

Body measurements

Target - Carry out body measurements

When you go to the Doctor, the doctor or nurse will make measurements to see if you are well or not.

The measurements they take will help identify what is wrong with you.

The next topic looks at what measurements the doctor might take. For each you will be able to -

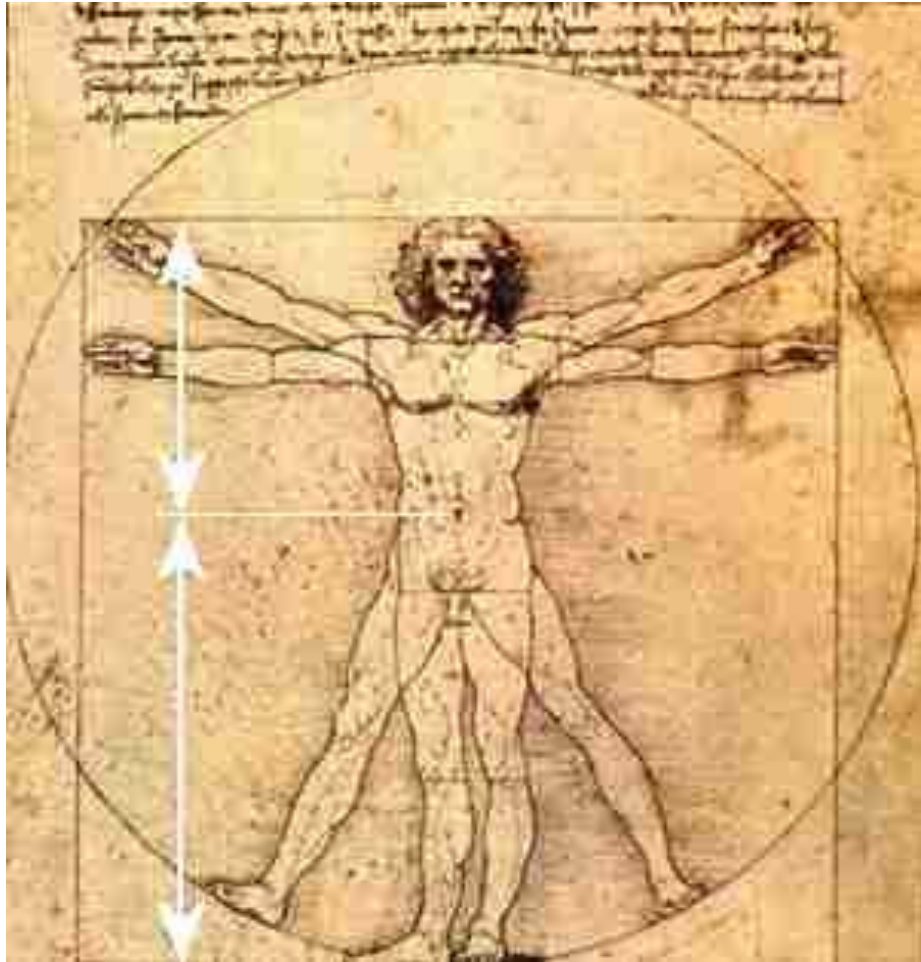
- **Name** a hi-tech and low-tech measurer
- **List** some conditions that might be identified by the measurement
- **Describe** how to use the measurers.

- **Practise** reading the scales on the metre stick

- **Take** the body readings.

