

Functions of a skeleton

LAST WEEK YOU LOOKED AT ANIMALS AND THE DIFFERENT TYPES OF SKELETONS.

THIS WEEK WE WILL FOCUS ON A HUMAN SKELETON AND WHY IT'S SO IMPORTANT.



The human skeleton

The human skeleton is made up of lots of bones attached together.
These bones come in lots of different shapes and sizes but they all have a purpose and reason for being there.
An adult has around 206-208 bones in their body.
As children grow older, their bones grow bigger.

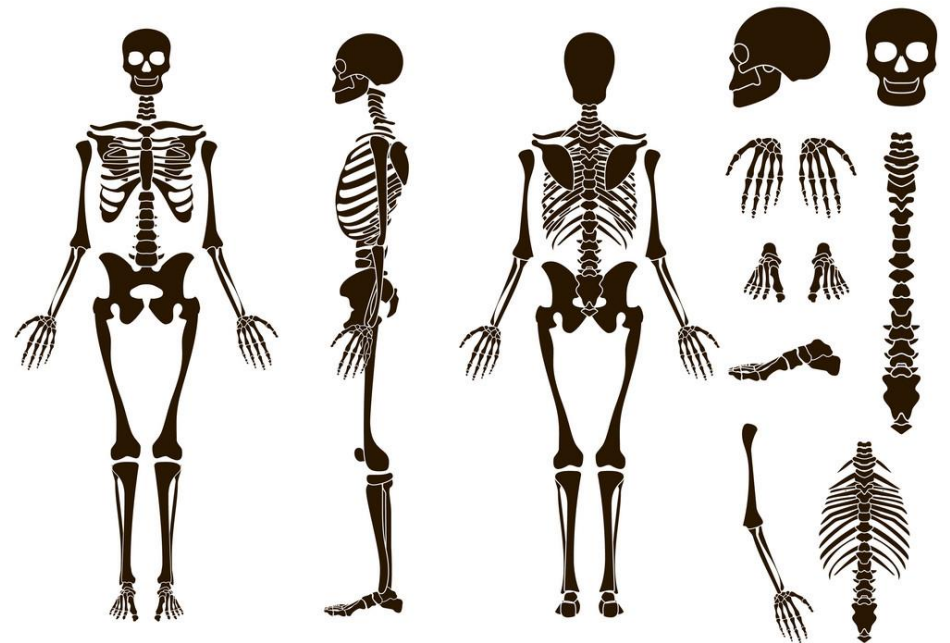
Bones are very strong but are also very light.

Think about the bones inside your body.

Can you name any bones that are inside your body?

Where do you think the smallest bone in your body is?

Where do you think the biggest bone in your body is?



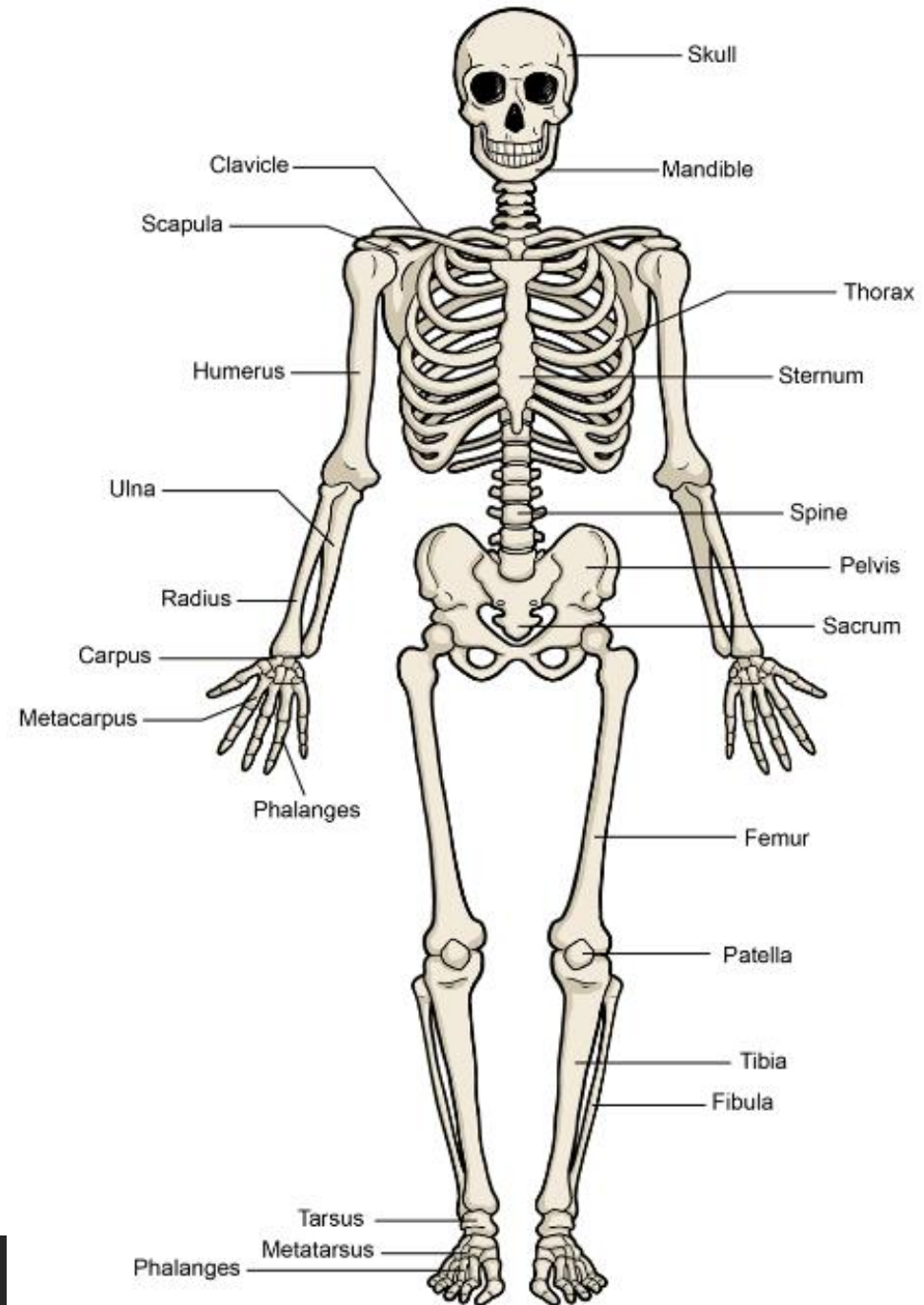
Here is your skeleton labelled.
Did you manage to name any of them?

