

When do you have to wash your hands?

1

Tick one or more answer



after touching animals



after using toilet



after playing outside

For each situation you tick can you explain why hand washing is especially important

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after touching animals

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after using the toilet

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after playing outside

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Can you think of any other situations?
Describe them and explain why the hands should be washed then.

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Did the kids act correctly? Explain why they behaved right or wrong:

1. Max is playing with his dog in the garden. When his mother calls him in to dinner he realises how hungry he is and runs straight to the set table in the living room. 'Tasty', he thinks, and immediately reaches for the sandwich.



Yes

No

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2. After playing in the schoolyard, he offered a bite of his snack to his friend.



Right

Wrong

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Are these kids behaving right or wrong?

3. Which kid is behaving right?



Experiment: Why should I wash my hands with soap?

To do this you will need:

A dirty tile

Water

Soap

A towel



1. Either place the towel under the tile, or do the experiment directly over the sink.

2. Now clean only half of the dirty surface with water.

3. Clean the other half with water and soap.

What difference can you see?

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What does hygiene mean?

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Do you know the term 'hygiene'? How would you describe hygiene?
Consider and note down here what comes to mind when you think
about hygiene:

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Now look it up in a dictionary.
How is hygiene explained there?

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Why are clean hands important?

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Some posters are hung around the classroom.
We'd like you to:

1. go up to a poster and read a line of the copy

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2. carefully memorise the words on the first line
on the poster

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3. calmly return to your seat

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4. write the words down on the back
of this sheet of paper

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5. go back up and memorise the second
line on the poster

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6. calmly return to your seat

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7. write the words down on the back of this
sheet of paper

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8. repeat this until you have written down all the
words on the poster



Write your words here

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Share it with your neighbour and check whether you have written everything correctly.



Make your own foam soap!

6

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In this experiment you have to heat things up on a hotplate.
Please always follow the instructions and wait with the heating until the teacher is with you.

To do this you will need:

A hotplate

A pot (enamelled)

A glass with screw top

A wooden spoon

A tablespoon

Salad oil

Sodium bicarbonate

You should never do this
without your teacher!



1. Take the glass with the screw top and add 3 tablespoons of water.
Also add 3 tablespoons of salad oil.

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2. Wash the tablespoon and carefully dry it off. There must not be any more liquid on the spoon! Now add three tablespoons of sodium bicarbonate to the glass with water and salad oil.

3. Close the glass with the screw top and shake it!

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4. Now you can put your mixture in the pot. Together with your teacher you have to heat up the mixture for at least half an hour. Stir over and over again!

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5. You can even rinse the glass and dry it in the mean time!

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6. Once you have heated the mixture, carefully put the pot aside and let it cool down.

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7. After that you can put some of the mixture into a clean glass. Add a bit of warm water.

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8. Now close the glass and shake it!

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9. Now your foam soap is finished! Always remember to wash your hands thoroughly, and with soap or foam soap!

Experiment: Why should you always dry your hands well?

To do this you will need:

A shallow bowl with sand

Water

A towel

1. Wet your hands.

2. Now dry them so that your palms are really dry.

3. Press your palm on the sand.

What happens?

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4. Wash your hands again.

5. Dry your hands, only a little so that they are still moist.

6. Now press your palm on the sand.

What do you notice this time?

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Why should you always dry your hands well?

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Just like the grain of sand,
our hands pick up microbes.
But when hands are really
dry they do not pick up as
many. So always dry your
hands thoroughly!



What are microbes?

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Find a partner and carefully read through the text on page 2:
'What are microbes?'

Then each one of you should think of 3 to 4 questions about this text, which the other person has to answer. Naturally you are allowed to use the text as an aid.



Question 1.

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Answer 1.

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Question 2.

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Answer 2.

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Question 3.



Answer 3.



Question 4.



Answer 4.

The skin as protection against microbes

9

Fill the words listed below in the gaps.

The skin serves as the _____ protective cover. It prevents germs from finding their way into the body and making you _____. You cannot get sick as long as the microbes remain outside the body on the skin. You also have help in the body known as 'body defences', which _____ germs when they find their way into the body. But if you have a _____, germs can enter. That's why you should not eat with dirty hands or _____ on pens and pencils. Lots of germs can also be _____ when someone sneezes. It is best to sneeze in a handkerchief, if need be you can also sneeze on your shoulder or elbow. Because when you _____ in your hands and you shake hands with someone later, you still have many germs on your hands which can then be passed on to the other person.

sneeze plaster transmitted sick
body's wound mouth
chew combat

Where are germs found?

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What should you do if you come into contact with objects many people commonly use and on which there are quite a few germs?

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Draw and describe places and objects on which quite a few germs can be found, and explain why many germs could be there especially.



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What are the ideal conditions for the rapid multiplication of bacteria?

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Draw the family tree and continue it in your booklet.
(Draw circles instead of bacteria!)



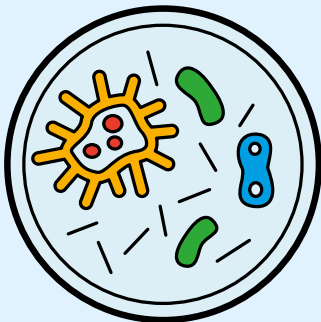
How many bacteria are there:

- a) After 60 minutes?
- b) After 80 minutes?
- c) After 2 hours?
- d) After 3 hours?