- **Complete** the **Body measurement record sheet.**

# Basic body measurements



Height \_\_\_\_\_ cm

Sitting height \_\_\_\_\_ cm

Weight \_\_\_\_\_ kg

Handspan \_\_\_\_\_ cm

Hair colour \_\_\_\_\_

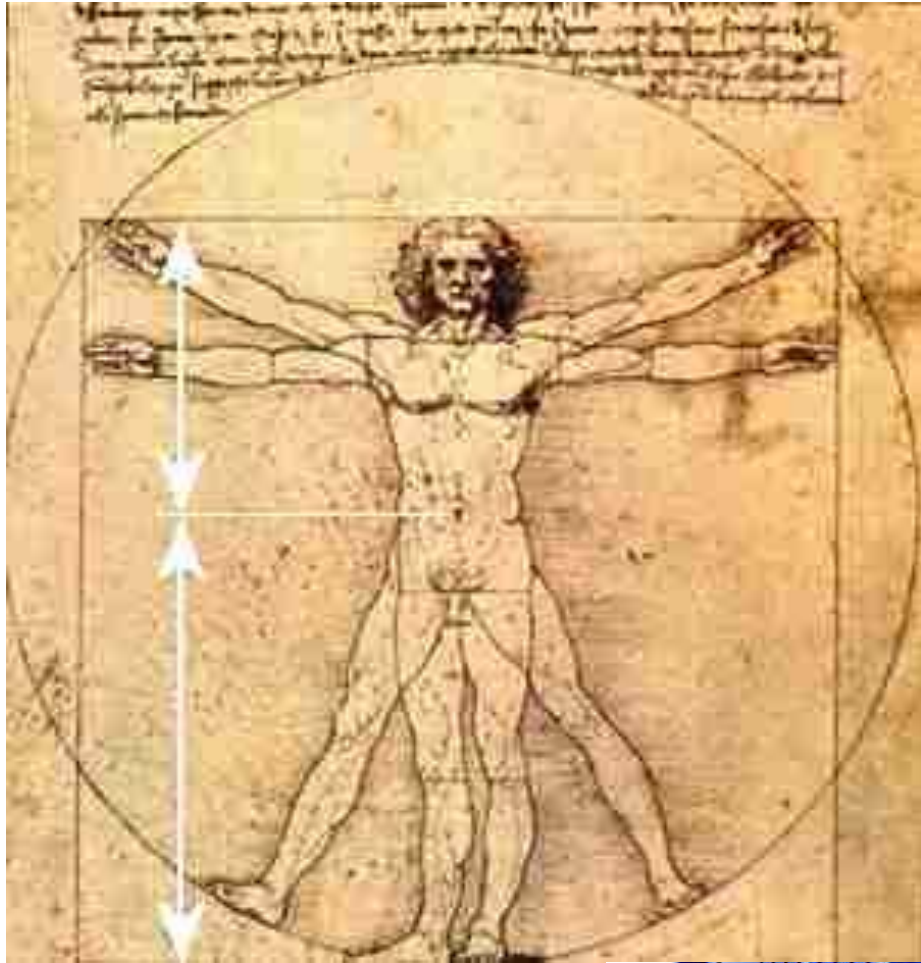
Hair type \_\_\_\_\_

Eye colour \_\_\_\_\_

Handedness \_\_\_\_\_

Dominant eye \_\_\_\_\_

# Basic body measurements



Height \_\_\_\_\_ cm

Sitting height \_\_\_\_\_ cm

Weight \_\_\_\_\_ kg

Handspan \_\_\_\_\_ cm

Hair colour \_\_\_\_\_

Hair type \_\_\_\_\_

Eye colour \_\_\_\_\_

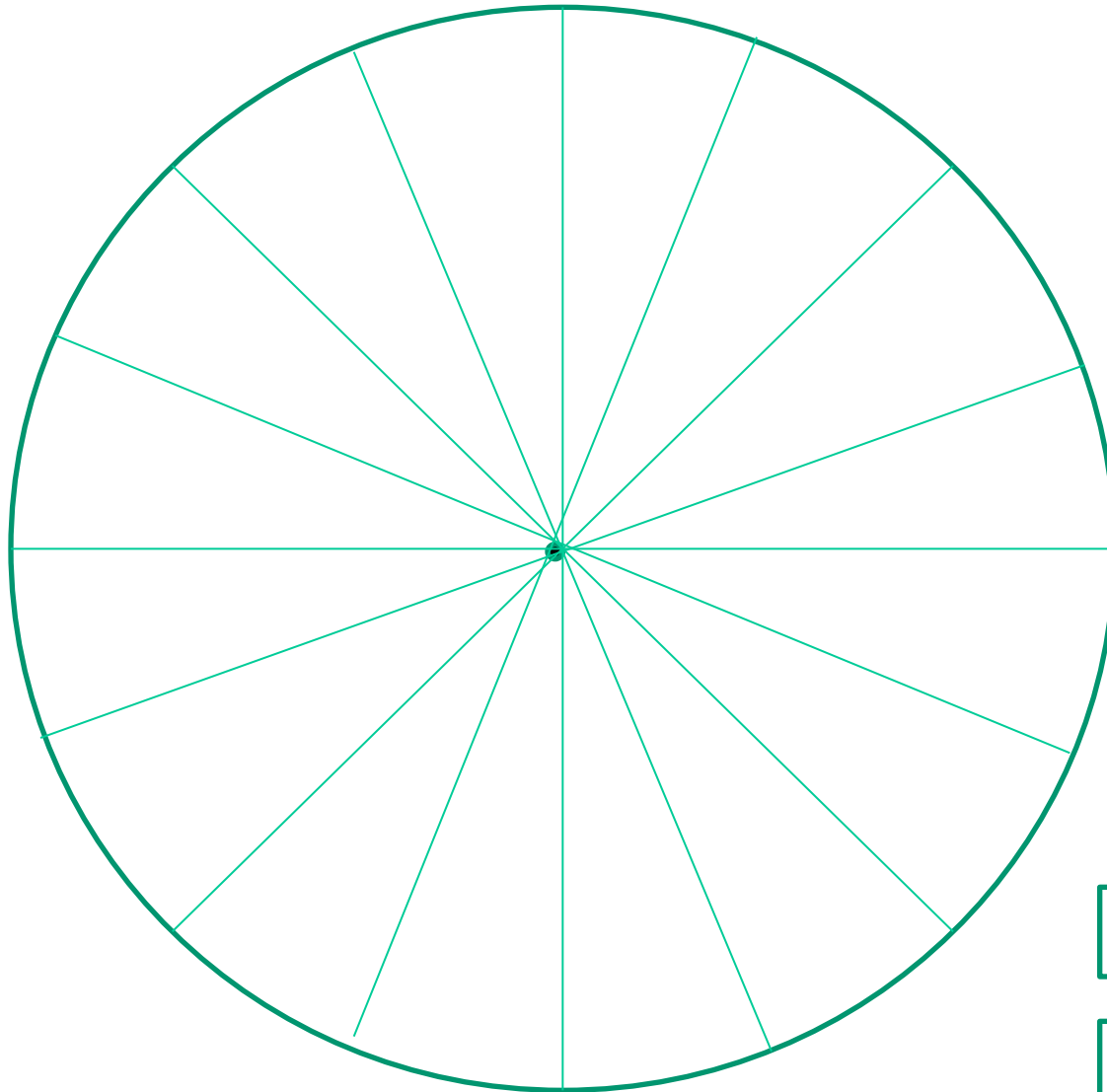
Handedness \_\_\_\_\_

Dominant eye \_\_\_\_\_



Graphing the results

Right / left handed



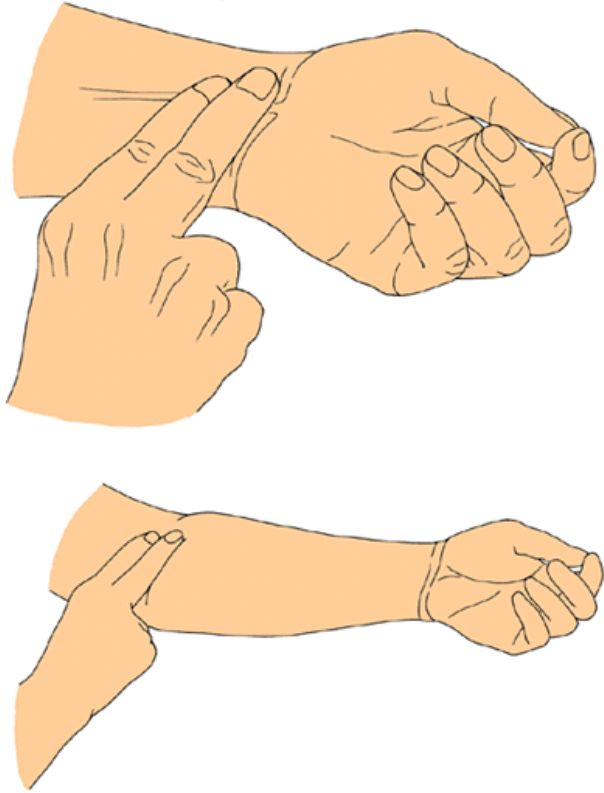
right



left



## Taking Your Own Pulse

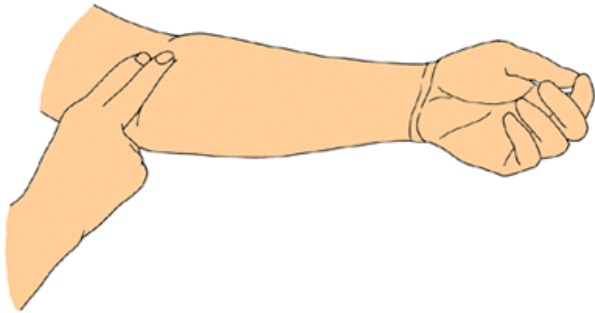
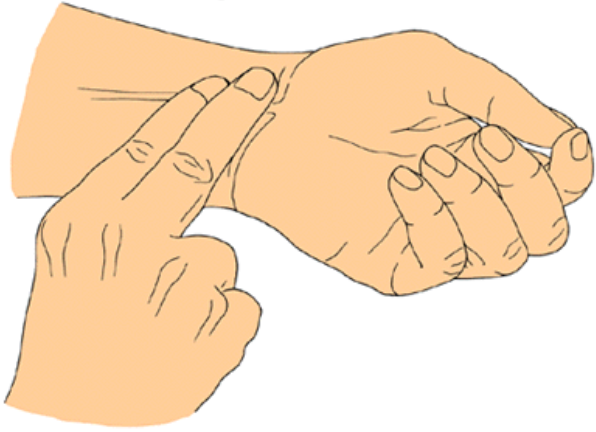


The doctor takes your pulse.

Your pulse is a measure of how many times your heart beats in one minute.

The old fashioned way (low-tech) is to just count how many beats you feel in a minute.

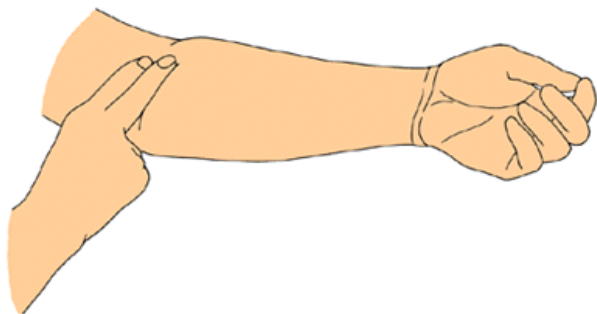
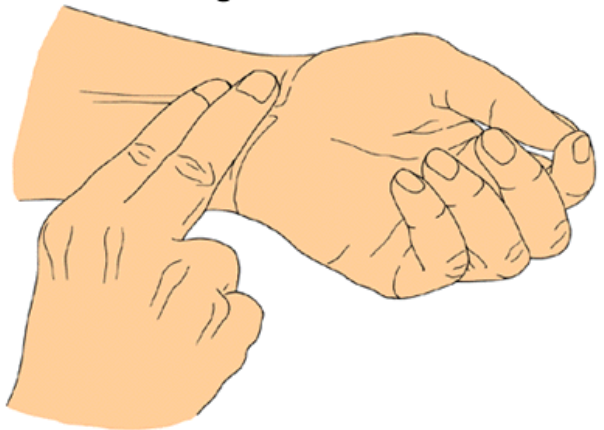
## Taking Your Own Pulse



The modern (hi-tech) way is to use a pulsemeter. This gives you a read out showing the number of pulses per minute.



## Taking Your Own Pulse



The doctor takes your pulse.

The modern (hi-tech) way is to use a pulsemeter. This gives you a read out showing the number of pulses per minute.

The doctor can detect whether you have an **infection** from your pulse. People also monitor their pulse to see how **exercise** is affecting their **fitness**.



## Measuring pulse

You can take your pulse at your \_\_\_\_\_ or your \_\_\_\_\_.  
Taking your pulse measures how many times your \_\_\_\_\_  
beats in one \_\_\_\_\_.

Normally, you take your pulse for 20 seconds and times  
the answer by \_\_\_ to get the pulses in one minute.

My average pulse was ..... per minute.

My average pulse meter reading was ..... beats per  
minute.

The pulse meter was \_\_\_\_\_-tech. It was more accurate and  
easier to use.

## Measuring pulse

You can take your pulse at your **wrist** or your **neck**.  
Taking your pulse measures how many times your **heart** beats in one **minute**.

Normally, you take your pulse for 20 seconds and times the answer by **3** to get the pulses in one minute.