Smallest bone- **stapes** found in the ear

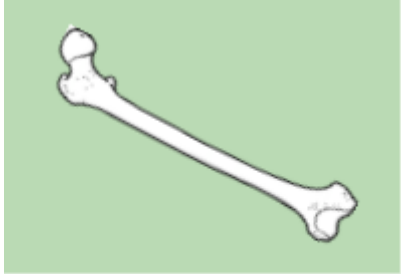
Biggest bone- **femur** found in your leg

Have a good look at the human skeleton and see if you can remember some of the bones and their names.

On the next page, there is a little quiz to see if you can remember where these bones are.



1.



femur

2.



metacarpals

3.



thoracic cage

4.



humerus

5.



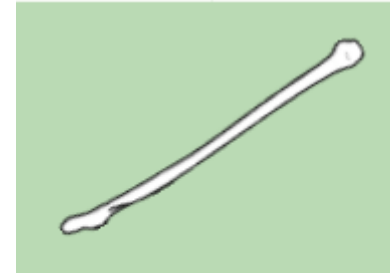
patella

6.



metatarsals

7.



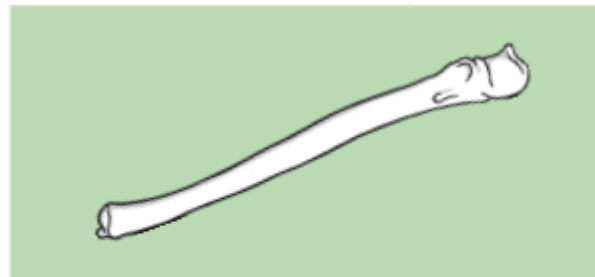
fibula

8.



pelvis

9.



ulna

Last week some of you were set the challenge of finding out the 3 main jobs of a human skeleton. A human skeleton is so important for our bodies because it gives us:

Support



Supports our body to stay in an upright position.

Protection



Protects all our internal organs that help to keep us alive.

Movement



Allows us to move freely and complete day to day activities.

Support-keeps us upright

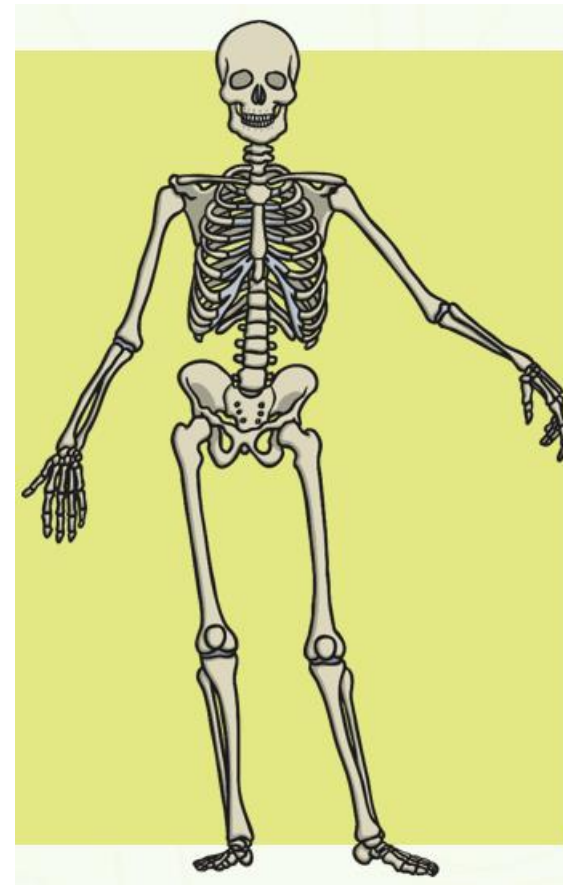


We have a **spine** that runs throughout our whole body. It is made up of 33 little bones all attached together.

