

A seven part series exploring the fantastic world of science.

# HOW DOES MY BODY WORK?



# Feeding and Digestion.

Find out how your body processes food.

## 1 Mouth

The teeth in your mouth are involved in the first stage of digestion. Teeth are used to bite and chew food, which is then mixed with saliva.

## 2 Gullet

When you swallow your food it travels from your mouth to your stomach down through your gullet (oesophagus).

## 3 Stomach

Your stomach contains very strong acid, which helps to break down your food as it churns. The stomach has a mucous lining to protect the stomach wall from the acid. Food can spend several hours in your stomach. During this time the food is turned into a creamy mixture called chyme.

## 4 Small Intestine

The chyme leaves your stomach and enters the small intestine. As the chyme passes through the small intestine the nutrients are absorbed into the bloodstream. The chyme is pushed through the digestive system by contracting muscles, this is called peristalsis.

This is a picture taken inside the intestine.



## 5 Large Intestine

After leaving the small intestine, the chyme enters the large intestine. As the chyme passes through the large intestine the water is absorbed. The waste products that are left are then excreted from the body through the rectum.

## Did you know?

If you were to pull out your small and large intestines, they would stretch for 9 metres. That's nearly as long as a double decker bus!

**Have a go!**

Copy and cut out the descriptions on the activity sheet. Match them to the correct organ in the body using the poster inside.

# Excretion and Waste.

Find out how your body gets rid of waste products.



## Did you know?

That urine contains ammonia, which is good to treat jelly fish stings with!

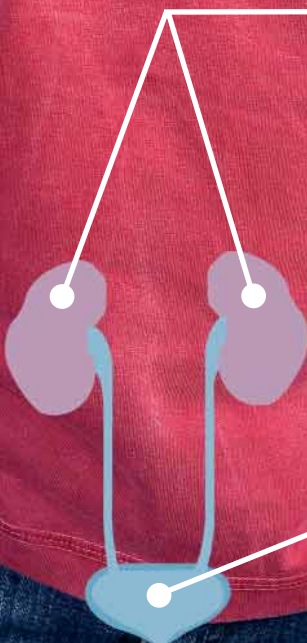
## Kidneys

You have two kidneys. These are bean shaped organs the size of your fist that are located in the middle of your back, just below your rib cage.

Although your kidneys are quite small they receive one fifth of the blood pumped around your body by your heart. Your kidneys receive so much blood because their main function is to clean and filter it.

## Bladder

The waste product of your kidneys is called urine. Urine contains any excess water and all unwanted substances that your kidneys have filtered out of your blood. Urine is then transported from your kidneys to your bladder by two tubes called ureters. The urine is stored in your bladder until you visit the toilet and excrete it.



# Support and Movement.

Discover how your skeleton supports you and helps you to get about.

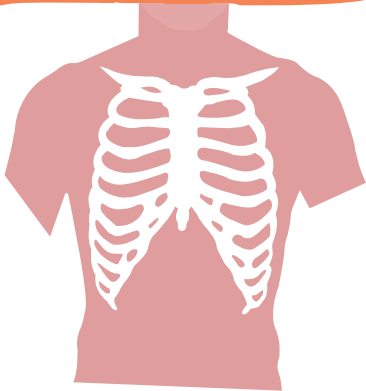
## Did you know?

Your skeleton provides shape and forms a frame under your skin. If you didn't have a skeleton you would just be like a big pile of jelly on the floor.



### Skull

Your skull is actually made of lots of different bones. Some of these bones protect your brain, whilst the others form the shape of your face. The only bone in your head that can move is your lower jawbone, which means that you can eat and talk!