My average pulse was ..... per minute.

My average pulse meter reading was ..... beats per minute.

The pulse meter was **hi**-tech and was more accurate and easier to use

Target - Measure blood pressure



The doctor takes your blood pressure. This is a measure of how strongly your heart is pumping blood round your body.

This is a very complicated thing to do, using an inflatable cuff and a stethoscope. Only a doctor or nurse can do this accurately.



You can now buy do-it-yourself blood pressure monitors from chemists.

These are hi-tech - very easy to use and they give a simple number read out which is easier to understand. Anyone can use these.







If your blood pressure is too high, you are increased risk from heart disease and strokes.

If your blood pressure is too low, you may faint.

Many people now think it is very important to check their own blood pressure because it gives early warning of dangerous health conditions.



## Blood pressure

Blood pressure measures the force that pushes blood round your \_\_\_\_\_. It has two measurements.

A \_\_\_\_\_ blood pressure would be 120/80.

If your blood pressure is too low, you might \_\_\_\_\_ because not enough blood gets to your brain.

If your blood pressure is too high, your blood vessels might \_\_\_\_\_. This can cause a \_\_\_\_\_ or a \_\_\_\_\_ attack.

My average blood pressure was \_\_\_\_\_/ \_\_\_\_\_

## Blood pressure

Blood pressure measures the force that pushes blood round your **body**. It has two measurements.

A **normal** blood pressure would be 120/80.

If your blood pressure is too low, you might **faint** because not enough blood gets to your brain.

If your blood pressure is too high, your blood vessels might **burst**. This can cause a **stroke** or a **heart** attack.

My average blood pressure was \_\_\_\_\_/ \_\_\_\_\_

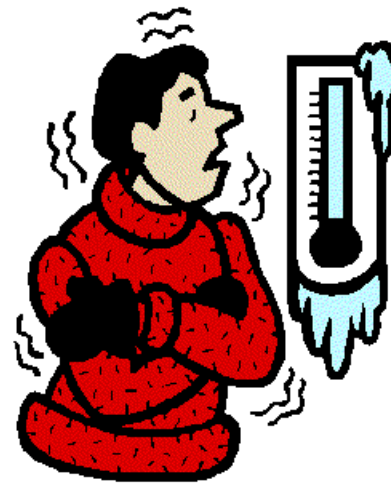
## Target - Measure body temperature

- I can name and use three ways of measuring body temperature, describe their limitations and classify them as hi or lo tech.
- I can name and use three ways of measuring body temperature and classify them as hi or lo tech.
- I can name and use some ways of measuring body temperature and classify them as hi or lo tech.