The spine is sometimes known as the **backbone** or **the vertebra column**.

This is the main support for our skeleton and keeps our body upright.

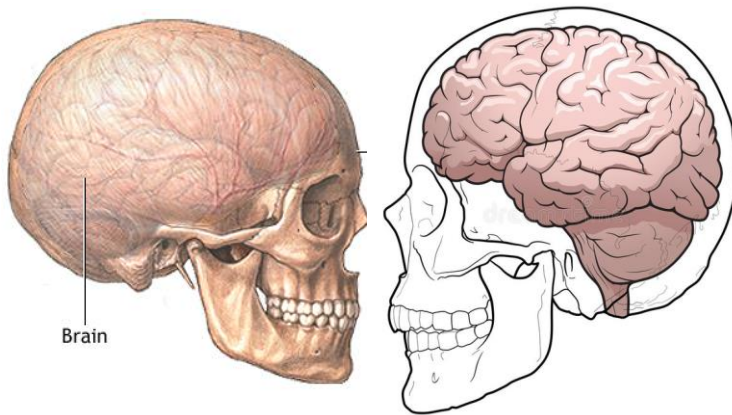
If we didn't have a skeleton our bodies would be like a jelly fish.



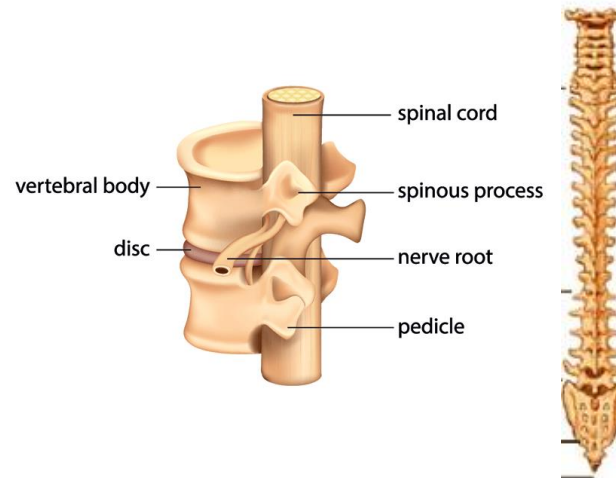
Protection of our organs

The bones of the skeleton protect our internal organs and reduce the risk of injury or damage to them. The organs in our body are important in keeping us alive so it's important that they are protected. Here are some of the bones and the organs they protect.

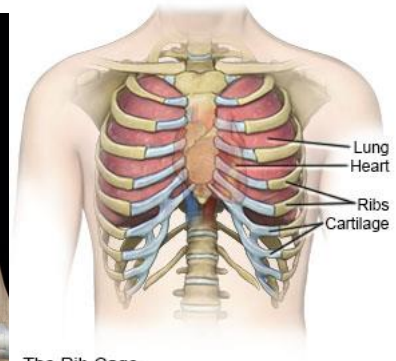
Cranium/skull protects the brain



Vertebra column protects the spinal cord



Rib cage – heart and lungs



The Rib Cage

Movement-Joints

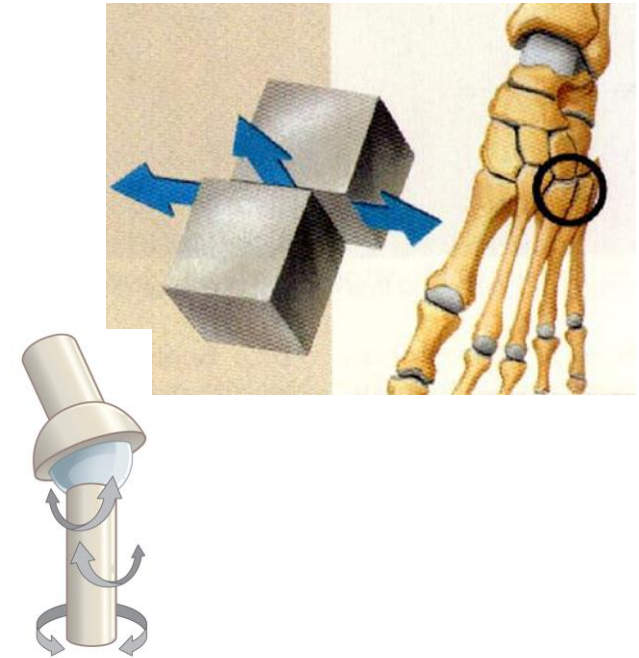
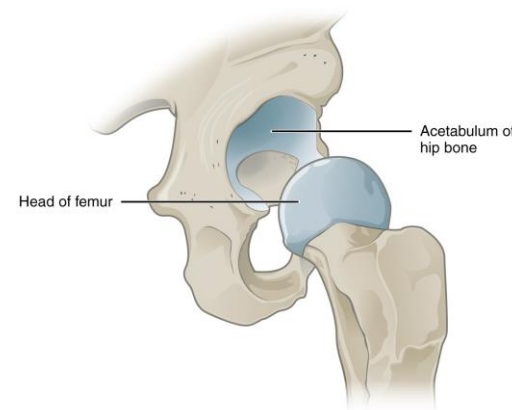
Our body is able to freely move because where our bones meet we have joints. There are different types of joints in our bodies which allow us different amounts of movement.