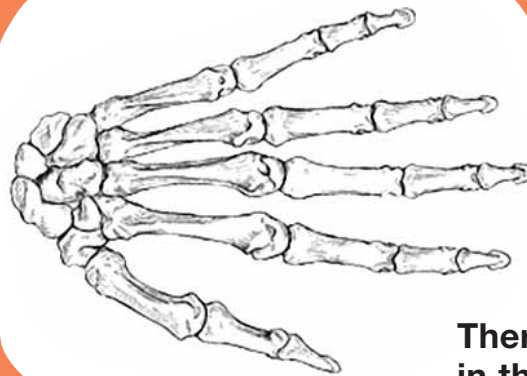
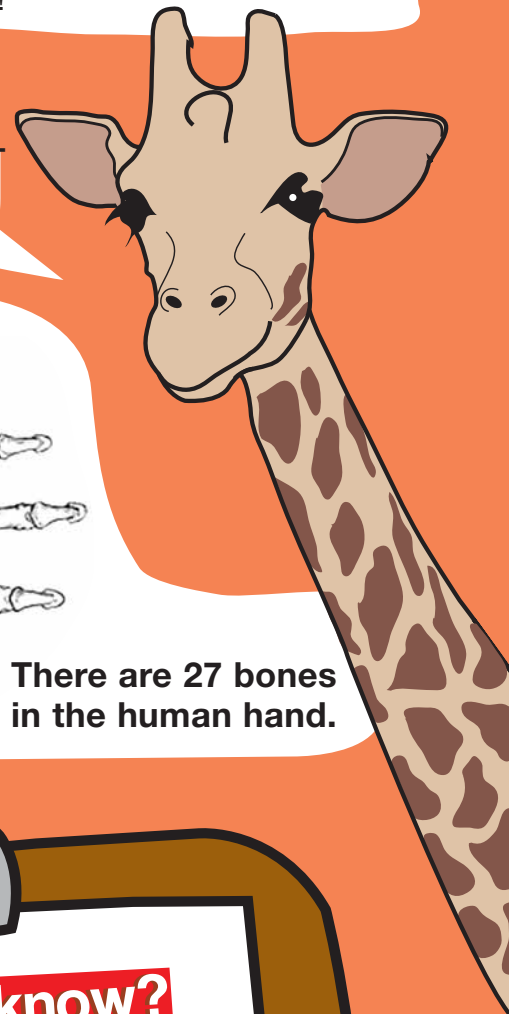


### Ribs

Your ribs act like a cage around your heart and lungs. Most people have 12 pairs of ribs, but some people are born with one more or one less pair. All your ribs are attached to your spine at the back of your body. The top 7 pairs of ribs are attached to a strong, flat bone in the centre of your chest called the sternum.

## Did you know?

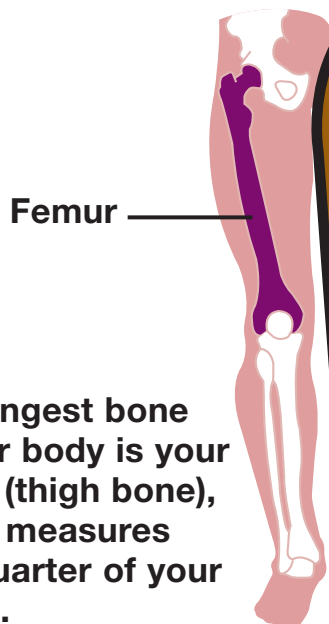
A giraffe has the same number of bones in its neck as a human does!



There are 27 bones in the human hand.

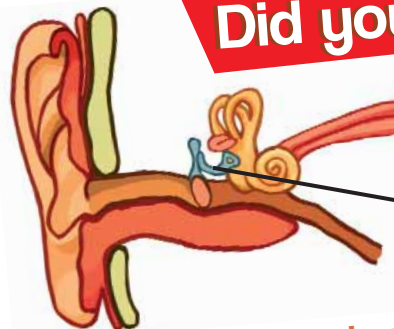
## You have over 300 bones when you are born.

These bones grow together and fuse to form 206 bones in the adult human body.



The longest bone in your body is your femur (thigh bone), which measures one quarter of your height.

## Did you know?



Stirrup

The smallest bone in your body is the stirrup (stapes) bone, which is found in your ear. It only measures 2.6 – 3.3 millimetres. The bone was called this because it looks like the stirrups on a horse's saddle.

# Breathing and Circulation.

Find out how your heart and lungs keep you alive.

## Lungs

Your lungs are the organs that you use to breathe in and out. They can be found in your chest and are protected by your ribs. Watch your chest as you breathe. Can you see it rise and fall? As you breathe in your lungs fill with air and your chest rises and then when you breathe out your lungs empty and your chest sinks down.

