EMPIRIBOX

Primary School Science

Here at Empiribox, we combine keeping our bodies fit and healthy whilst learning about how they work. We see the two things running parallel and give children the chance to explore how to care for themselves at the same time as learning about their eyes, ears, organs and muscles work.

In this class activity, you will learn about the purpose of the joints, how they move and where they all are.

Spectacular Science

The Human Joints

What is the purpose of joints in a skeleton?

The joints are very important parts of the skeletal structure, with 3 main functions.

1. To connect bones together
2. To enable movement
3. To support body weight

There are 360 joints in total in the body, but we will only be focussing on 8! Below is a list of the joints, how they move and where they are in the body.

1. Neck

*Located at the top of your spine, between your head and shoulder, this is a **pivot** joint, allowing movement side to side, although you can move your neck up and down but this is not the joint moving*
***Bones connected:** the vertebra (spine)*

2. Shoulder

*Located at the top of your arm by your neck, this is a **ball and socket** joint meaning that it is the most mobile type of joint and can move almost the whole way around*
***Bones connected:** humorous, scapular and clavicle*

3. Elbow

*Located half way down the arm, this is a **hinge** joint meaning that it moves like a door opening and closing and only allows movement in these directions*
***Bones connected:** humorous, ulna, radius*

4. Wrist

*Located at the end of your arm, this joint is a **gliding** joint connected your arm to your wrist. Gliding joints enable you to move in any direction, but with more limited range than a ball and socket*
***Bones connected:** ulna, radius and carpal bones*

5. Finger

*The finger joint(s) are **ellipsoidal** joints, meaning that they allow movement forwards, backwards and a little bit side to side, but rotation is limited*
***Bones connected:** the metacarpal and phalanges*

6. Thumb

*Located on your hand, this is the only joint in the body that is a **saddle** joint, meaning it can move side to side and up and down, but with limited rotation*
***Bones connected:** the metacarpal and phalanges*

7. Hip

*Located at the top of your leg where it meets the torso, this is a **ball and socket** joint meaning that it is the most mobile type of joint and can move almost the whole way around*
***Bones connected:** femur and pelvis*

8. Knee

*Located half way down the leg, this is a **hinge** joint meaning that it moves like a door opening and closing and only allows movement in these directions*
***Bones connected:** femur, tibia and fibula*

Activity – can you name all the joints in the body and explain how they move?

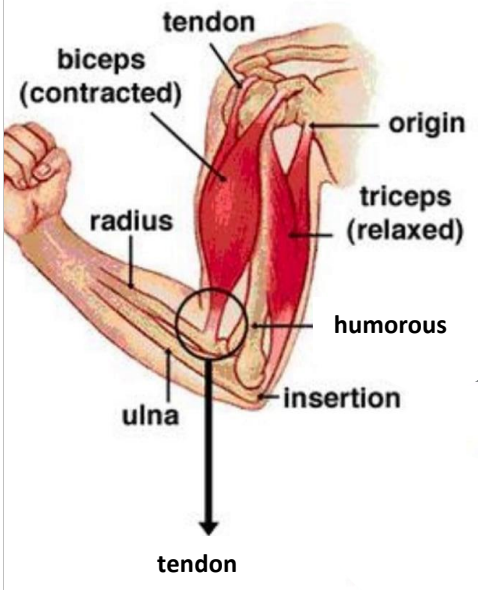
Using the table provided below, ask children if they can name the joint, find out where it is located on the body and figure out how it moves.

Top Tip
For more advanced pupils, see if they can name the bones that the joint is connecting, ie the elbow connects the humorous, ulna and radius.

Younger children can explain how joints move by using their own body! Ask them to point and demonstrate the different joints in their bodies and try to get them to use the proper terminology like **hinge, ball and socket, pivot** etc.

Class discussion

Children may be asking how the joint is able to move. This is made possible by things called **tendons and ligaments** that hold everything together.



Tendons attach muscle to bone. This means that when you flex your bicep to move your forearm up, the tendon is pulling the arm up from the force of the bicep.

Ligaments attach bone to bone and hold the skeleton in place.

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Joint	Location	Movement	Bones
Neck			
Shoulder			
Elbow			
Wrist			
Finger			
Thumb			
Hip			
Knee			