Title  
Equipment  
Spelling  
Completion  
Organised

*Peer Assessment check*



Probably the most common health measurement is **temperature**. Your temperature should be a constant 37 degrees Celsius. If it is too high, this is a sign you have an **infection**.





There are special **clinical thermometers** which you can use in your mouth or under your armpit. There are some quite complicated rules for using these thermometers and their scales can be quite difficult to read.

These are low-tech, and best used by doctors and nurses, though others can learn to use them too.



Much simpler are **digital thermometers**. These are used just like clinical thermometers, but give a quick read out in numbers it is easier to see and understand.





A different way of taking temperature is a **fever strip**.

This is a plastic strip which you hold on your forehead. The number showing your temperature changes colour.

These are not very accurate.



## Measuring body temperature

- Construct a table to show the name of the measurer, whether it is hi-tech or lo-tech and the reading you got for your own temperature. Remember the correct units.
- Write a list of instructions for how to use a clinical thermometer.

# Measuring temperature

Measurer	Hi-tech / lo-tech	My reading	units

*To use a clinical thermometer -*

Shake down the \_\_\_\_\_.

Put it under your \_\_\_\_\_ for one  
\_\_\_\_\_.

Read where the end of the column of  
\_\_\_\_\_ comes to.

Roll the thermometer round so that it  
\_\_\_\_\_ the scale.

minute

magnifies

tongue

mercury

## Measuring body temperature

Normal body temperature is \_\_\_<sup>o</sup>C.

Temperature is measured using a \_\_\_\_\_.

A \_\_\_\_\_ thermometer is filled with \_\_\_\_\_ which expands up the scale when it gets \_\_\_\_\_. You can take body temperature under your \_\_\_\_\_ or in your \_\_\_\_\_. You need to keep it there for at least a \_\_\_\_\_ until the mercury stops moving.

The hi-tech temperature measurer is a \_\_\_\_\_ thermometer. It is \_\_\_\_\_ to use.

## Measuring body temperature

Normal body temperature is **37°C**.

Temperature is measured using a **thermometer**.

A **clinical** thermometer is filled with **mercury** which expands up the scale when it gets **warmer**. You can take body temperature under your **arm** or in your **mouth**. You need to keep it there for at least a **minute** until the mercury stops moving.

The hi-tech temperature measurer is a **digital** thermometer. It is **easier** to use.

Target - Interpret body temperatures

In the last few slides we have talked about hi-tech and low-tech measurers.

## Advantages of hi and low tech measurers

### Hi-tech

Easier to use

### Low-tech

harder to use

cheaper

Digital (number)  
read out

More accurate

less accurate

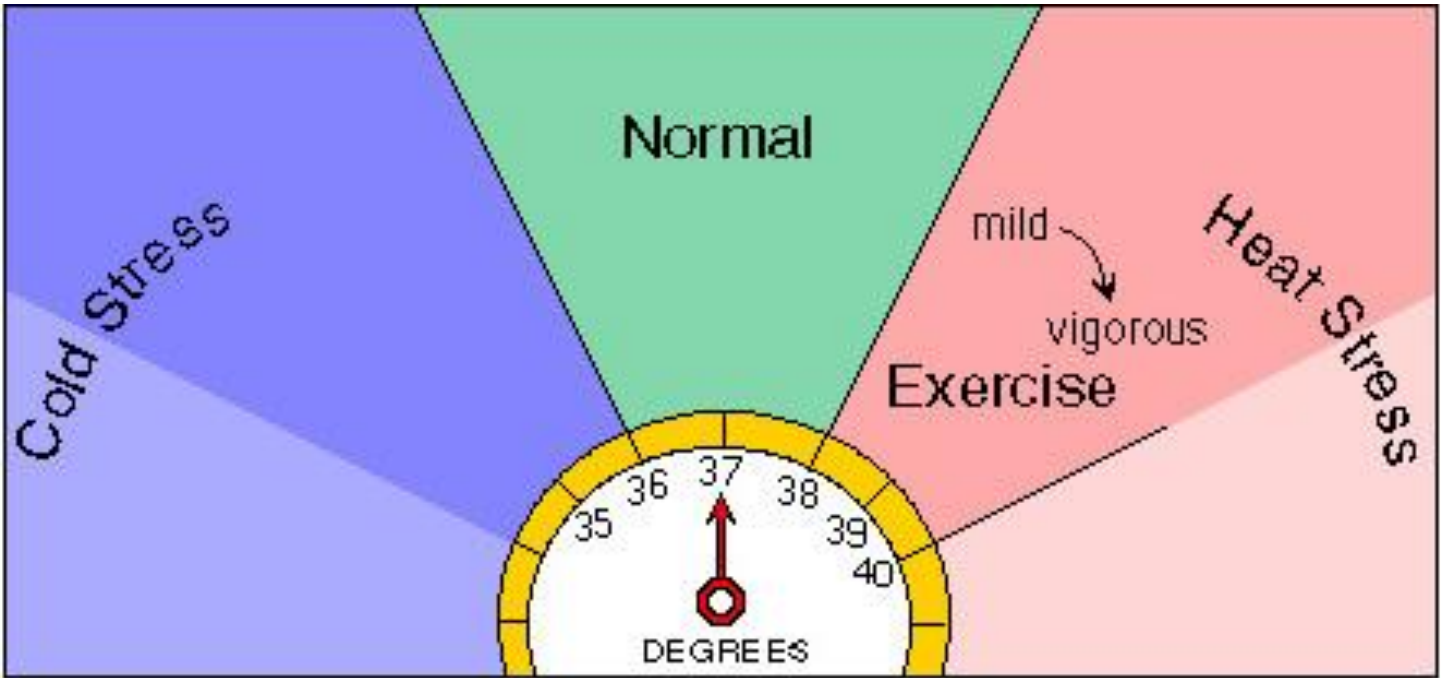
More expensive

Read off a scale

Give a quicker result

Slower to use





How does your body react to **over heating**?



**Think** - hairs, colour, sweat glands, behaviour



## Why does the doctor take your temperature?

A high temperature is sometimes called a **fever**.

Usually, a high temperature is a sign that your body is fighting an **infection**. It is common in children and can be controlled by common medicines like **Calpol**. Never let a child's temperature go out of control as it can trigger **fits**.