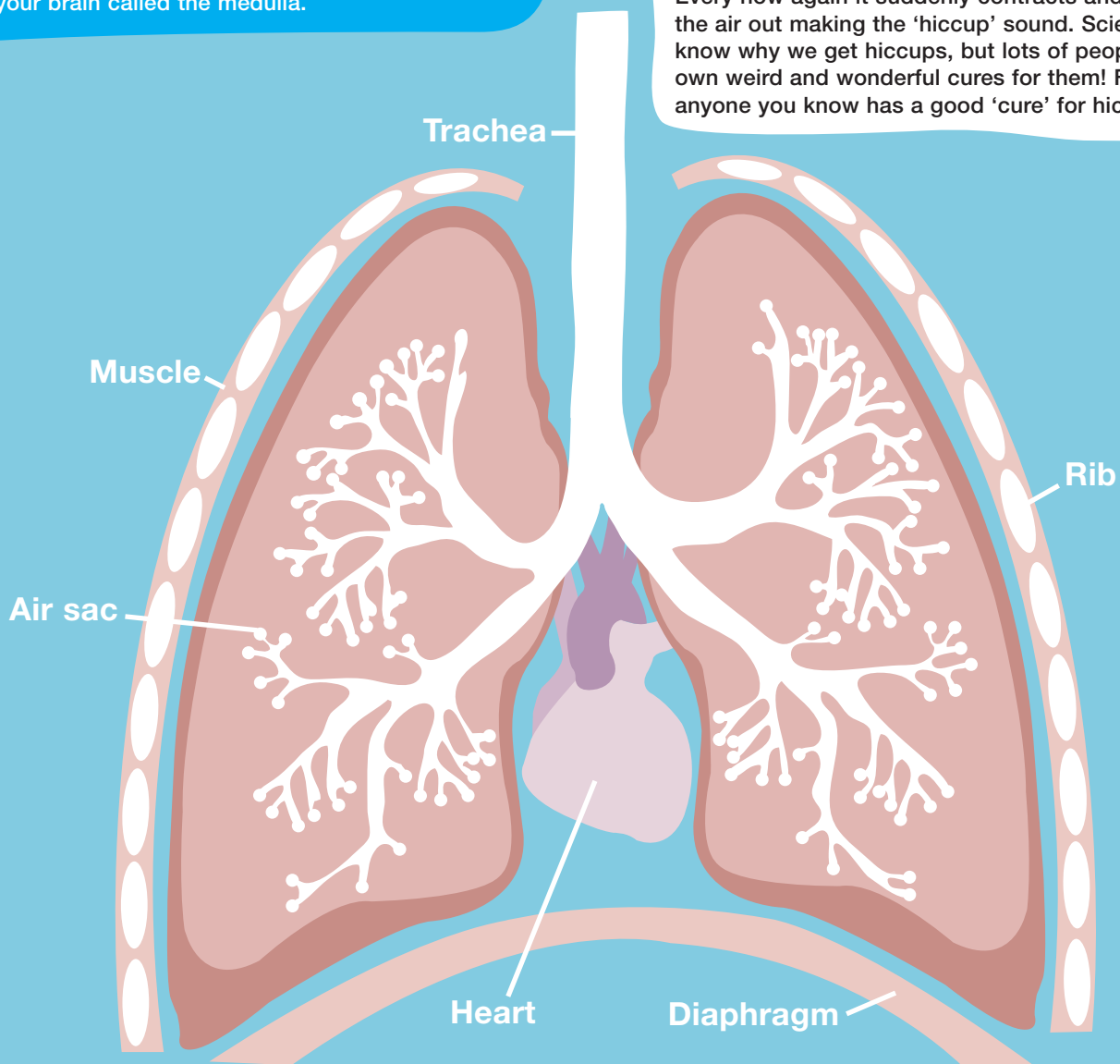
You don't even have to think about breathing. It is an automatic response that is controlled by an area of your brain called the medulla.

## Breathing and Circulation

The oxygen that you breathe is transported to the cells in your body by the blood in your circulatory system. Your circulatory system is made up of your arteries, veins and capillaries. The pump that sends the blood around your body is your heart.

## Do you know what hiccups are?

Your diaphragm moves to help you breathe in and out. Every now and then it suddenly contracts and this forces the air out making the 'hiccup' sound. Scientists do not know why we get hiccups, but lots of people have their own weird and wonderful cures for them! Find out if anyone you know has a good 'cure' for hiccups.