Think about it...can we move our neck/head as much as we can move our arms? Can we move our leg in the same directions as our fingers?

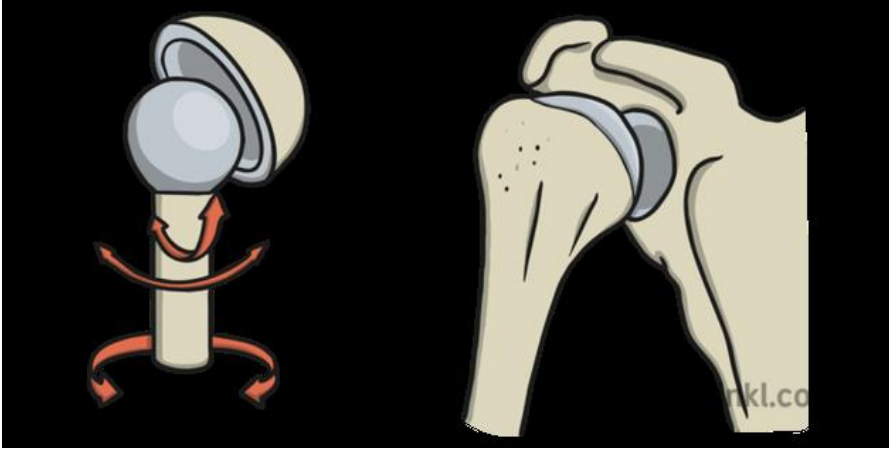
No and that's because of the different joints in our bodies!

The 3 main joints we are going to look at are:

1. Ball and socket joint
2. Hinge joint
3. Gliding joint



Ball and socket joint

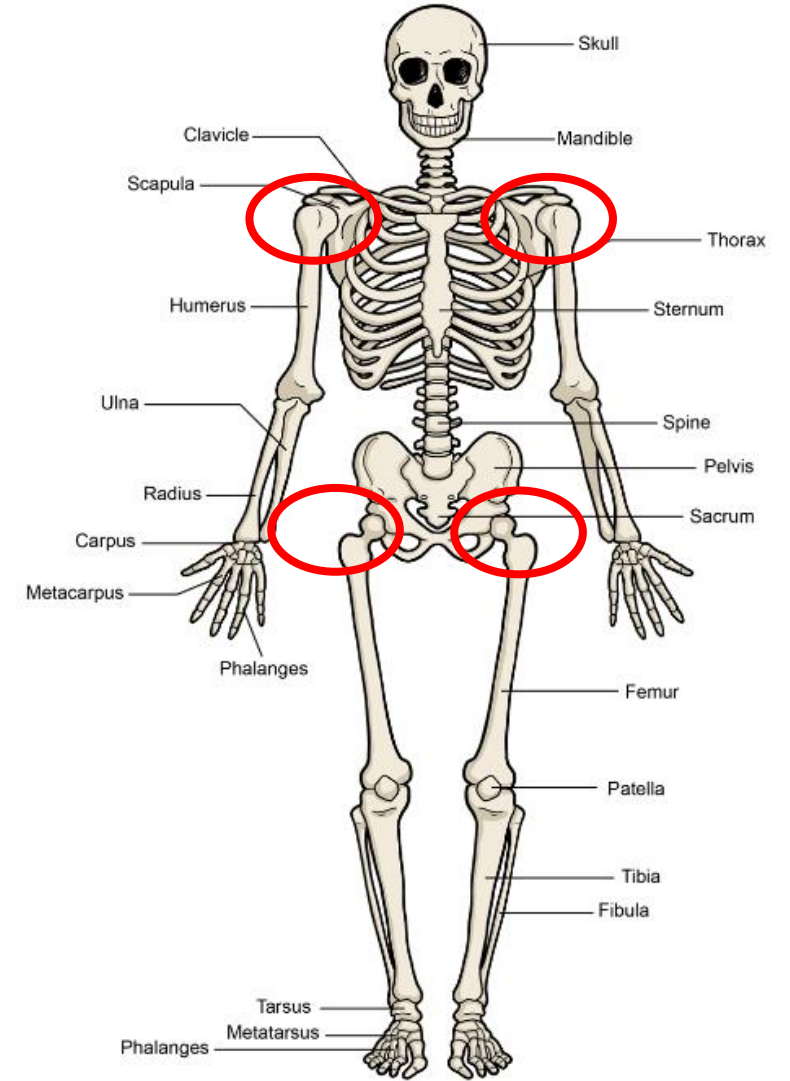


A ball and socket joint allows you to swing parts of your body in different directions.

