

### LEARNING OBJECTIVES



*By the end of  
the lesson, you  
will be able to:*

- explain how good personal hygiene, clean water and clean living conditions contribute to good health and prevention of disease;
- evaluate your personal hygiene habits and living conditions and take steps to improve them;
- describe the water quality and sanitary conditions in your community and make suggestions for improvement.

### Lesson 11

## Keeping ourselves, our water and our surroundings clean

### LESSON OVERVIEW



This lesson is about how good personal hygiene, safe water and clean living conditions contribute to good health and prevention of disease. It describes good habits and practices to follow to keep ourselves and our surroundings clean and free from harmful germs. It begins with a discussion of how to prevent the spread of germs and infectious diseases through good hand washing, bathing and other personal hygiene practices. It then discusses the importance of clean water for life and good health. It describes how to protect water from contamination and explains some simple ways to make water safe to drink. Finally, it discusses how unsanitary conditions in the home and in the community affect our health and provides some examples of good practices to follow to keep the spaces we live in clean.



**Part 1**

# Personal hygiene: keeping our bodies clean



## READING

GermS are very tiny creatures (organisms) that live all around us. They are too small to be seen by the human eye. GermS live in the soil, on all surfaces, on our skin, in our bodies, and in the intestinal tracks of people and animals. GermS are alive and grow and multiply with food, water, time and warmth.

GermS are spread easily in many different ways. They are spread through the air, through hands and through body fluids such as saliva and blood. GermS can get inside any opening of the body- eyes, ears, nose, mouth, genitals, cuts and wounds- and they are easily transferred from one area of the body to another. GermS are also spread through water, food and insects.

Most germS are not harmful. Many germS are beneficial to us; in our bodies, some germS help us digest food and help keep us healthy. Some “good” germS also help make certain foods, such as cheese and yoghurt. Some germS are used to make vaccines against certain diseases and medicines, such as the antibiotic penicillin, which saves many lives by killing harmful bacteria.

However, some germS can be very harmful if they get into our foods, our water and enter our bodies and are allowed to grow. Any opening into the body (eyes, ears, nose, mouth) provides an opportunity for germS to enter and cause disease. The common cold and flu, diarrhoea, and serious diseases such as cholera and tuberculosis are caused by harmful germS. These diseases spread by germS are called “infectious” diseases because they enter the body, “infect” us and then are spread to other people who also become “infected”. These germS are spread easily from person to person. For example, cholera, an infection caused by bacteria in the small intestine, occurs mainly by drinking water or eating food that has been contaminated by faeces from an infected person. Tuberculosis, an infectious disease primarily attacking the lungs, is spread through the air from person to person when a contaminated person coughs or sneezes. Both cholera and tuberculosis affect millions of people worldwide, often resulting in death.

Our bodies have a natural defence system against many harmful germS. The skin acts as a strong barrier against the entry of germS into the body. The stomach has a harsh, acidic environment that is too strong for most germS to survive and grow. When the body’s immune system is strong and functioning well, germS that get into the body can usually be destroyed.

### TO THINK ABOUT WHILE READING



How do we get  
germS that  
cause disease?

How can keeping  
our bodies clean  
improve  
our health?

How do  
your personal  
hygiene habits  
affect  
your health?



All people are exposed to germs and therefore are at risk of infections caused by germs. Some people, however, are particularly vulnerable to infections from harmful germs and need to be especially careful to prevent minor infections from becoming serious.

People who need to be especially careful are:

*Children, especially newborn babies.* A fragile immune system at birth and a lack of vaccination against certain diseases make newborn babies very vulnerable to infections caused by germs. Care should be taken to protect them from being exposed to harmful germs. Breastfeeding will increase a baby's resistance to certain diseases, as the mother passes on her own immune factors through her milk to the baby.

*Pregnant women.* During pregnancy, it is important to avoid infections and illnesses that can be harmful to the health and development of the unborn baby.

*People with a weak immune system or poor nutritional status.* When people are ill, malnourished or in poor health, their immune systems are weakened and may not be strong enough to defend against disease. This makes them more susceptible to the attacks of harmful germs. It is important to help them avoid infection.



**For more information,** see Fact sheet [The truth about germs.](#)

Personal hygiene – the practice of caring for the body through cleaning and grooming – helps prevent the spread of harmful germs and diseases. Keeping the body clean also helps prevent body odour and the accumulation of dirt. Good personal hygiene habits should always be practised to help keep ourselves and the people around us healthy.

One of the most effective ways to help prevent the spread of germs is good and frequent hand washing. Hands are a primary source of germs. They carry millions of germs that we cannot see and can easily pass to everything and everyone we touch. We can help protect ourselves and others from diarrhoea, cholera, intestinal worms, flu, eye infections and many other infections caused by harmful germs through good hand washing. Hands should be washed often, and always after using the toilet, before eating and preparing food, after changing babies, tending to people who are ill, handling rubbish and touching animals. Wetting hands with water is not enough to remove all the dirt and germs from the hands. Hands should be washed with soap and clean water, rubbing thoroughly outside the stream of water for at least 20 seconds, then rinsed under clean running water and dried with a clean towel.



