene, Soap, Hand washing, Microbes

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Learning Outcomes

All students will:

- Understand washing hands can help remove microbes.
- Understand washing hands is one of the best ways to prevent the spread of microbes.
- Understand washing hands with soap and water is better than washing hands with water alone.



Resources Required

Activity: Pepper and Water Experiment

Per group

- Small plastic bowls
- Water
- Washing up liquid
- Pepper
- Cocktail sticks

Extension Activity: Healthy Hands Fact Sheet

Per student

- SH1 Healthy Hands Fact Sheet

Extension Activity: Hand Washing Flashcards

Per class

- SW1 Hand Washing Flashcards

Extension Activity: Fill in the Blank Worksheet

Per student

- SW2 Healthy Hands Fill in the Blank Worksheet

Advance preparation

Set up a few bowls of water with pepper sprinkled on the surface, a few plain bowls of water, and another bowl with washing up liquid in.

Health and Safety

Ensure that the demonstrating students have no soap allergies or sensitive skin conditions

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

Supporting materials



SH1 Healthy Hands Fact Sheet



SW1 Hand Washing Flashcards



SW2 Healthy Hands Fill in the Blank Worksheet

Lesson Plan



Introduction

1. Begin the lesson by asking the students if they know why we wash our hands. Explain that we wash our hands to not only remove any dirt and grime that we can see, but also to remove germs (microbes) that we cannot see.
2. Explain to students that because we use our hands all the time they pick up millions of germs (microbes) every day. Although many of these are harmless some could be harmful and might make us ill.
3. Explain that our skin is naturally covered in oils and that this oil helps microbes 'stick' to our skin. This means we need to wash our hands properly with both soap and water to be able to wash away the germs from our hands. If no soap is available, hand sanitiser gels can also remove germs from our hands.
4. Explain to the students that they are now going to complete an activity to show them why soap is important when we wash our hands.

Discussion

Can the students answer the question: Why do we use soap to wash our hands?

Discuss where germs (microbes) on their hands may have come from. Emphasise to students here that not all the germs on their hands are harmful; there may also be useful microbes there too.

Discuss what happened with and without the soap with the students. Explain why using soap when you wash your hands is important - because it breaks up the oils on the surface of your hands that microbes stick to, and they can be rinsed away under running water. Without soap, the oils are not removed, and microbes find it easier to stick.

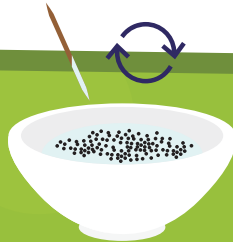
Emphasise to students that we also need to wash hands properly. Highlight that microbes like to hide in between fingers and under the nails. It is important to know both WHEN and HOW to wash hands properly to prevent harmful microbes and potentially infection.

Activity: Pepper and Water Experiment

1 Dip the cocktail stick into the plain water



2 Dip the cocktail stick into the pepper water and swirl the stick around



3 Dip the cocktail stick into the washing up liquid then back into the pepper water



This activity shows how washing with soap and water is better than using water alone. Demonstrators should help students with cocktail sticks to ensure safety. The bowls must be rinsed after each group for this activity to be effective.

1. Explain to the class that the surface of the water in the bowls represents their hands, and that the pepper represents harmful microbes that need to be washed away.
2. Dip the end of a cocktail stick into the plain bowl of water and then into the pepper water. Gently swirl the cocktail stick around and explain that using water to wash your hands only moves the microbes around.
3. Dip the cocktail stick into the bowl of washing up liquid and then into the pepper water.
4. The pepper (microbes) will move towards the edges of the bowl as the soap hits the surface of the water.
5. Explain to the class that the soap breaks up the oil on our hands. The microbes can then be washed away when we rinse the soap off hands with water.

Now visit e-bug.eu/eng/ks1/lesson/Hand-Hygiene to find a NHS demonstration and UKHSA hand washing song to help make the correct technique more memorable for little hands.



Extension activity

Healthy Hands Fact Sheet

Provide each student with a copy of SH1 to consolidate the session. Students can learn and share Healthy Hands facts with family and friends.

Hand Washing Flashcards

SW1 can be used to support learning. Print the sheet and cut out the flashcards, or display on a whiteboard. Ask children to explain the image, the correct words are shown on the card.

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 complete the following sentences with their own answers.

- A song to use when washing my hands is: _____
- I will wash my hands at key moments during the day, for example: _____
- There are ____ steps to wash every part of my hands.
- If I am not able to wash my hands with soap and water, I will use _____





Healthy hands

Fact sheet

What makes our hands dirty?

We get microbes on our hands from everything that we touch like door handles, school desks, the floor or our pets. We also get microbes on our hands when we hold hands, pick our nose or sneeze into our hands.

Why should we wash our hands?

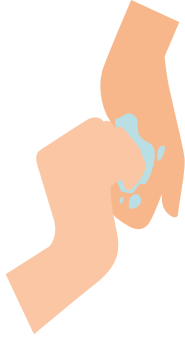
We wash our hands to get rid of harmful microbes that might make us poorly. It is important that we wash our hands after using the toilet, before eating or cooking, after stroking animals or after coughing or sneezing.

Surprise your friends and family with these fun facts!

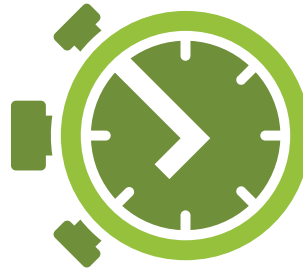
**DID YOU
KNOW?**

- Most microbes on our hands are under our fingernails.
- Nearly everyone says they wash their hands after using the toilet, but more than half don't. Just think what may be on their hands.
- Most toilet handles have 400 times more microbes than the toilet seat.
- There are more microbes on one person's hand than people on the planet.
- Hand washing is the best way to stop microbes spreading.
- Some microbes can stay alive on our hands for up to three hours.





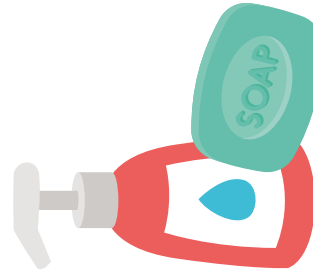
**Back
of fingers**



20 seconds



**Between
fingers**



Soap



**Backs
of hands**



**Tips
of fingers**



**Scrub
your hands**



Thumbs



Turn the



to run the



Put



on your



Rub your



together



Rinse your



with



Turn off the



dry



Throw the paper towel in the