It allows you to rotate in 360° allowing a lot of flexibility and movement.

Your **hip joint** and **shoulder joint** are both ball and socket joints.

<https://www.youtube.com/watch?v=zP026ZoeG6M>



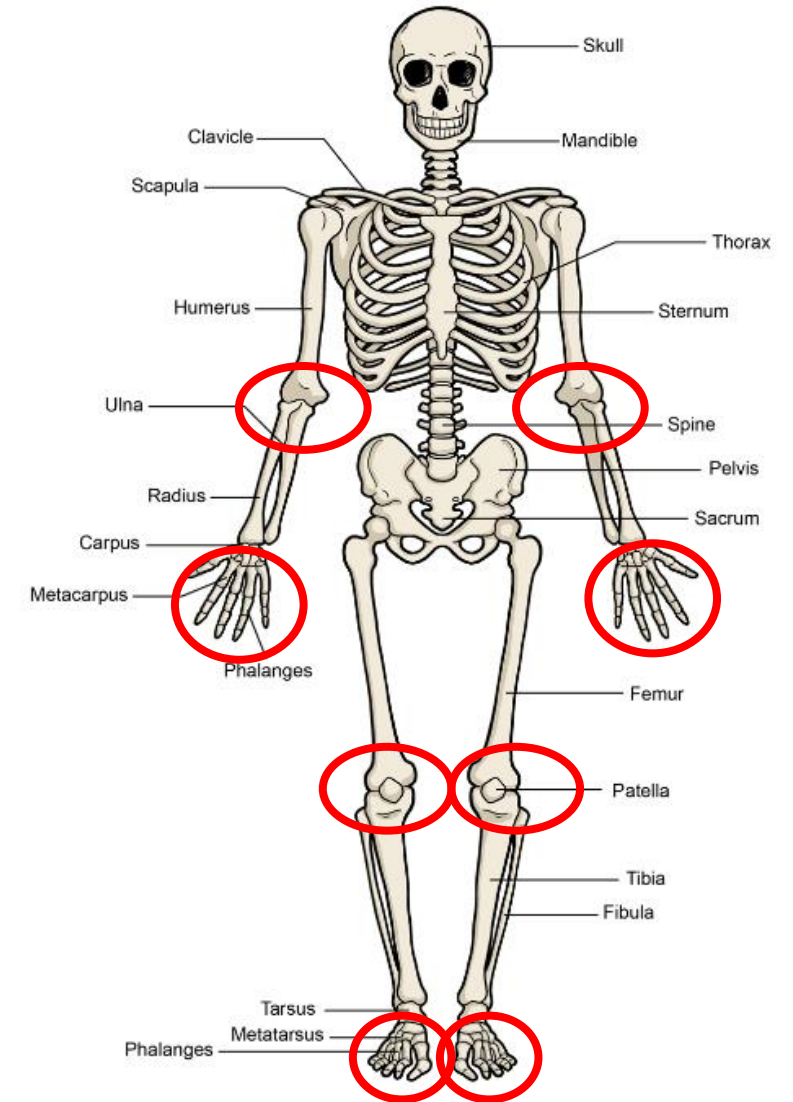
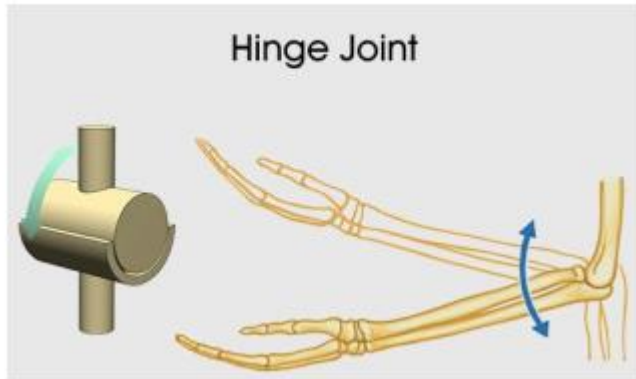
Hinge joint

Allows movement similar to a door or hinge. They work like a lever and allow movement of 180° .

It allows **movement up and down** but not side to side.

Elbows, knees, ankles and fingers are all types of hinge joints.