**For more information,** see Fact sheet [12 steps to good hand washing.](#)



A dirty body encourages the growth of germs. Dust, sweat, body fluids and warmth all encourage germs to grow and multiply. Regular bathing with clean water and soap removes dirt, dead skin and sweat. It helps prevent skin irritations and infections by removing germs and cleaning wounds. It also prevents unwanted body odour and creates a feeling of well-being, cleanliness and comfort. Girls and women should maintain a high level of hygiene during menstruation to avoid infections.

Many germs live and multiply in the mouth. Good oral hygiene, especially frequent teeth brushing and cleaning, limits the spread of bacteria that can cause tooth decay, tooth loss, gum disease, ulcers and other mouth infections. The nose is also a good place for germs to hide and multiply. Good practices for nose blowing, coughing and sneezing will help limit the spread of germs.



**For more information,** see Fact sheet *Keeping yourself clean and free from germs.*

Dirty (contaminated) water and spoilt food also spread harmful germs and bacteria. It is important to protect our health by using safe, clean water for drinking, cooking and washing and by keeping our food safe and free from insects, pests and harmful bacteria.



**For more information,** see Part 2 *Clean and safe water.*

Good nutrition can improve the body's resistance to diseases caused by harmful germs. It keeps the body's natural defence system strong and functioning well. A strong immune system can usually destroy harmful germs that get into the body.



### **MATERIALS**



Fact sheet *The truth about germs*



Quiz work sheet *Germs: true or false?*



Fact sheet *12 steps to good hand washing*



Match it work sheet *Proper hand washing*



Ask yourself work sheet *My personal hygiene*



Fact sheet *Keeping yourself clean and free from germs*



## ACTIVITIES

### Germ: true or false?



Take this quick *quiz* to check your understanding of some basic facts about germs. Look for hints on the Fact sheet *The truth about germs*.

### Spreading the germs

The aim of this activity is to demonstrate how hands easily spread germs from person to person.

*If working in a group*, invite two or three volunteers and put a few drops of oil or lotion on the palms of their hands. Ask them to rub their palms together to spread the oil.

Then spread a small amount of glitter on their palms. (In place of glitter: sand, earth, salt, sugar, finger paint or food colouring can be used).

Ask the volunteers to shake hands with several others in the group, who should then shake hands with others.

Stop the game when everybody's hands have been touched. Tell the group that the glitter represent germs and discuss the following:

What happened when you shook hands?

Did any player accidentally touch his face, mouth, nose? Can you see glitter in those areas?

What happens when you touch people or objects with dirty hands?

What should you do to stop passing the germs on?



Review the *12 steps to good hand washing* Fact sheet and if possible, have all players wash their hands following the 12 steps.

*If working individually*, follow the same steps above with your friends or family. You can also touch commonly used objects around the house to see how the glitter passes from hands to objects and then to other hands as other people in the house touch the objects. Review the *12 steps to good hand washing* Fact sheet and wash your hands following the 12 steps.



### Proper hand washing



Are you sure you wash your hands properly? Go to the Work sheet *Proper hand washing* to see if you can match the hand washing practices with their correct endings. Do you follow these practices?

### My personal hygiene



Do you think you have good personal hygiene habits? Use the Ask yourself work sheet *My personal hygiene* to record everything you do to keep yourself clean and free from germs. Then make a plan to improve your personal hygiene habits.



### KEY POINTS

**Review these three key points** to remember about the importance of keeping clean.

See how you can apply this knowledge to improve your own washing and grooming habits and to protect you and your family from germs.

- Germs are invisible living organisms that can be found everywhere, including our own body. While many germs are not harmful, some germs can be very harmful if they get into our foods, our water or our bodies.
- Everyone needs to be protected from harmful germs. Babies, pregnant women and people with a weak immune system are even more vulnerable to infections caused by harmful germs. Special efforts should be made to protect them and to avoid passing germs to them.
- Keeping our bodies clean and protecting ourselves from harmful germs is an important part of keeping well and healthy. Frequent and proper hand washing, bathing, teeth cleaning and other personal hygiene practices can help protect us from some diseases caused by germs and can help prevent spreading germs to others.



## Part 2

# Clean and safe water



## READING

**Water is essential for life.** People, animals and plants all need water to live and to grow. Water is so important to human life that we can survive only a few days without it. Water makes up a large part of the human body. It is a vital component of all body fluids, tissues and cells. Water composes about 70 percent of the brain, 83 percent of blood and 90 percent of the lungs. Water is essential to many functions in the body. It helps carry oxygen and nutrients to cells, regulates body temperature, allows better blood circulation, protects vital organs, keeps tissues and joints moist and removes waste. When the tissues and cells are well supplied with water, they can fight infections more efficiently.

A person needs 2–4 litres of water every day to replace the fluids lost through breathing, sweating, urination and other body processes. These can be replenished by drinking water and other liquids and eating foods with high water content. When a person does not get enough water or loses too much water, for example due to fever or diarrhoea, the body becomes dehydrated (dried out). Severe dehydration can result in death.

