

## Unit 4L.4: Healthy living



- Life processes
- Injury and illness
- Keeping healthy
- Micro-organisms and health

### Science Skills

- Observing
- Classifying



### By the end of this unit you should know that:

- Life processes are controlled.
- Injury and illness affect life processes.
- Know the general effects of alcohol, tobacco and harmful drugs on humans.
- Know that some micro-organisms cause illness.
- Know that good hygiene is important in protecting from illnesses caused by micro-organisms.

## 4.6.1

**Life processes**

All healthy living organisms share 5 important life processes. They all need to:

1. Eat and drink
2. Breathe
3. Move
4. Reproduce
5. Grow

The human body is made of 70% of water. We need to drink at least 2 litres or approx 8 cups of water every day.

**Do we need the same amount of water all the time?**

**Activity:** Measure your needs of water

In the pictures below, which girl do you think needs more water?

A



B



**Here is how you can find out if you are right:**

**What you do:**

1. Choose two people from your group.
2. Measure their body temperature before activity.
  - a. One of the students should lie down for five minutes

- b. The other student should exercise for five minutes, i.e. choose some stairs to walk up and down for five minutes.

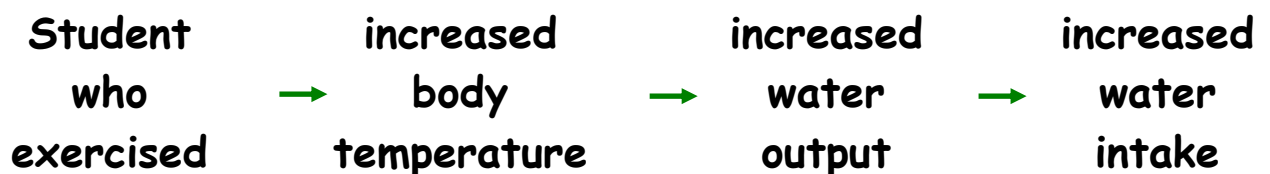
Predict: Which student will need more water?-----

3. Prepare 2 sets of 4 glasses of water.
4. By the end of the five minutes measure the body temperature of the two students again.
5. Ask the two students to drink as much water as they can.
6. Record your results in the following table:

	Student at rest	Student who exercised
Body temperature before		
Body temperature after 5 min		
Water intake		
Sweating (yes/no)		

1. Was your prediction before starting the activity correct? .....
2. Which student needed more water? .....

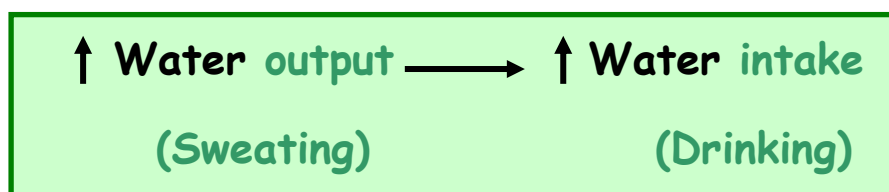
Here is what happened inside the body of student who exercised:



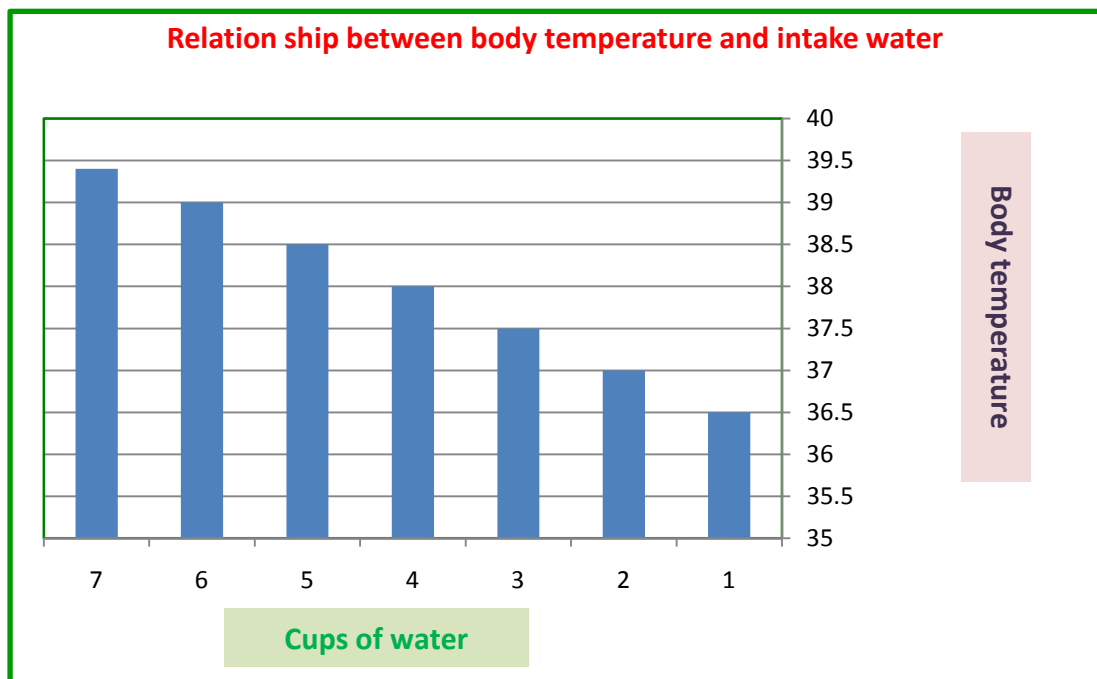
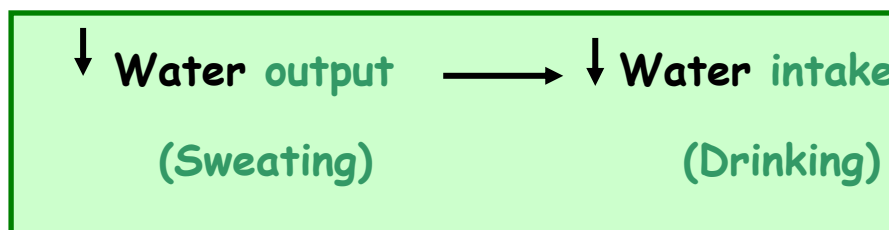
- Our normal body temperature is 37 °C.
- When we exercise, our body temperature increases.

- Our body produces sweat (increased water output) to go back to its normal temperature.
- When you sweat you are losing water from your body.
- When you start to feel thirsty your body is telling you that you need to replace the water you lost.

The more water you lose, the more water you need.



The less water you lose, the less water you need.



At **rest**, our **body temperature** stays the same at around 37 °C; we do not need to sweat.

Since we do not have extra **water output**, we do not need more **water intake**.

Our body controls how much water and food we need to stay healthy.

#### Key words:

- **Body temperature**
- **Water intake**
- **Water output**
- **Exercise**
- **Rest**

#### Key ideas:

- Our body temperature is approx 37 °C.
- When we exercise, body temperature increases, the water output will increase, so we need more water intake.

#### Project:

Find a verse in the Holy Quran that talk about the importance of water.

**Key questions:**

**A- Complete the following:**

- 1- The normal body temperature is.....
- 2- The more water you lose, the .....you need.
- 3- When we exercise, our body temperature.....

**B- Draw arrows ↑ or ↓ to show the relationship between the water output and water intake.**



**C- List the five life processes:**

.....

.....

.....

.....

.....

## 4.6.2

## Injury and illness

Sometimes living things lives are disturbed when they get sick (**illness**) or have an accident (**injury**). One or many of the life processes can be affected.

### 1. Injury:

- If you break your leg while playing football ball, you will not be able to **move** for few weeks until your leg heals.



- If a lion breaks a leg, it will not be able to **move** and look for **food**, without food the lion will not be able to **grow** and it will die. When the lion dies there will be no **reproduction**. The **injury** of the lion affected 4 life processes; **movement, eating, growing and reproduction**.

### 2- Illness:

Sometimes when you get sick, you feel warm. When you go to the clinic, the doctor uses the **thermometer** to measure the **temperature** of your body.