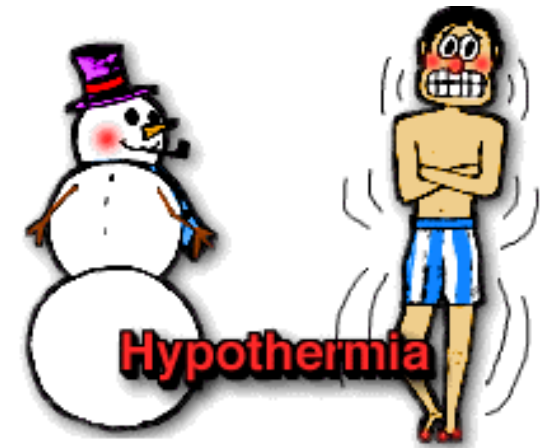




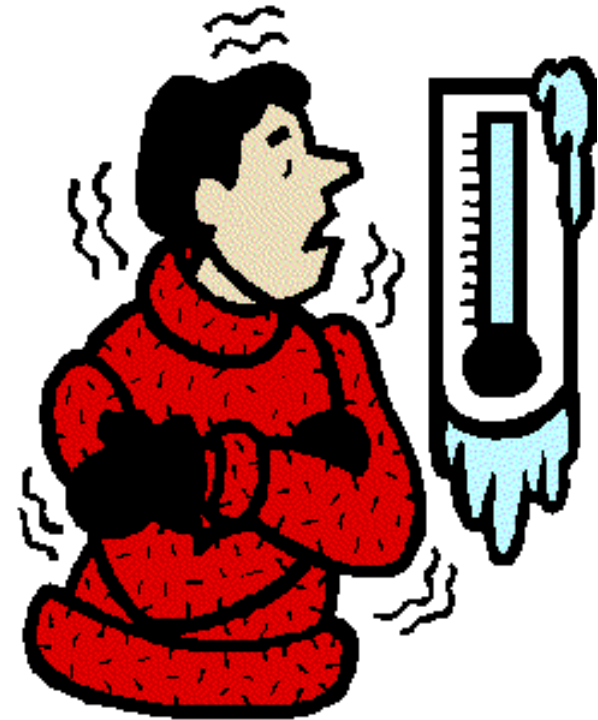
## Why does the doctor take your temperature?

A low temperature can lead to **hypothermia**.

Hypothermia is most commonly caused by weather conditions - being caught out in very cold conditions. It tends to be a gradual change. People get **confused** and **lethargic**. Your body metabolism gets slower and slower. It is most common in older people as their blood circulation is not as good at spreading heat round the body.



How does your body react to getting cold?



**Think** - hairs, colour, muscles, behaviour

Normal body temperature is \_\_\_\_\_ degrees Celcius.

A high temperature is called running a \_\_\_\_\_. This is often a sign that your body has an \_\_\_\_\_. If your body temperature is too high, your skin goes \_\_\_\_\_ in colour and you start to \_\_\_\_\_.

If your body temperature falls, you are suffering from \_\_\_\_\_. You become confused, your skin goes \_\_\_\_\_ and your body \_\_\_\_\_s to try to make some heat.

Normal body temperature is **37** degrees Celcius.

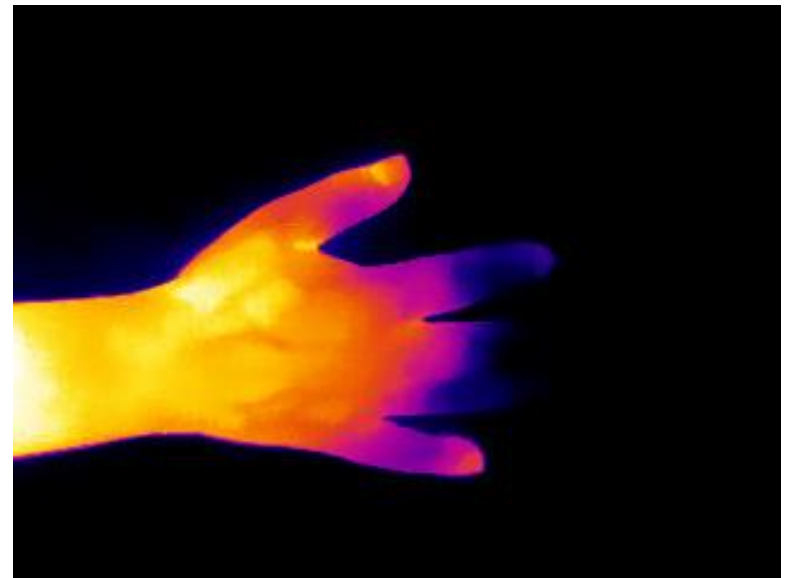
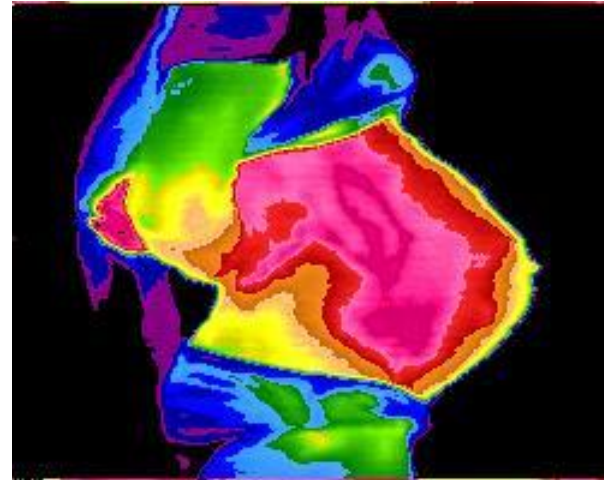
A high temperature is called running a **fever**. This is often a sign that your body has an **infection**. If your body temperature is too high, your skin goes **red** in colour and you start to **sweat** .

If your body temperature falls, you are suffering from **hypothermia**. You become confused, your skin goes **blue** and your body **shivers** to try to make some heat.

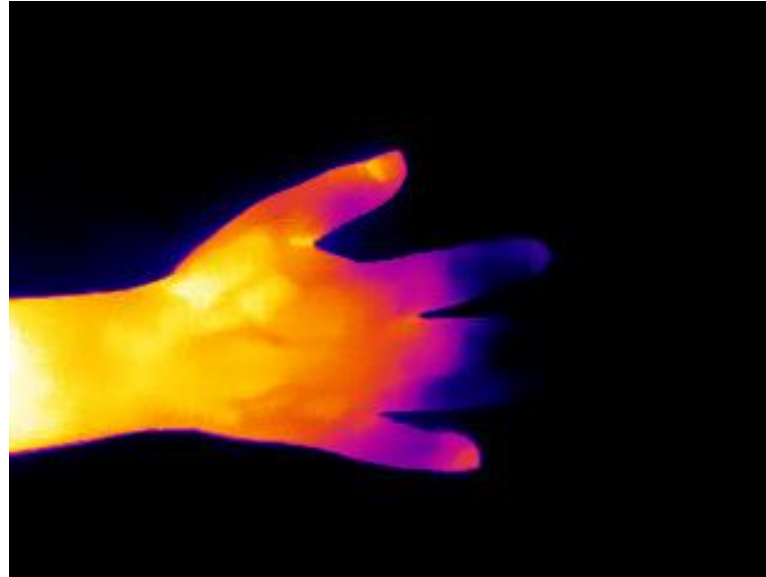
Thermal images can be used to show skin temperature.