**Without clean water for drinking and for proper hygiene, it is difficult to reduce the spread and impact of many serious and life-threatening diseases.** Many communities rely on water from rivers, streams, lakes and ponds as their only source of drinking water. Often the water that is available is not safe to drink. An estimated 1 billion people in the world do not have access to enough fresh, clean water to meet their basic needs and 2.6 billion do not have enough water for proper sanitation. Every day, nearly 4,000 children die from diseases associated with unsafe drinking water and poor sanitation.

Contaminated (not clean) drinking water can lead to many serious diseases such as diarrhoea, cholera, typhoid, dysentery, worm infections, malaria, hepatitis and trachoma (an eye infection that can lead to blindness). Drinking water polluted with chemicals and pesticides can also lead to a number of serious diseases, including some cancers. A reliable supply of safe water can mean the difference between life and death. In hospitals, clinics and other places where sick people get care, lack of water for proper hygiene can allow infection to spread from person to person. Health problems resulting from a scarce supply of water or from unclean water

### TO THINK ABOUT WHILE READING



How important  
is water for life?

How many people  
in the world  
do not have clean  
drinking water?

What can happen  
when a person  
drinks water  
that is not clean?





can be especially dangerous to people who are already affected by chronic or life-threatening illnesses, such as HIV/AIDS.



**See** Fact sheet *Health problems from unsafe water* for more information on illnesses caused by unclean water.

**Problems of access to water affect many people in many parts of the world.** An estimated 40 percent of the world's population is affected by water shortages. Half of all poor people live in the driest areas of the world. By the year 2025, 1.8 billion people will be living in countries or regions with serious water shortages and about two-thirds of the world's population could be living under water-stressed conditions. Fresh water is a limited resource and its availability is being affected by many factors, including the need for water to provide food for a growing population, climate change, environmental pollution and poor use and management of water resources. Fair and affordable prices for water services and equitable distribution of water for irrigation, industry and family use are very important for ensuring adequate access to water.

Lack of adequate water holds back the economic and agricultural development of a community, limiting people's ability to produce their own food or earn enough income for an adequate standard of living. For farmers and their families, an inadequate water supply means hunger when drought causes crops to fail. Lack of water limits the ability to operate industries and provide sufficient energy.

**Water is vital for producing food.** Lack of adequate water limits our ability to produce enough food to feed the world's population. Agriculture is the number-one user of water worldwide, accounting for about 70 percent of all fresh water drawn from lakes, rivers and underground water supplies (aquifers). On average, it takes about 5 000 litres of water to produce food for one person every day. Water is needed to irrigate crops in areas where rainfall is not sufficient. Plants need large amounts of water to grow and develop properly. For example, about 1 000 litres of water are needed to produce one kilogram of wheat.

Water is also needed to water livestock and to grow animal feed. Animals raised on irrigated grain require more water than those raised on rainfed grazing land. Water is needed for fish farming, or aquaculture. Fish can be farmed both in saltwater and in freshwater lakes, rivers, ponds and tanks. Nearly half of all fish eaten in the world today is produced on fish farms. Water plays a central role in food processing and preparation. It is used for cooking, boiling, steaming, washing, cooling and preserving food.

**Water sources must be protected to keep them clean and safe to use.** Water sources must be protected from many serious threats to cleanliness and safety, such as human and animal wastes, poorly built sanitation systems, leaking sewer pipes, rubbish dumps, industrial pollution, pesticides and fertilizers. People, communities, government and private agencies must work together to





ensure an adequate supply of safe water. Community members should be actively involved in selecting the type of water supply and have access to information that allows them to make informed decisions. When a community has a water supply that is accessible and safe, everyone's health is improved.

If there is any chance that water has been contaminated, it must be treated to make it safe to drink. Surface water from ponds, streams, lakes and rivers must always be treated before drinking. Boiling water or treating water with chlorine (disinfecting) are two common and effective ways to make water safe to use. Boiling water for a few minutes destroys most types of germs that can cause disease. If it is not possible to boil water, disinfecting water with chlorine will kill most bacteria and some viruses that may cause disease.



**See** Fact sheet *Easy ways to make water safe to drink* for more details on how to disinfect water.







**Some actions that can be taken to prevent the contamination of ponds, streams, lakes and rivers are:** keeping people and animals from urinating and defecating in or near water; keeping animals out of water sources; disposing of rubbish and trash properly and not in or near the water; treating and disposing properly wastewater and toxic products; fixing or replacing broken or leaking pipes and tanks as soon as they are broken; and building steps or ramps at the water's edge to encourage people not to walk into the pond or lake when collecting water.

**Some actions that can be taken to prevent contamination of groundwater sources such as wells, springs and boreholes are:** keeping water sources covered at all times; using only clean buckets or scoops to draw water and fill other containers; washing hands properly before collecting water; avoiding stepping into the water or touching it with hands while collecting it; building a fence to keep animals out; making sure that no surface water can run directly into water sources by lining them with bricks or concrete rings; digging a drainage canal to allow spilled water to flow away without causing puddles; and keeping latrines, rubbish dumps and other sources of contamination far away.