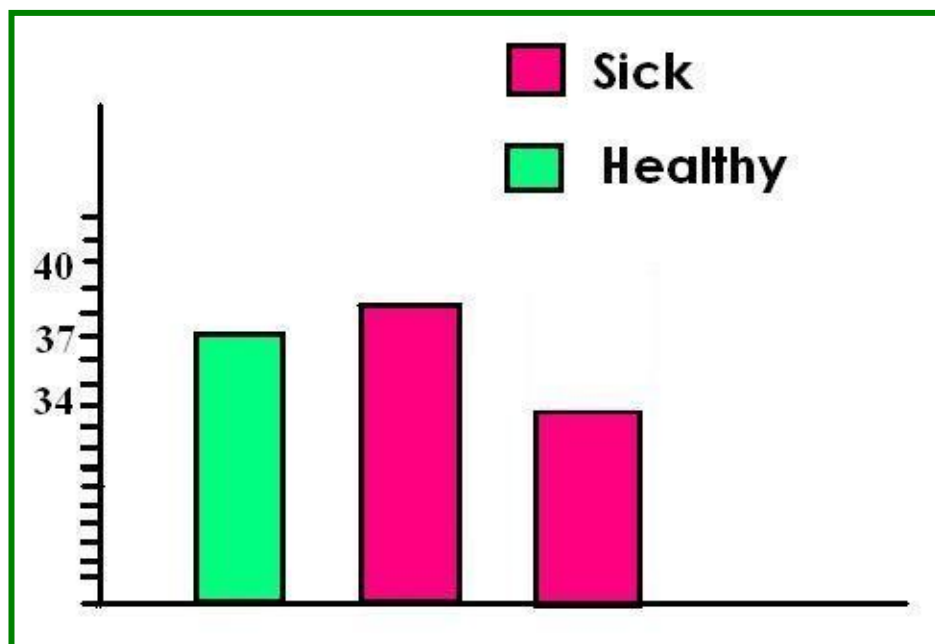


The normal body **temperature** is approx  $37\text{ c}^{\circ}$



The body **temperature** when you are **ill** increases or decreases

The graph below shows the **temperature** when you are healthy and when you are sick.



When you are ill, your life processes are affected as well:

1. You will be too tired to **move** and play.
2. You will not be able to **eat** as you usually do.



**Key words:**

- Injury
- Illness
- Thermometer
- Temperature

**Key ideas:**

- Injury and illness can affect the life processes.

**Project:**

If you or your friend/sister/brother get sick, Observe how injury and illness affect your life processes. Record your observations in the following table.

Life process	Illness	Injury
Movement		
Nutrition		
Growth		

**Key questions:**

**A- Complete the following.**

- Your normal body temperature is approximately .....
- When you are ill your body temperature can be ..... or ..... than normal.
- The doctor uses a .....to measure the temperature.

**B- Classify the following pictures into injury and illness:**



1

2

3

Injury	Illness

## 4.9.1

**Keeping healthy**

What do you think is harmful and why? Can you think of two more substances?

Substance	Why do <u>YOU</u> think it is harmful
Cigarettes	
Wine	
Sugar/sweets	
Coffee	
Cola	

There are lots of different **chemicals** that can harm you. Examples are **alcohol**, **drugs** and **tobacco**. But many people foolishly still choose to put these **chemicals** into their bodies. Some are Haram (prohibited) while others if taken too much can be bad for you!

Your teacher will now become a doctor! Write down 5 questions you would like to ask. Later you can use this information to complete a table at the end of this section.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

5. \_\_\_\_\_

**Drugs:** Any chemical substances that causes a change in the body.



### Effect of drugs:

- 1- Drugs affect your brain.
- 2- Drugs can speed or slow the heart rate.
- 3- Drugs can speed or slow the breathing rate.
- 4- Drugs can affect the muscles and movement of the body.

### Activity:

Now that you have lots of information about the dangers of such substances we need to tell people about it!

In groups make a poster to raise awareness about the danger of drugs.

The poster should include: your name/clear title/ clear information with diagrams and pictures/colourful/use all the space on the paper!

### Alcohol and Smoking

**Alcohol and Smoking - are two things that are VERY bad...Allah says about Alcohol in the Quran (5:91):**

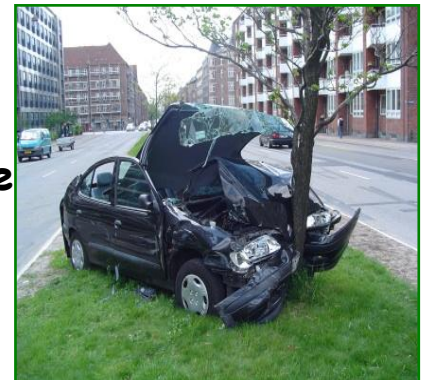
إِنَّمَا يُرِيدُ الشَّيْطَانُ أَنْ يُوقِعَ بَيْنَكُمُ الْعَدَاوَةَ وَالْبَغْضَاءَ فِي الْخَمْرِ وَالْمَيْسِرِ وَيَصُدَّكُمْ عَنْ ذِكْرِ اللَّهِ وَعَنِ الصَّلَاةِ فَهَلْ أَنْتُمْ مُنْتَهُونَ

Satan wants only to excite enmity and hatred between **you with intoxicants (alcoholic drinks)** and gambling, and stop you from the remembrance of Allah and from the prayer. So, will you not then stop?