The **redder** the colour, the hotter the skin.

The **bluer** the colour, the colder.





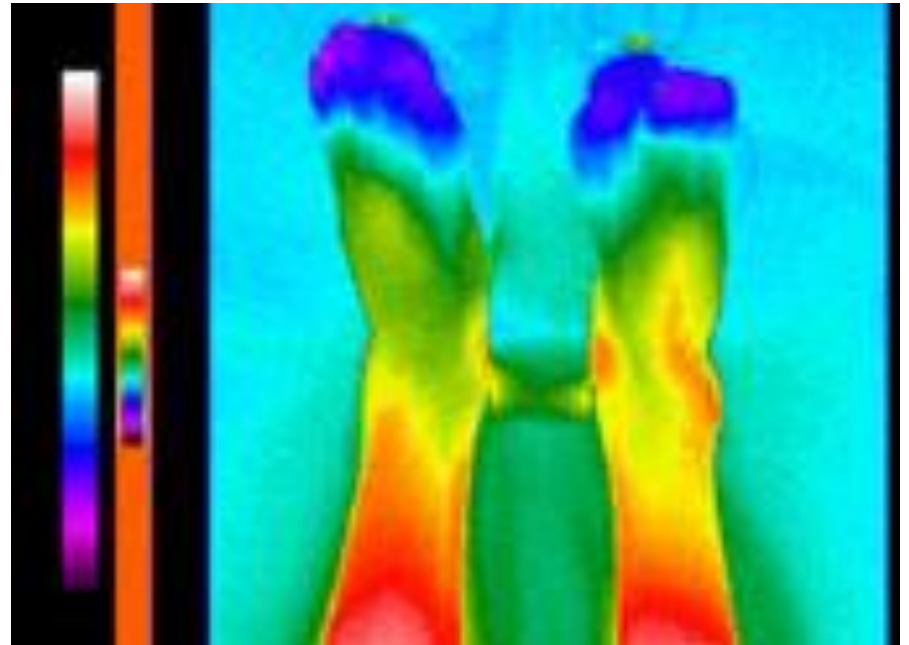


As you get further from the middle of your body, the body gets colder. These parts are known as your **extremities**.

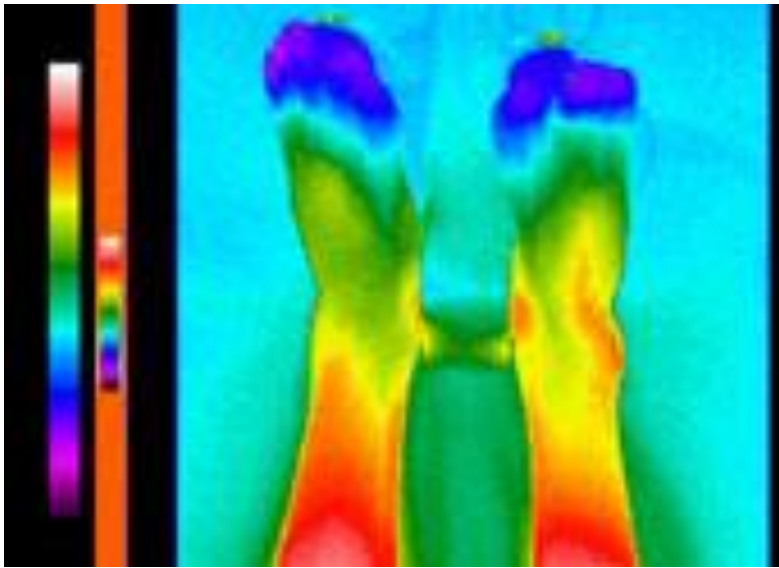
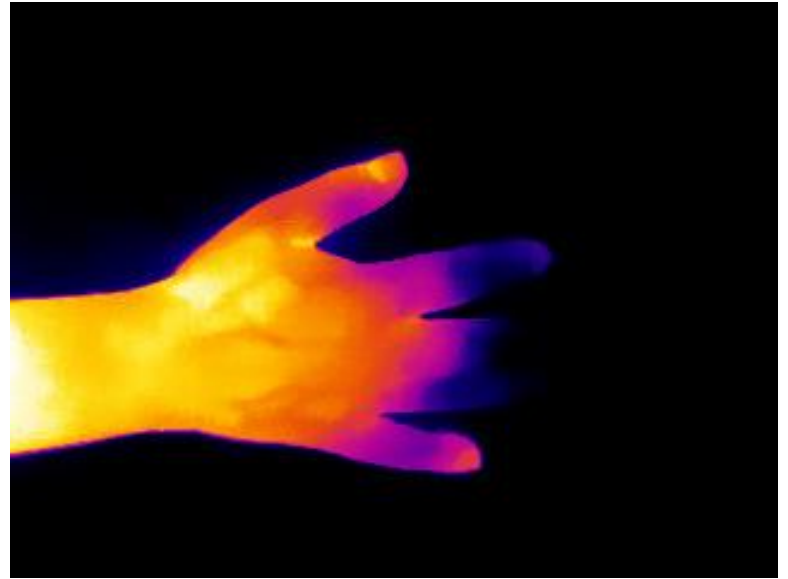
These parts are affected worst by cold temperatures - they suffer from **frostbite** if damaged by long term exposure to very cold temperatures.

Which parts of the  
**body** will be worst  
affected?

Which parts of the  
**face**?