**Some actions to store water safely and keep it clean in the home are:** never store water in containers that have been used for pesticides or chemicals, even if they have been cleaned; use only clean containers and water bottles to store water and clean the containers regularly; cover water containers to keep dust, insects, animals and other contaminants from getting into the water; keep water containers off the floor and away from animals; pour water without touching the mouth of the container, or use a clean, long-handled scoop to take out water; dry all water spills to avoid breeding grounds for mosquitoes that are carriers of malaria, dengue fever and other diseases.



## MATERIALS

-  Fact sheet *Basic facts about water*
-  Match it work sheet *Water facts matching*
-  Fact sheet *Easy ways to make water safe to drink*
-  Fact sheet *Health problems from unsafe water*
-  Ask yourself work sheet *How clean is my water?*
-  Into the field work sheet *How good is your community water supply?*



## ACTIVITIES

### Water facts matching



How much do you know about water? Go to the Match it work sheet *Water facts matching* to test your knowledge of some basic water facts. Can you match each fact with its correct ending?

### Learn how to filter water

Take a clear bottle or glass and fill it with muddy, cloudy water. You can make muddy water by adding mud, earth or sand to clear water. Let it stand for some time so that the solid material sinks to the bottom. In the meantime, make a cloth filter by folding a clean cloth several times and tying it over the mouth of another clear, clean bottle, glass or container for water. Take the water you let stand and pour it slowly through the filter and into the clean bottle without disturbing the sediment (solid material) at the bottom. Remove the filter carefully and observe the water. It should be clearer than it was before filtering. Settling and filtering water in this manner helps reduce the number of germs and makes water safer, but not completely free from germs. Many germs invisible to the eye will remain in the water.



See Fact sheet *Easy ways to make water safe to drink* for more details.

### Learn how to disinfect water

Take 1 litre of filtered water and add 2 drops of household chlorine bleach. Mix it with a clean spoon or shake the container gently to mix. Cover the water and bleach mixture and let stand for 30 minutes. Smell the water. It should have a



slight chlorine smell. If it does not, add another drop or two of chlorine and allow it to stand for an additional 15 minutes. If the treated water has too strong a chlorine smell, pour it back and forth several times from one clean container into another. The chlorine will have killed most of the bacteria and some viruses that may cause disease and the treated water should now be safe to use.



See Fact sheet *Easy ways to make water safe to drink* for more details.

## How clean is your water?



Use the Ask yourself work sheet *How clean is my water?* to conduct a survey of your water supply at home. Is your water safe? Do you collect and store it properly? What can be improved? Make a plan to improve the quality of your water and protect your family from diseases that are caused by contaminated water.

## How good is your community water supply?



Use the Into the field work sheet *How good is your community water supply?* to evaluate the water supply in your community and make suggestions for improvements. Interview your family, neighbours, health workers, teachers and authorities about the quality of the local water supply. Is it safe? Is it enough for everyone? Does it affect people's health? Are there any cases of diseases caused by contaminated water? Share the results of your investigation and suggest actions that should be taken to improve your community water supply.



### KEY POINTS

**Review these three key points** to remember about the importance of water for life and health. See how you can apply this knowledge to keep your water clean and safe for drinking, cooking and bathing.

- Water is essential for life and good health. People, animals and plants cannot live and grow without water. A person needs 2–4 litres of clean drinking water a day to replace fluids lost through different body processes.
- Contaminated water can cause many illnesses. Diarrhoea, cholera, typhoid, dysentery, worm infections and other diseases are easily spread to people by unclean water.
- All sources of water need to be protected from contamination. Water that is not clean and safe must be treated before using it for drinking, cooking or bathing. Boiling or chlorinating water are two effective ways to disinfect water in the home.



### Part 3

## Clean living conditions



### READING

Where we live and the conditions in which we live affect our health. Poor living conditions in the home and in the community encourage the growth and spread of many germs that cause disease. Keeping the places we live in and the spaces around us clean and free from harmful germs and contaminants is just as important for good health as keeping our body and our water clean.

About 2.4 billion people around the world live in unhealthy, unsanitary conditions. They do not have good housing or access to clean water, adequate sanitation facilities and proper rubbish collection and disposal. In addition, many everyday habits and practices are unsafe and contribute to an unhealthy environment. The lack of basic facilities and services, especially when combined with poor hygiene habits, greatly increases the spread of many serious infectious diseases. In many countries, diseases related to poor sanitation are among the major causes of death.

One of the most serious threats to people's health is poor disposal of human waste. Human waste carries very harmful bacterial and viral diseases and parasites. If waste is deposited in the open, close to populated areas or near people's homes, it can spread disease easily. Open defecation is a very dangerous practice. When people defecate in the open, flies and other pests feed on the faeces, carry germs on their feet and pass them on to people, surfaces and food. Faeces left in the open can be washed by rain into wells, streams and other sources of water that people use for drinking and for bathing. When adequate toilet facilities or latrines are not available for the safe disposal of human waste, people need to bury their waste safely, so that it does not contaminate people, animals and water sources. Indoor and outdoor toilet facilities need to be kept clean and free from germs to avoid spreading disease.