**Alcohol: A drug found in drinks such as beer and wine.**

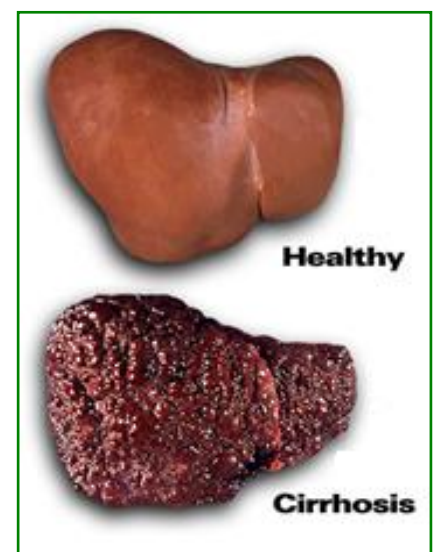
### Effects of alcohol:

- 1- Difficulty in walking and talking
- 2- Damages the liver - causes a disease Called Cirrhosis - (*pronounced Sirrosis*)
- 3- Causes car accidents as people can't Control their cars.



**Activity: Ask your teacher to prepare this for you.**

Place a piece of liver in a cup of alcohol and another piece in a cup of water and observe what happens.



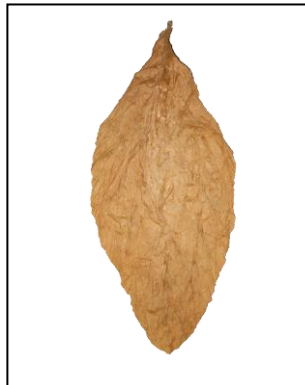
**My observation:**

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**My conclusion:**

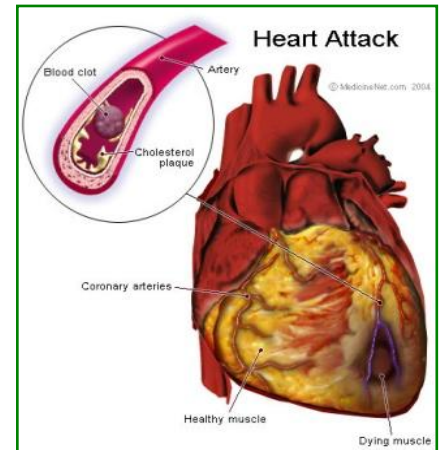
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**Tobacco:** is the leaf of the tobacco plant found in cigarettes. It is dried and then made into cigarettes.



**Effect of tobacco:**

- 1- Causes increased chance of lung cancer
- 2- Causes increased chance of heart attack
- 3- Affects the teeth



**Key words:**

- Chemicals
- Alcohol
- Drugs
- Tobacco
- Cigarettes
- Tar
- Caffeine
- Medicine
- Liver
- Lung cancer
- Illegal
- Side effects

**Remember!** You should always say **NO** if other kids try and persuade you to smoke! Be strong, you will better off in the long run pleasing Allah and looking after your health!



**Key ideas:**

- Know that alcohol is a drug found in drinks like beer and wine and its effects on humans.
- Know that tobacco is a drug found in cigarettes and its effect on humans
- Know that drugs are chemical substances that cause change in the body function and their effect on humans.

Complete the following table:

Substances you can find every day!	Drug it contains	How it can affect the body
Cigarettes		
Wine		
Tea		
Coffee		
Cola		

### Project:

Get in contact with Hamad's hospital to find out more about these drugs and their dangerous effects. The hospital may have lots of leaflets on this topic.

Plan and create an interesting way of communicating information about how alcohol, tobacco can affect health. For example, they could use:

- a leaflet;
- a poster;
- a health magazine page; folder A3 paper
- a crossword; using the important words
- a puzzle page;
- a cartoon.

Think about the following questions:

- What key information do you want people to know?
- How will you make it interesting?
- How will you highlight key ideas or words?



**Key questions:**

**1- Write the scientific terms.**

- Shredded leaf found in cigarettes

(.....)

- Harmful substance found in drinks such as beer

(.....)

2- A 13 year old student was about to be picked for a football team. Some of his friends are trying to get him to smoke. What three reasons would you give to this person to persuade him not to smoke?