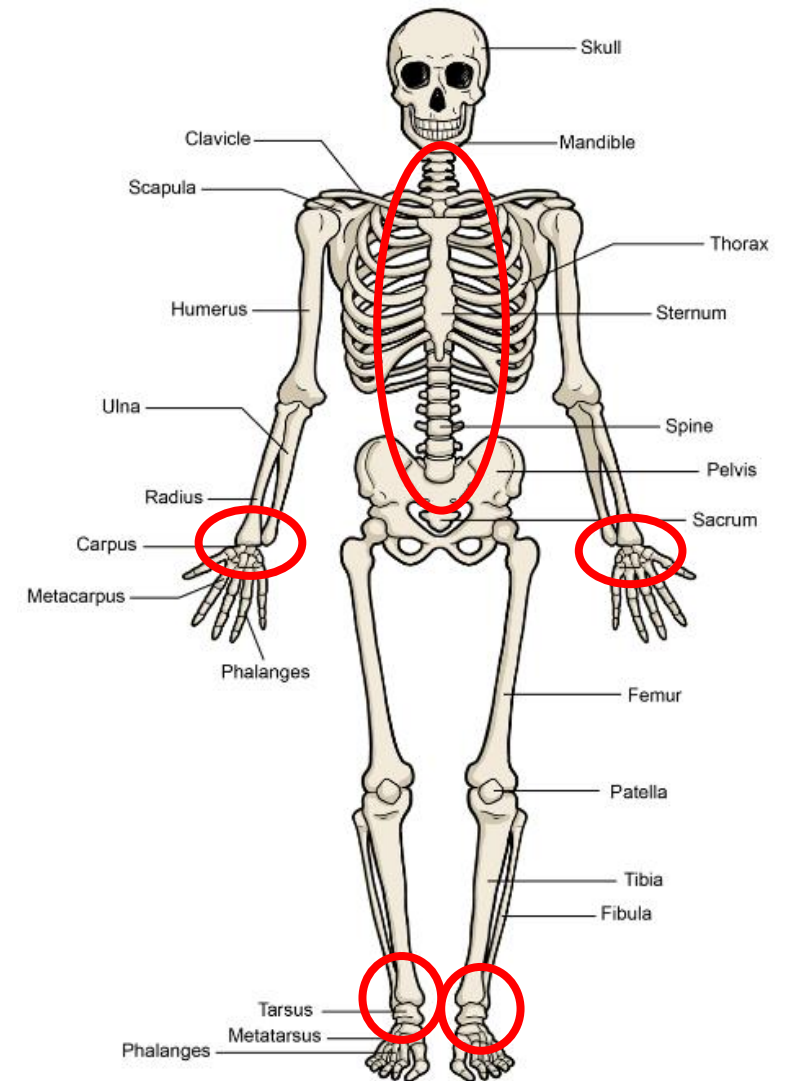
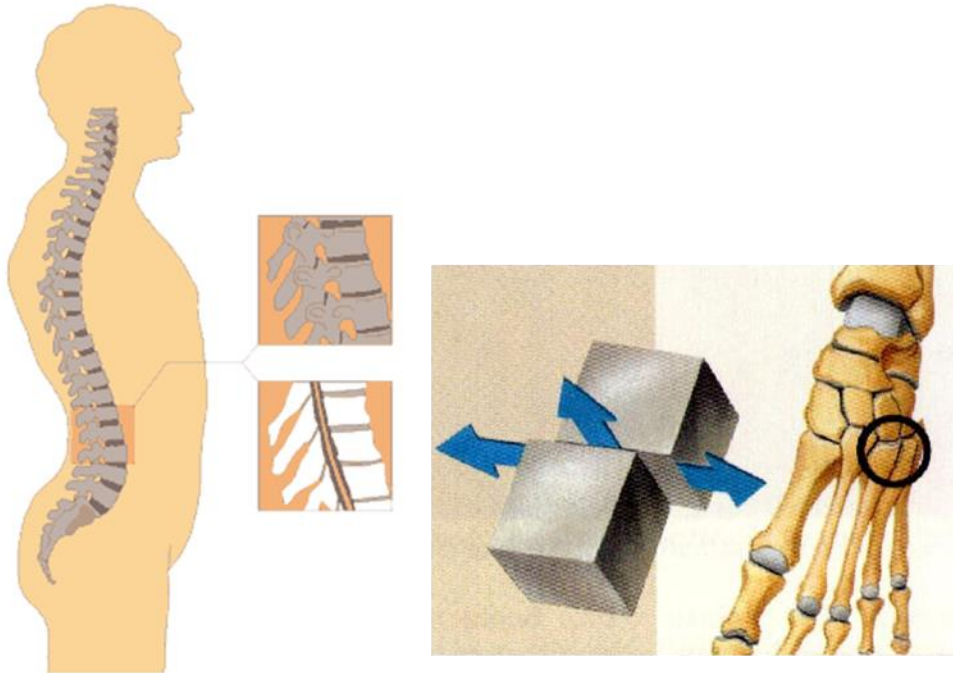
<https://www.youtube.com/watch?v=fBGU1U5YzSM>



Gliding joint

This joint is where bones have to glide against each other in order to help you move.

Your backbone, wrist and ankles is an example of a gliding joint.