Poor removal and disposal of household rubbish and trash is also a threat to people's health. When rubbish piles up around people's homes, insects, rodents and other pests that can spread disease are attracted. Rubbish dumped into rivers, lakes and other water sources will contaminate the water and spread disease. In addition to being a health risk, rubbish that is allowed to accumulate in and around where we live, work and play is unsightly, smelly, and degrades the quality of life. Communities should have a good system for the regular collection and proper disposal of household rubbish and trash. It is

#### TO THINK ABOUT WHILE READING



What do we mean  
by clean living  
conditions?

How can  
conditions at  
home and in the  
community affect  
our health?

What can we do  
to keep our homes  
and surroundings  
clean?



especially important to have adequate rubbish collection at public places such as schools, hospitals, markets and all places where large numbers of people meet and where food is sold, handled or eaten.

When regular collection is not provided, families need to keep their homes and the spaces they live in free from rubbish and trash by taking them to communal containers or directly to the disposal site. Communal rubbish dumps should be constructed away from houses and water sources and should be managed by people who are trained to deal with waste safely. Dumps can be a source of disease if they are not properly constructed and treated to prevent the spread of germs.

**Incorrect disposal of hazardous household waste materials can be a serious threat to humans, animals, plants and the environment.**

Many common household products, such as paints, pesticides, motor oil, ammonia, bleach, cleaning solutions and detergents, batteries, prescription medicines and electronics, contain dangerous chemicals that should not be released into the environment. These materials need to be disposed of at special sites and should never be left in the open or dumped into the air, soil or water.

Small quantities of hazardous substances can accumulate over time to reach dangerous levels and contaminate the air, water and soil. Others can have a more immediate effect, such as poisoning. Pesticides, fertilizers and other products can run off gardens into drains and streams, polluting fresh water. Solvents can escape to the atmosphere from the normal use of cleaners, paints and aerosol sprays, as well as accidental spills or improper disposal. These substances pollute the air and can also return to earth as rain, further polluting water and soil. Chemicals from hazardous wastes buried in unsecured landfills can seep out and move through the soil, eventually entering groundwater. From there, contaminants can spread to wells or surface water, making it unsafe to drink. These substances all require special handling for detoxification or safe disposal. If treated properly, most of this waste can be recycled into new products.



See Fact sheet *Basic practices for a clean and safe community* for more information.

**Good household cleaning will reduce the spread of germs and help protect the family from disease.** Regular and frequent cleaning will prevent the build-up of dirt, germs, moulds and insects that can cause illness and disease. It is important to keep all areas of the house clean, but it is especially important to keep the kitchen and eating areas and toilet and bathing facilities clean. These are the areas where germs and bacteria grow and spread most easily. Toilet and bathing facilities need to be cleaned very often to prevent the spread of germs from dirty hands and human waste. Washbasins, bathtubs and toilets should be cleaned with disinfectants. All bathroom trash should be removed and disposed of properly, including baby's diapers.

Food storage, preparation, cooking and eating areas should be cleaned after every meal. Floors should be swept and mopped, kitchen rubbish should be



removed. All surfaces and utensils should be thoroughly washed with soap and clean water or with disinfectants that kill many types of germs.

All cloths, sponges, rags, mops and other articles used for cleaning should be washed and changed as they become soiled. Use different cleaning cloths for different rooms and areas and replace them often.







★ See [Lesson 8](#) for more information on preparing and storing foods safely at home.

Keeping the air fresh in the house will help reduce moisture and humidity which encourage the growth of mould and the breeding of insects. Opening windows and doors to let in fresh air will clear the air of wood and tobacco smoke and fumes from gas-burning furnaces and cookers. Smoke from solid cooking fuels such as wood, charcoal and animal dung, can lead to respiratory and eye infections and other health problems. Dust can lead to respiratory problems and can be dangerous for people with allergies, asthma and other breathing problems. A dusty environment and poor circulation of fresh air in the house (ventilation) make the spread of tuberculosis (an infectious disease primarily attacking the lungs) easier. Changing the air frequently and keeping the house free from dust can help reduce and prevent these problems.

★ See Fact sheet [Basic practices for a clean and safe home](#) for more information.




### MATERIALS

-  Quiz work sheet *Clean living conditions: true or false?*
-  Fact sheet *Basic practices for a clean and safe home*
-  Fact sheet *Basic practices for a clean and safe community*
-  Ask yourself work sheet *Home inspection*
-  Into the field work sheet *Investigation: How clean and safe is my school?*
-  Into the field work sheet *How clean is my community?*



### ACTIVITIES

#### Clean living conditions: true or false?

-  What do we mean by good living conditions? Take this [quiz](#) to check your understanding of some basic facts about household and community hygiene. Look for hints in the Fact sheet [Basic practices for a clean and safe home](#) and Fact sheet [Basic practices for a clean and safe community](#).