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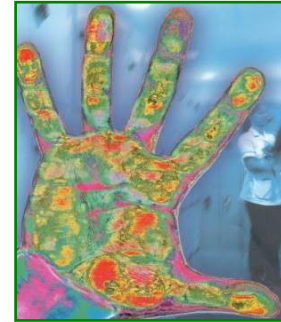
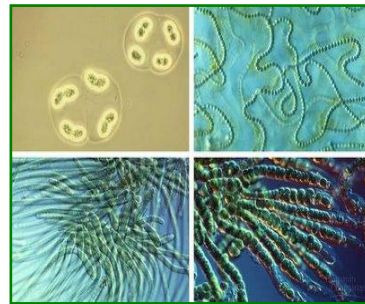
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**3- Fill in the table below:**

Everyday product	Drug it contains	How it can affect the body
Cigarettes		
Wine		
Tea - coffee- cola		

# Micro-organisms and health

What are these pictures below?



Can you remember anything about Micro-organisms?

Why do you get ill and what do you think causes it???






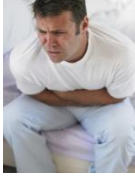
- What do you think germs are?
- How are germs passed from one person to another?
- What kinds of germs do you know about?
- What illnesses do you know about that are caused by germs?

**Germs are micro-organisms that makes us fall ill!**



If we don't wash our hands properly! Germs stay on them!

We know that we are infected with **micro-organisms** when we have the following symptoms.

Illness	Symptom		
Cold	 Coughing	 Sneezing	 Runny nose
Chicken pox	 Rash		 Fever
Stomach upset			

We can control the **micro-organisms** that cause illness by knowing how they spread.

**Activity1:**

How many ways of spreading **disease** can you find in this picture? .....



## How are micro-organisms spread?

Here are some ways that we can be infected by **micro-organisms**.

### 1. Through the air;

When an infected person sneezes or coughs.



### 2. Through touching;

- infected people.
- things that an infected person has been in contact with.

### 3. In food and water;

- When food and water are infected with **micro-organisms**.
- **Micro-organisms** can be passed on through food when we eat with dirty hands.

### 4. From animals;

- Insects can carry **micro-organisms** on their legs and infect food.
- An insect bite carries **micro-organisms** from one person to another.
- Saliva from animals left on their fur or skin.



**Activity**

**You will need:** hair jel.

**Steps:**

Four volunteers are needed - pretend you have a cold, and pretend to sneeze into you hands! ( don't forget to say Alhumdolliah!). Now your teacher will put some bright coloured hair gel in your hands....like this one:



This is what bacteria can look like if your hands are not washed properly.

Go round the classroom shaking hands...with as many people as you can in 10 seconds! Anyone who gets the gel on their hands to shake hands with another person.

**Lets see** how many people get infected in 10sec!

**Good hygiene**

There are four ways of spreading diseases:

- 1- By the air.
- 2- By touching.
- 3- By food and water.
- 4- By animals.

**Good hygiene** is the key to preventing the spread of disease.

**1- Wash your hands**

- Before and after you eat.
- After going to the toilet.
- Before making food.



Wash hands with soap



Dry hands with paper towel

**2- Keep clean**

- Have a shower regularly.
- Brush your teeth.



**3- Protect food and water**

- Cover the food and water.
- Keep the food in the fridge.



**4- If you are sick**

- Cover your face when you cough or sneeze.
- Stay at home and take a rest.



**Remember****Eat healthy and exercise**

**Project:** Create chart of common illnesses in Qatar. Copy this table on a plain A4 sheet, use a ruler and make it look neat!

Illness	Virus/bacteria	Symptoms	Causes	Prevention and control

**Key words:**

- **Micro-organisms**
- **Germs**
- **Viruses**
- **Bacteria**
- **Illnesses**
- **Coughs**
- **Colds**
- **Spread**
- **Catch**
- **Symptoms**
- **Good hygiene**
- **Spread**
- **Prevention**

**Key ideas:**

- **Micro-organisms are tiny living things that we cannot see with our eyes alone.**
- **Some micro-organisms cause illnesses like cold, chicken pox and tooth decay.**
- **Know that good hygiene is the key to prevent disease.**
- **Good hygiene is to wash your hands, stay clean, cover the food and water and take rest when you are sick.**

**Key questions:**

1- What equipment is used to see micro-organisms?  
Why?

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3- Why is it important to cover your face when you cough or sneeze?

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4- Choose the right word or words from the box to fill the gaps in the sentences below.

wash	use your handkerchief	exercise
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- Make sure you \_\_\_\_\_ when sneezing.
- Before eating \_\_\_\_\_ your hands.
- Make \_\_\_\_\_, don't smoke.

5- Complete the following table:

Illness	Symptoms
Chicken pox	
Cold	