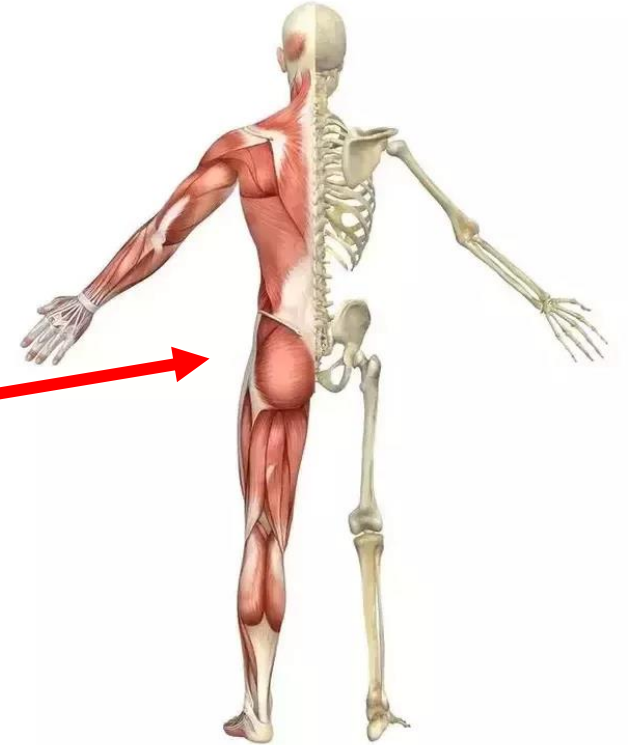


Movement-muscles

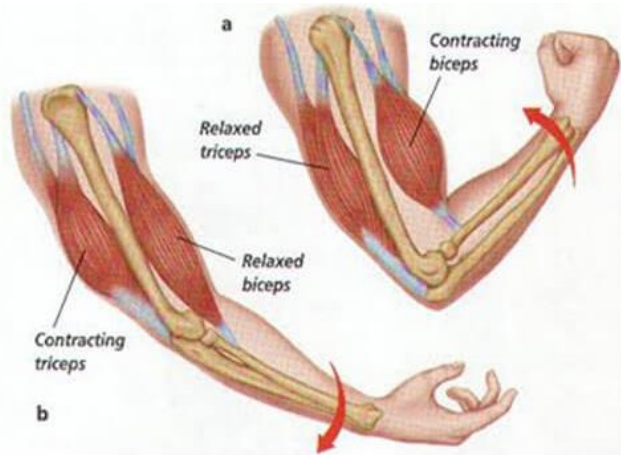
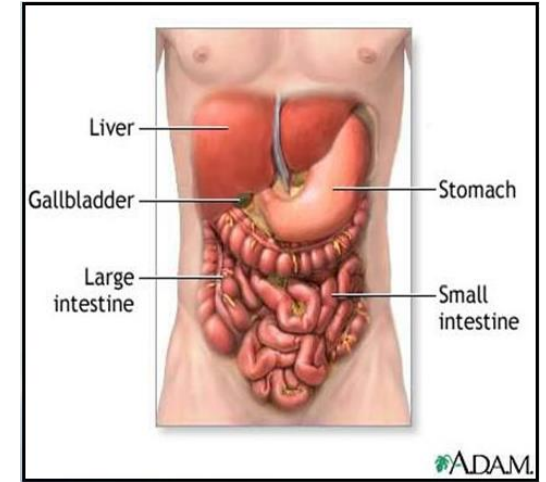
For our skeleton and joints to actually move we have to rely on muscles. Our whole skeleton is covered in muscles.

Muscles are attached to our bones. They help us to move. There is also muscle around some of our organs.