## Home inspection



Use the Ask yourself work sheet *Home inspection* to inspect your living conditions at home. Record everything you do to keep your home clean and free from germs. Do you clean your house properly? Do you dispose of waste correctly? Are there any insects and pests that can put your health at risk? Make a plan to improve your household hygiene habits and to protect your family from germs and pests that cause disease. Discuss the plan with your family and try to follow it.

## Is my school clean and safe?



Use the Into the field work sheet *Investigation: How clean and safe is my school?* to inspect your school and make suggestions for improvements. Observe your school building, classrooms, toilets, kitchen, eating area, rubbish bins and containers, school yard. Is your school clean? Is it big enough for all the students? Are the toilets safe? Are there any cases of diseases caused by poor sanitation? Discuss these questions with your classmates and decide what can be done to improve the conditions at your school. Share the results of your investigation with your parents and teachers and suggest actions that should be taken.

## How clean is my community?



Use the Into the field work sheet *How clean is my community* to inspect your community. Are the streets clean? Is the rubbish collected regularly? Are public places – market, station, health centre – tidy and safe? Are there any health problems in your community caused by dirty surroundings and poor living conditions? Share the results of your investigation with your parents and neighbours and suggest actions that should be taken to improve your neighbourhood.



### KEY POINTS

**Review these three key points** to remember about how the conditions we live in affect our health. See how you can apply this knowledge to protect yourself and your family from serious diseases spread by germs.

- Clean living conditions, sanitary toilet facilities and proper waste disposal are essential for our health and well-being. They promote good health and help prevent disease.
- Keeping our houses clean and disposing of our waste safely is an important part of staying healthy. Washing kitchen surfaces with soap, disinfecting toilets, dusting, changing the air, and other good cleaning practices can help prevent diseases caused by germs.
- Communities should have a system for proper waste removal, deposit and treatment to protect people's health and keep the environment clean and safe.



# The truth about germs

**Did you know that many diseases are caused by germs?**

**Here are some facts you should know to help protect yourself from harmful germs and to reduce the risk of disease.**

- 1. What are germs?** Germs are very tiny living creatures (organisms) invisible to the human eye. They grow and multiply rapidly with food, water, time and warmth. There are many types of germs; the word "germ" is used to describe all the different types of microscopic living things.
- 2. Where are germs found?** They can be found everywhere: in the air, water, soil, food, plants and on all surfaces, including our own body. They can live for hours on the skin and hands and on many surfaces and objects.
- 3. How are germs spread?** Germs are spread easily in many different ways:
- We can breathe them in from the air; for example, if a sick person coughs or sneezes nearby.
  - Germs get on our hands when we touch things.
  - Germs can spread through body fluids like saliva and blood.
  - Germs can spread through food that is improperly handled, cooked or stored.
  - They are spread through drinking or using contaminated water, if harmful germs are passed into the water supply.
  - Flies, mice, cockroaches and other pests spread germs through contact with faeces and rubbish. Malaria germs are spread by mosquitoes.
  - Germs are also transferred from one area of the body to another. They can get inside the body through any opening (eyes, ears, nose, mouth, genitals, cuts, punctures). Hands and humid areas of the body have the highest number of germs. Tattoos and body piercing are also very susceptible to infections caused by germs.

*Continued*



**4. How do germs affect our health?**

Most germs are not harmful. Some are even beneficial to our health. They live in our bodies and help us use the nutrients in the food we eat and make waste from what is left over. Some “good” germs also help make medicines and certain foods, such as cheese and yoghurt.

However, some germs can be very harmful to health. When they get inside the body they can multiply and cause infections that can put our health and life in danger. Here is a list of the top ten most dangerous infectious diseases:

1. Respiratory infections (including influenza)
2. HIV/AIDS
3. Diarrhoeal diseases (including cholera)
4. Tuberculosis
5. Malaria
6. Measles
7. Whooping cough
8. Tetanus
9. Meningitis
10. Syphilis

**5. Who is at risk of the harmful effects of germs?**

Everyone is exposed to germs and therefore is at risk of infections caused by germs. Some people are more vulnerable and need to be especially careful to avoid harmful germs:

- Pregnant women
- People with a weak immune system
- Children, especially newborn babies
- People with poor nutritional status

**6. How can we protect ourselves against germs and reduce their spread?****Keep clean**

- Wash hands regularly with soap and clean running water. This should always be done after using the toilet, before eating and preparing food, after changing babies, handling rubbish and touching anything that could have germs.
- Bathe or shower regularly. Wear clean clothes and change underwear daily.
- Brush teeth after every meal.
- Use clean paper tissues for nose blowing and to catch coughs and sneezes.
- Safely dispose used paper tissues and cloths and bandages used for cuts and wounds.

**Use safe clean water** for drinking, cooking and washing.

**Protect the quality and safety of food.** Store, handle and cook food properly. Keep it clean and free from insects, pests and harmful bacteria.