This is a particularly tricky task: 128 bacteria are already on a toilet seat. How many are there:

- a) After the third doubling?
- b) After 2 hours?



How and when do bacteria multiply?

You can get a better idea if you do the following experiment:

1. Make a small pellet of paper and put it in a glass.
2. After about 20 minutes there are 2, so throw another pellet of paper in the glass.
3. After about another 20 minutes there are 4, so double the number once again, and so on.



Note down your results in the following table:

How quickly germs multiply and their number increases

Doubling	After...minutes	Number of bacteria
		1
1st doubling	After 20 minutes	
2nd doubling	After 40 minutes	
3rd doubling	After 60 minutes	

After the 10th doubling,
one germ has become
_____ bacteria!



Do you wash your hands properly?

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You can do the following experiment.

To do this you will need:

A sink near you

Soap

Paper towels

Fluorescent lotion

Black light box

Always wash your hands very carefully with soap and water. Drying with paper towels is also important! After all, there should be no microbes on your hand.

1. Cream your hands thoroughly with fluorescent lotion. Make sure to rub every spot with the fluorescent lotion! Also remember the fingertips, the backs of the hands and the spots between the fingers.

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2. Now hold your hands in the black light box. Your hands glow wherever there is fluorescent lotion!

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3. Now wash your hands with soap at the sink. Dry your hands thoroughly with paper towels afterwards!

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4. Look at your hands again under the black light. Are your hands still glowing? You have not thoroughly washed your hands on the glowing spots! Germs can romp around and multiply on these spots!



Search for microbes

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Microbes are hidden in the various spots in the pictures.
Can you find all the microbes? Colour the microbes red.
Next to the pictures, write wherever microbes can hide.



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You can do the following experiment.

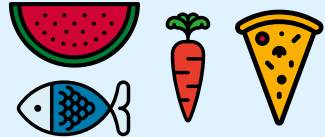
To do this you will need:

A rubber chicken

A few food items made of plastic

Some play money

A black light lamp + fluorescent lotion



1. Put together a market stand where you will sell the chicken and various food items.

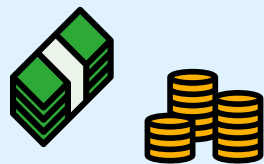
2. Divide the money fairly in your group.

3. Now you can all choose a role! One of you can play the salesperson standing at the market stand. Another can play a customer who wants to buy a few food items. In turn, another person can play another customer who wants to buy the chicken. You can also choose your own roles! For example, you can be a friend who greets the customers with a handshake! Or someone can even play the part of a thief who steals the chicken from the customer!

4. Put fluorescent lotion on the chicken or on the sales man's hands or whomever you choose.

5. Once you have finished playing your role, darken the room. Lower the roller blinds or draw the curtains in front of the window for this purpose.

6. Now turn the black light lamp on. Afterwards, when everything is dark, light up your hands and the objects with the lamp! Now turn off the light! Surely you have discovered numerous glowing spots, maybe even on your hand and on your money! Where do these glowing spots come from? And what do these glowing spots mean? Ask your teacher and talk about it!



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Now you have learned all about hand hygiene and microbes! Look for a partner – you could also do this in a threesome – and make a poster on the subject of ‘hand hygiene’, on which you once again summarize the most important things for those who are still not experts in terms of hand hygiene.

Get your creativity flowing by using images on the subject and creating a collage for example, or using markers and crayons to create colourful drawings on the subject.

Do not forget to mention:

What hand hygiene means?

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Why hand washing is important?

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Why you should thoroughly dry your hands?

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When you should absolutely wash your hands?

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Check to see what other important things you can mention with your work assignments.

Then you can exhibit the posters in your school hallway so that your schoolmates can also learn something about hand hygiene.

Have fun!

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Explanation of technical terms

Bacteria

Bacteria are tiny living organisms. There are many, many bacteria all over the world. Bacteria swim in water, float in the air and are on the skin or ground.

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Discuss

To discuss means to speak seriously about something. Everyone is allowed to give their opinion and must explain this. But you may not argue while discussing!

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Enamel

Enamel is a special layer on pots or washbasins. Some pots or washbasins are made entirely of enamel. Enamel has special features.

For example, water drips of enamel.

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Experiment

Experiments are attempts with which a person can learn something. Usually a person answers a question with experiments.

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Experts

Experts are people who know a great deal about a subject. For example, your teacher is an expert in education.

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Hygiene means beneficial to health

Everything that is good for health.

Sodium bicarbonate

Sodium bicarbonate is a white powder. Some people use sodium bicarbonate in the kitchen in food or for cleaning. Some people also call sodium bicarbonate “baking soda”.

Microbe

Microbes are tiny organisms; for example, very small fungi, bacteria or viruses. Microbes are everywhere – on the ground, on tables and even on the skin. Some microbes can make a person sick.

Black light

Black light is special light. Black light looks purple in the dark. Some objects light up when it is dark and they are lit up with black light.

Family tree

Family trees represent families. In family trees, a person can see who their siblings are or who their great-great-great grandfather was!

Virus

Viruses are very, very small particles. Viruses themselves are not alive, but need another living organism for this; for example, a bacterium or a human. A person can become ill if several viruses are in them.

Washing lotion

Washing lotion is a liquid form of soap to wash hands and remove all microbes.