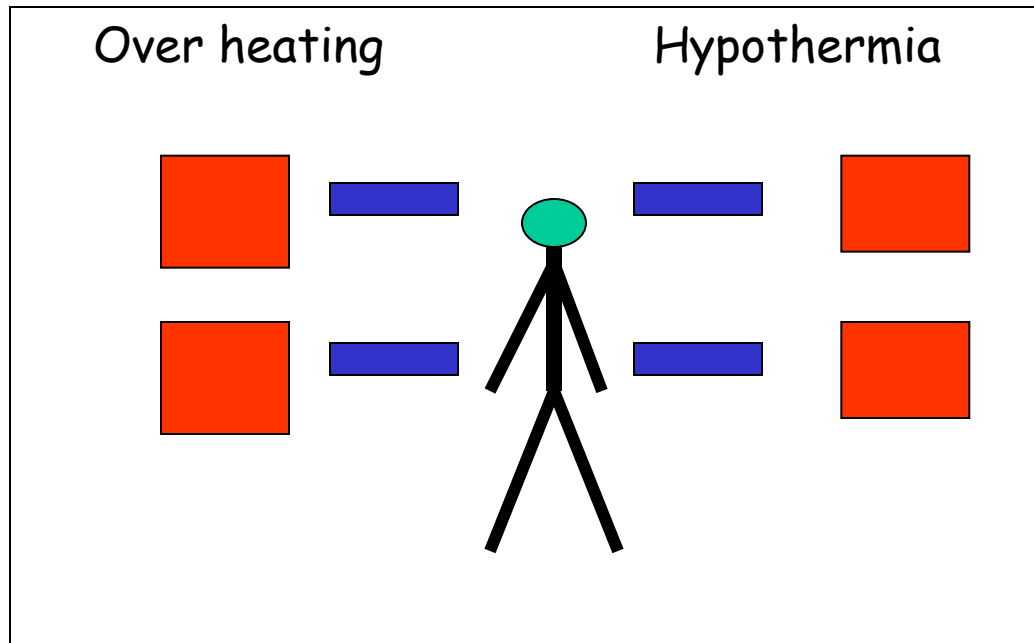






## Your task -

- Work in 2 pairs within your work group
- You will need - A3 paper, coloured pens
- Complete a hot man / cold man diagram to show how the body reacts to hot and cold temperatures (blue pen)
- Add notes to explain how each of these changes benefits the body. (red pen)



# Title - Hypothermia -

Watch the [video on Hypothermia](#).

Write a **note in your jotter** on hypothermia to explain -

- What happens to your body if you have hypothermia
- Why **old people** are most at risk
- What to do if you find someone with hypothermia

What I measure

Hi-tech

Low tech

If it is too high ..

If it is too low ..

What I measure

pulse

Hi-tech

Pulse meter

Low tech

Stop watch

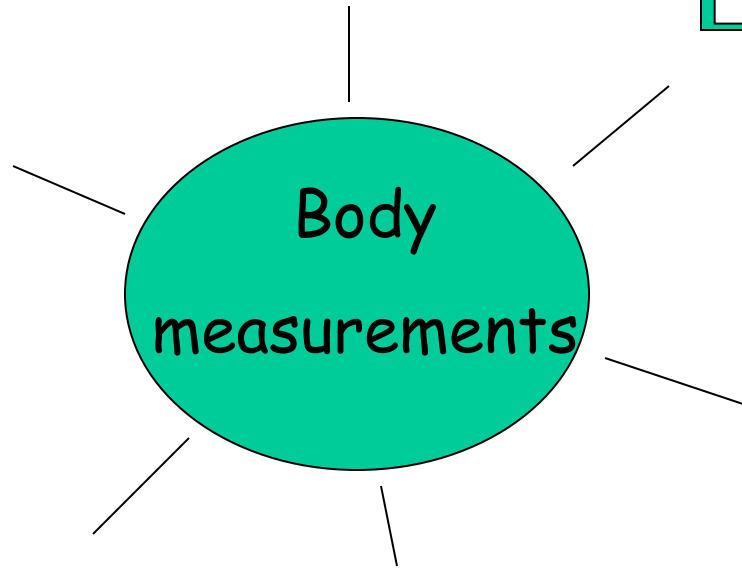
If it is too high ..

Fever or infection

If it is too low ..