*Continued*



6. (Cont.) How can we protect ourselves against germs and reduce their spread?

**Maintain good nutritional status.** Good nutrition can improve the body's resistance to diseases caused by harmful germs. It keeps the body's natural defence system strong and functioning. A strong immune system can usually destroy harmful germs that get into the body.

7. What types of germs are there?

There are many different kinds of germs, but the four major types are: bacteria, viruses, fungi and protozoa.

**Bacteria** are tiny one-celled creatures that live off their environments. In some cases that environment is a human body. Bacteria can reproduce outside the body or within the body, causing infections. Some infections caused by bacteria include sore throats, ear infections, dental cavities, pneumonia, cholera and tuberculosis.

**Viruses** need to be inside living cells to grow and reproduce. Most viruses can't survive very long if they're not inside a plant, animal, or person. Whatever a virus lives in is called its host. Some viruses are spread by simple contact – saliva, coughing or sneezing. Some are spread through sexual contact and some are spread through contaminated blood, water or insects. Viruses cause many diseases, including chickenpox, measles, flu, viral hepatitis, herpes, polio and smallpox. HIV is a virus passed through sexual contact and by exposure to infected blood.

**Fungi** are multi-celled, plant-like organisms. Unlike other plants, fungi cannot make their own food from soil, water, and air. Instead, fungi get their nutrition from plants, people, and animals. They live in damp, warm places, and many fungi are not dangerous in healthy people. Some common fungal infections are athlete's foot (a rash between the toes), genital yeast infections and ringworm. The antibiotic medicine penicillin, which kills harmful bacteria, is made from fungi.

**Protozoa** are one-cell organisms that love moisture and often spread diseases through contaminated water. Some protozoa cause intestinal infections that lead to diarrhoea, nausea and stomach pain.

Use this fact sheet to complete the quiz  
Germs: true or false?



# Germs: true or false?

How much do you know about germs? Test your knowledge of some basic facts about germs.

	True	False
1. Germs live everywhere: in the air, water, soil, on all objects and surfaces, on our skin and in our body.	<input type="checkbox"/>	<input type="checkbox"/>
2. Germs are too small to be seen.	<input type="checkbox"/>	<input type="checkbox"/>
3. All germs are harmful.	<input type="checkbox"/>	<input type="checkbox"/>
4. Germs can enter the body through any opening: eyes, ears, nose, mouth, genitals, cuts and open wounds.	<input type="checkbox"/>	<input type="checkbox"/>
5. When harmful germs get inside the body they can spread and cause infections.	<input type="checkbox"/>	<input type="checkbox"/>
6. A strong immune system can help protect us from many harmful germs.	<input type="checkbox"/>	<input type="checkbox"/>
7. There isn't anything we can do to protect ourselves from germs.	<input type="checkbox"/>	<input type="checkbox"/>
8. Keeping ourselves clean can limit the spread of germs and reduce the risk of disease.	<input type="checkbox"/>	<input type="checkbox"/>
9. Personal hygiene is our personal business. Others will not be affected if we do not practise good hygiene.	<input type="checkbox"/>	<input type="checkbox"/>
10. Germs are released into the air when we cough and sneeze and can be passed on to others.	<input type="checkbox"/>	<input type="checkbox"/>
11. Keeping hands clean is a good way to keep germs from entering the body or spreading to others.	<input type="checkbox"/>	<input type="checkbox"/>
12. Germs can hide and multiply in clothing so we need to wash and change our clothes often.	<input type="checkbox"/>	<input type="checkbox"/>
13. Good nutrition doesn't have any effect on how the body defends itself against germs.	<input type="checkbox"/>	<input type="checkbox"/>



For more information on germs see Fact sheet **The truth about germs.**

Answer key: 1 True; 2 True; 3 False; 4 True; 5 True; 6 True; 7 False; 8 True; 9 False; 10 True; 11 True; 12 True; 13 False.

# 12 steps to good hand washing

Are you washing your hands properly? Follow and practise these 12 simple steps to good hand washing.

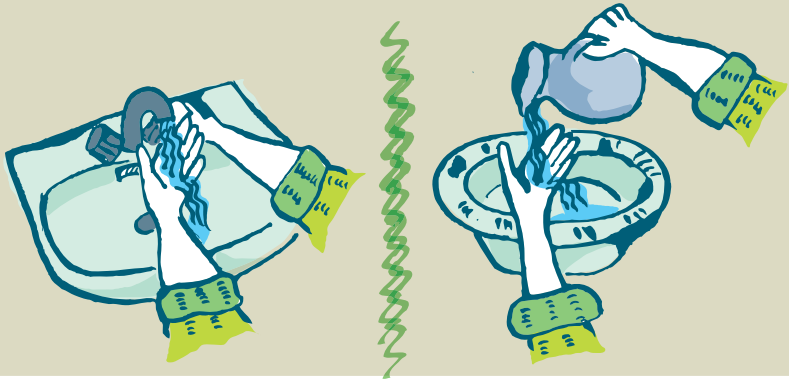
1

Roll up your sleeves.