## Have a go!

You can feel your heart pumping the blood around your body in your arteries by taking your pulse. To take your pulse try placing your index and middle fingers on the side of your neck, just under your jaw or on your wrist nearest your thumb. But don't worry if you cannot feel anything, it can be quite tricky!

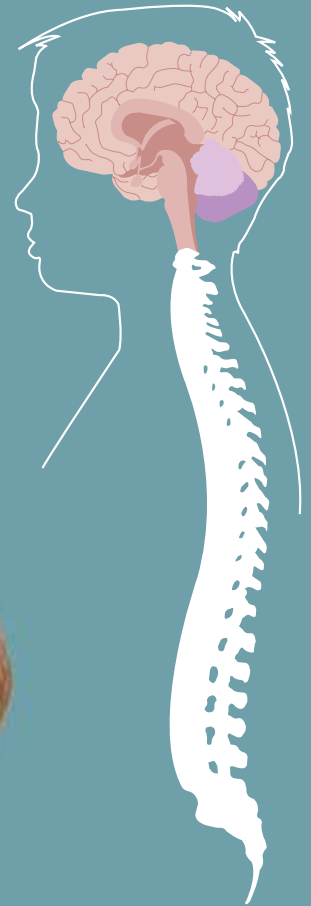
## Did you know?

Your heart is about the same size as your fist. Your heart beats around 100,000 times everyday! Your heart will pump approximately 160 million litres of blood around your body during your lifetime.

# The Brain.

Find out how your brain controls your body.

**The brain** is the organ that controls most of your body. Your brain is located within your skull. Your brain can be divided into different sections that are responsible for controlling different parts of your body or carrying out specific tasks. Your brain also stores information, such as things you learn at school and your memories and thoughts. As the centre of control, your brain is constantly receiving information from your senses.



## Senses

You have 5 different senses: sight, hearing, taste, smell and touch. Different parts of your body gather information and send it to the brain for processing.

## Smell

You smell using your nose. You have two nostrils that detect smells and send this information to your brain.

## Hearing

Your ears are used for hearing and balance. They convert sounds and noise in the air and send signals to your brain.

## Taste

Your tongue has over 10,000 tastebuds that you use to sense the difference between sweet, salt, bitter and sour flavours.

## Touch

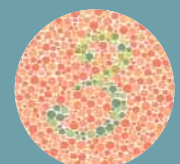
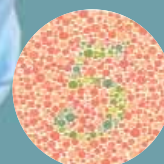
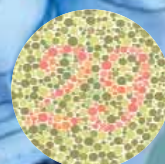
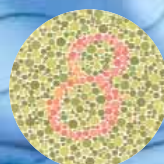
Your skin is covered with hundreds of tiny receptors, which can sense pain, pressure, touch and temperature.

## Sight

Eyes are your organs of sight and send information about what you see to your brain.

## Did you know?

Not everyone sees the world the same way. Most people have three kinds of light sensitive cells in their eyes. But people with red-green colour blindness only have two different kinds of cells. Do you have difficulty telling red from green? What numbers can you see in the circles below?



Have a go!

# Measuring your own body.

Make a copy of the activity sheet and take measurements of your own body.

Name \_\_\_\_\_

My height is \_\_\_\_\_ m \_\_\_\_\_ cm.

**Did you know?**

The span of your arms is equal to your height.

The circumference of my head is \_\_\_\_\_ m \_\_\_\_\_ cm.

The length of my lower arm is \_\_\_\_\_ m \_\_\_\_\_ cm.

**Did you know?**

The length of your lower arm is the same length as your foot.

The circumference of my calf is \_\_\_\_\_ m \_\_\_\_\_ cm.

My hand span is \_\_\_\_\_ m \_\_\_\_\_ cm.

My little finger measures \_\_\_\_\_ m \_\_\_\_\_ cm.

Have a go!

# What am I?

Make a copy of the activity sheet, cut out the statements and match them to the correct body part on the poster.

Contains the contents  
of your last meal.

Together these meas-  
ure 9 metres  
in length.

Pumps blood around  
your body.

You have a pair of  
these in your chest.

Controls your  
whole body.

You have 2 bean  
shaped organs.

Contains your teeth  
and tongue.

Stores urine until you  
visit the toilet.