Heart problems



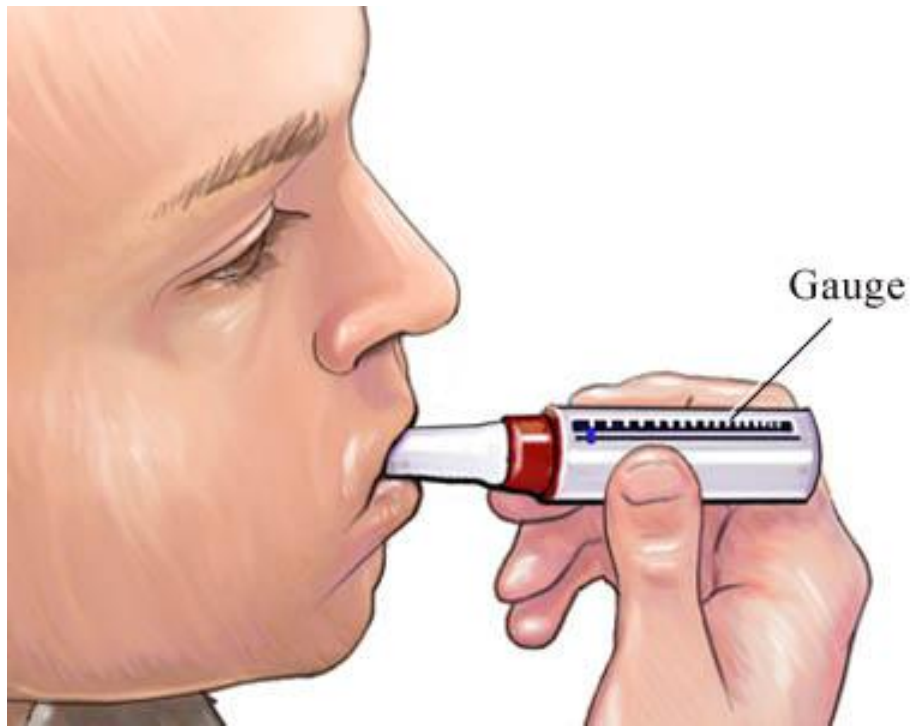


What I measure  
pulse

Hi-tech      Low tech  
Pulse meter      Stop watch

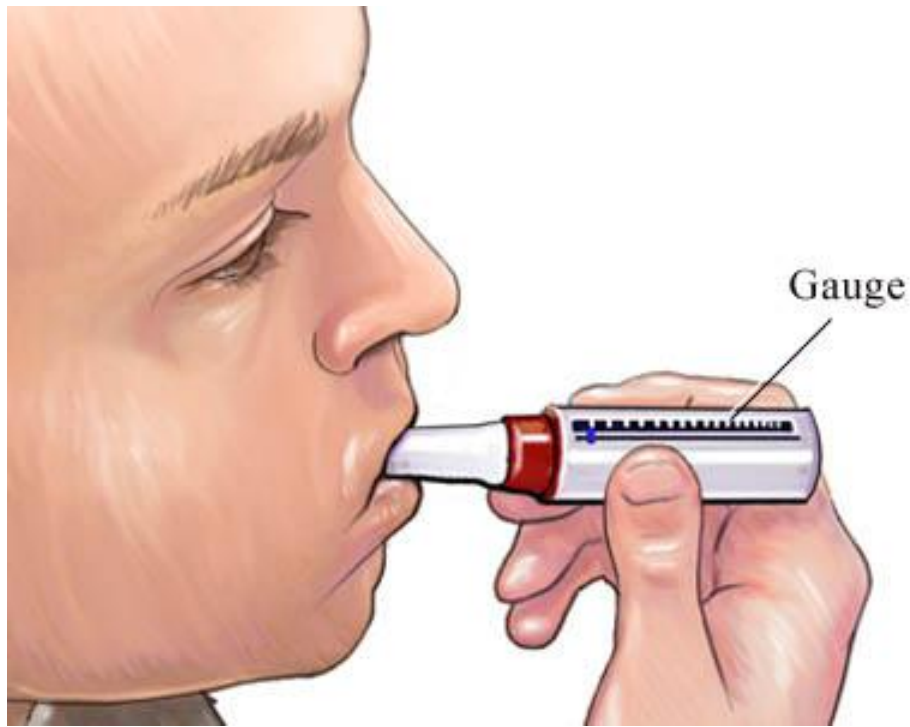
If it is too high ..  
Fever or infection

If it is too low  
Heart problems



This is checking your peak flow. This measures how **quickly** your lungs can breathe all the air out. This is a simple, low tech measurement.

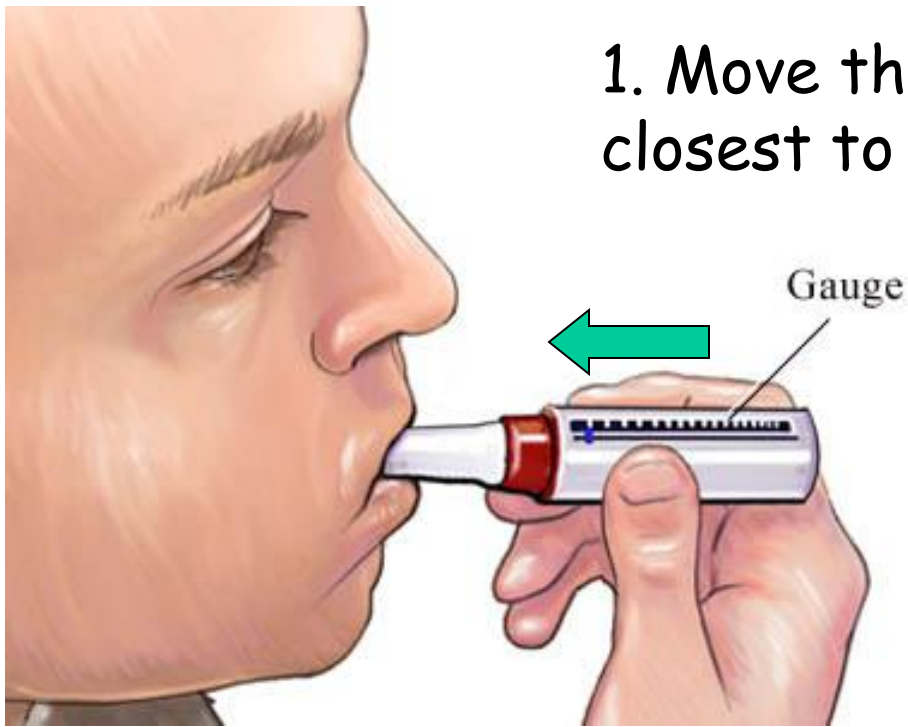
This peak flow meter is often given to people with **athsma** to help them monitor when they need their inhaler.



**Before** you use the peak flow meter, you must sterilise the mouthpiece by rinsing it in **sterilising solution**.

**Dry** it on a paper towel so that you do not get a funny taste in your mouth.

1. Move the pointer back so that it is closest to your mouth.



2. Blow as hard as you can into the peak flow meter.
3. Look at where the pointer has moved to.
4. Recording -

## Measuring peak flow.

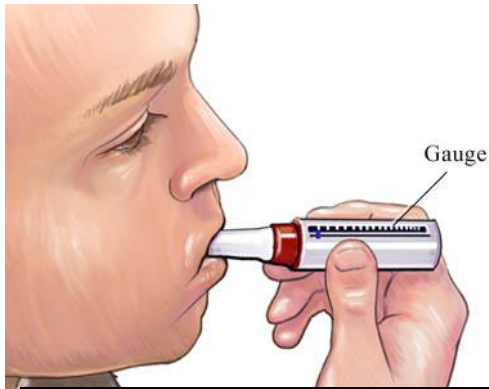
Peak flow measures how quickly you can blow all the air out of your .....

You use a ..... .....

Readings	
Average	

A reading of below ..... for your average peak flow suggests you might be suffering from .....

## Peak flow investigations



If you blow into the peak flow meter ten times within one minute, what happens to your readings?

What does this tell you about your lungs?

Practice slow, deep breathing for 2 minutes, and then take your peak flow reading. How does the reading compare with normal? Why?

Hold your breath for as long as you can, and then take your peak flow straight away. What does this tell you about how well your lungs work when out of breath?

Target - Measure body mass







Measuring body fat is not the same as measuring your weight.

Your weight depends on how tall and how muscular you are too.





Measuring body fat can be low tech - using skin calipers.

This estimate the total fat in you body by looking at how much is under your skin.



Body fat analysers are hi-tech. They pass a small electric current through you and measure your total body fat - what is on the inside as well as under the skin.



Measure your body fat either under your arm or at your waist. Take the reading 3 times and work out an average.

Use the chart of height and caliper measurement to assess your body fat.



Weigh yourself on bathroom scales.

Follow the instructions to find your percentage body fat. Do this 3 times and work out an average.

## Body fat measurements.

To measure body fat I used a set of \_\_\_\_\_  
\_\_\_\_\_ (low tech) and a body fat  
\_\_\_\_\_ (hi-tech).

Caliper measurement	
First	mm
Second	mm
Third	mm
Average	mm

Analyser measurement	
First	%
Second	%
Third	%
Average	%

Body fat depends on your \_\_\_\_\_ and \_\_\_\_\_.

On average, \_\_\_\_\_ have more body fat than \_\_\_\_\_, but this does not mean they are fatter.

Too much body fat can lead to increased risk of h\_\_\_\_\_ d\_\_\_\_\_ or s\_\_\_\_\_.

To reduce your body fat you should -