There are 2 different types of muscles:
involuntary and **voluntary**



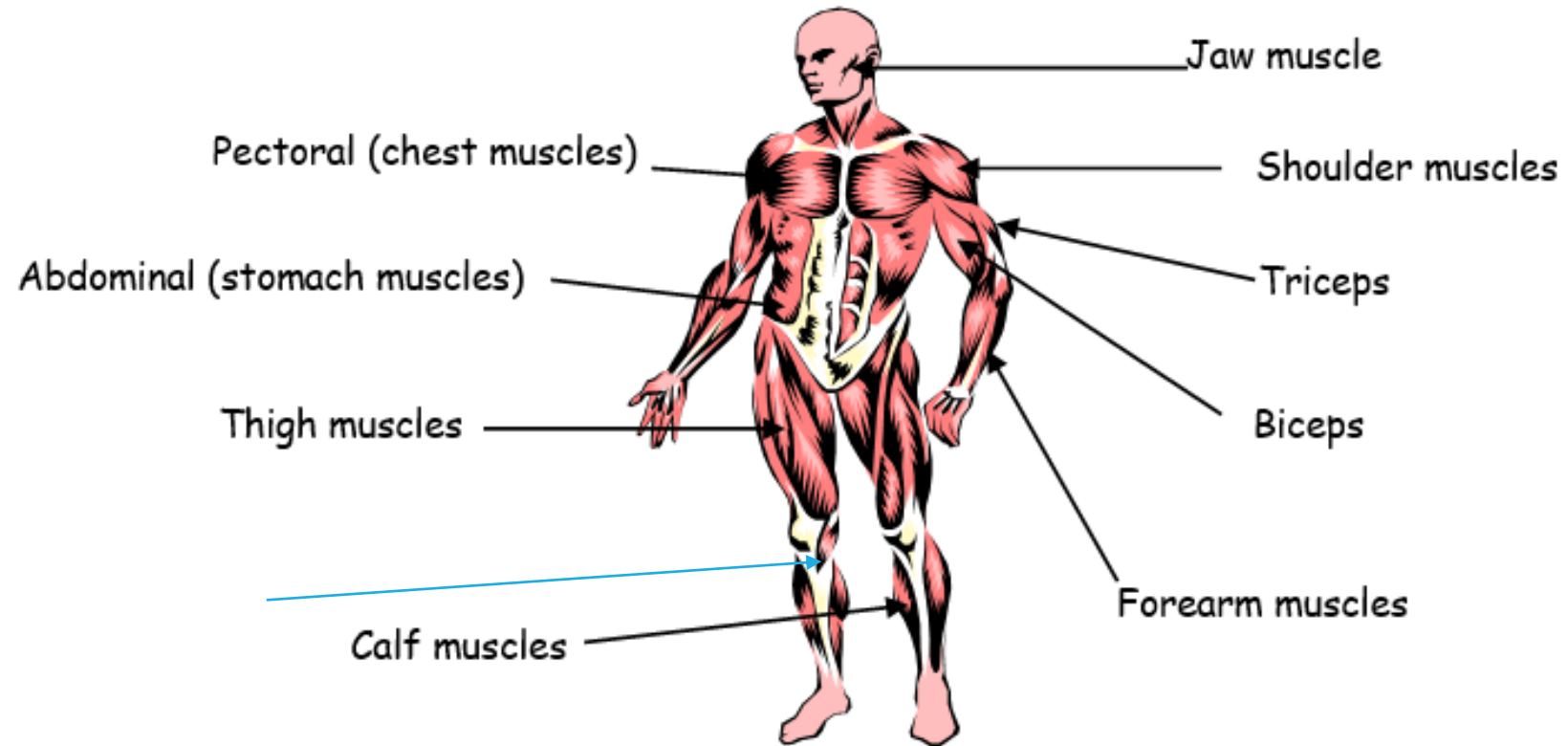
Involuntary muscle movement - You cannot control this type of movement. Your brain and body tell these muscles what to do without you even thinking about it. Think about your organs – our heart pumps because it is surrounded by muscles and has to move to keep us alive. Our digestive system is made up of involuntary muscles too.



Voluntary muscle movement - You are in control of making these muscles move. Most of them move your bones around. If you want to run, walk, ride a bike or wave your arms around, it is your voluntary muscles which move your arms, legs and body around. But they can't do that unless your brain sends the right muscles the messages to 'contract' or 'relax'.

<https://www.bbc.co.uk/bitesize/clips/zj2kjxs>

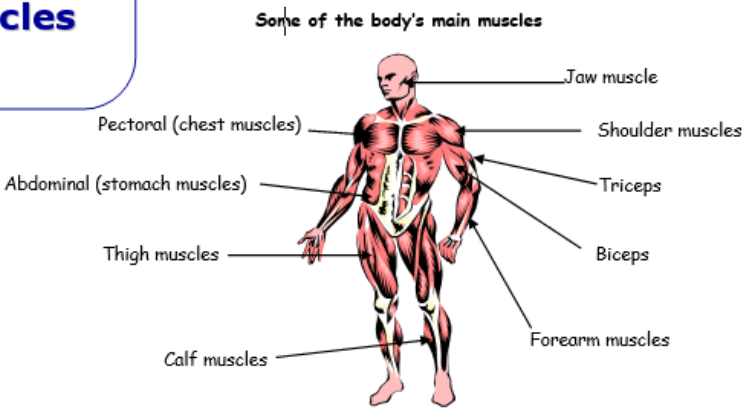
Some of the body's main muscles



Now go and watch Miss Penfold’s video all about using muscles and joints in day-to-day activities.

Then see if you can complete the worksheet to identify what joints and muscles are working during different activites.

Identifying and using muscles and joints



Complete the table by identifying the main muscles and the joints used when carrying out the following everyday household activities and jobs:

EXERCISE/ACTIVITY	MUSCLES USED	Joints used (ball and socket, <u>hinge</u> or <u>gliding</u>)
walking up stairs	*	
drinking	*	
washing the dishes	*	
vacuum cleaning	*	
brushing your teeth	*	
flushing the toilet	*	
getting out of bed	*	
opening a door	*	

Answer the following questions by typing each answer in the text box.

1) What happens to a muscle when it contracts?

*

2) What are all of our muscles attached to?

*

3) Explain two ways by which we can keep our muscles strong and healthy.

*