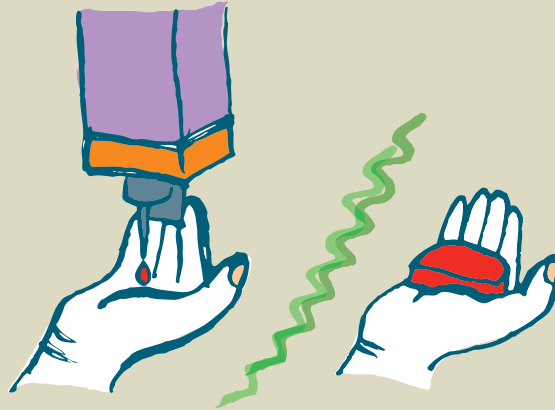
2

Wet your hands and wrists with clean water.



3

Put some soap on your hands. If soap is not available, you can use ash.



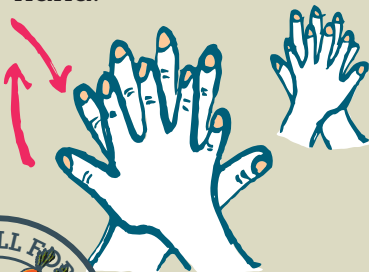
4

Rub hands together palm-to-palm. Work up a good lather.



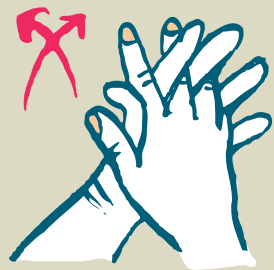
5

Rub with right palm over the left hand, then left palm over the right hand.



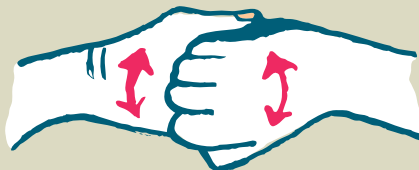
6

Wash between your fingers and under your nails. If there is a lot of dirt under nails, a little brush may be used to remove it.



7

Make a loose fist and rub the backs of the fingers.





★ Use this Fact sheet to help you complete the **Proper hand washing** Match it work sheet and to practise good hand washing.

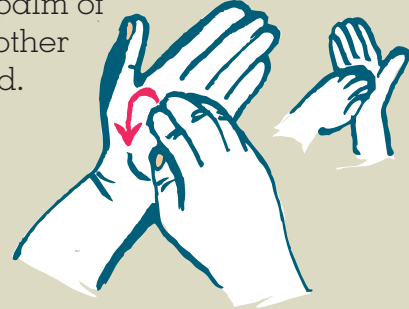
8

Grasp the left thumb with the right hand and rub some more. Then use the left hand to clean the right thumb.



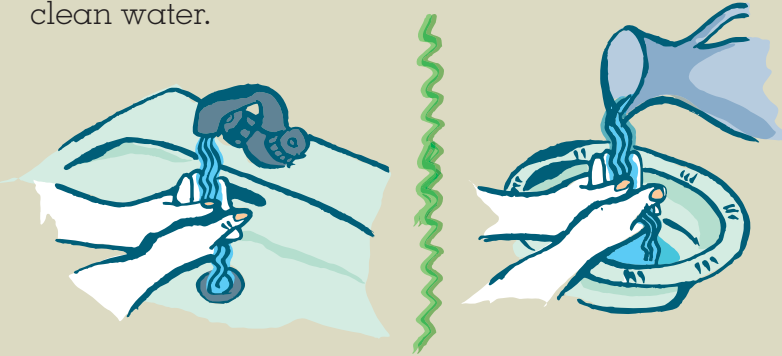
9

Clean the tips of your fingers by rubbing them against the palm of the other hand.



10

Rinse hands thoroughly under a stream of clean water.



11

Dry hands with a clean paper or cloth towel.



12 Ideally, you should use a paper towel to turn the tap off and open the door if necessary.



# Proper hand washing

1. Wash your hands for about...
2. Wet your hands and wrists...
3. Put some soap on your hands...
4. Rub your right palm over the left hand, ...
5. Wash between...
6. Make a loose fist...
7. Grasp the left thumb...
8. Then use the left hand...
9. Clean the tips of your fingers by rubbing them...
10. Rinse hands thoroughly under...
11. Dry hands...

Are you sure you wash your hands properly?  
See if you can match each hand-washing practice  
with its correct ending.  
Do you follow these practices?

- A. ...a stream of clean water.
- B. ...with a clean towel.
- C. ...to clean the right thumb.
- D. ...and rub hands together palm-to-palm.
- E. ...then left palm over the right hand.
- F. ...and rub the backs of the fingers.
- G. ...with the right hand and rub some more.
- H. ...15–20 seconds.
- I. ...with clean water.
- J. ...against the palm of the other hand.
- K. ...your fingers and under your nails.



Answer Key: 1H, 2I, 3D, 4E, 5K, 6F, 7G, 8C, 9J, 10A, 11B

See the best way  
to wash your hands on Fact sheet  
12 steps to good hand washing.