



# Joints

There are joints between nearly all bones. They allow the bones to move in a variety of ways.

**Q1.** Name the bones labelled X and Y.

X .....

Y .....

**Q2.** What kind of joint do the two bones make?

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.....

**Q3.** Name the parts of the joint labelled A, B and C.

**Q4.** What is the purpose of A?

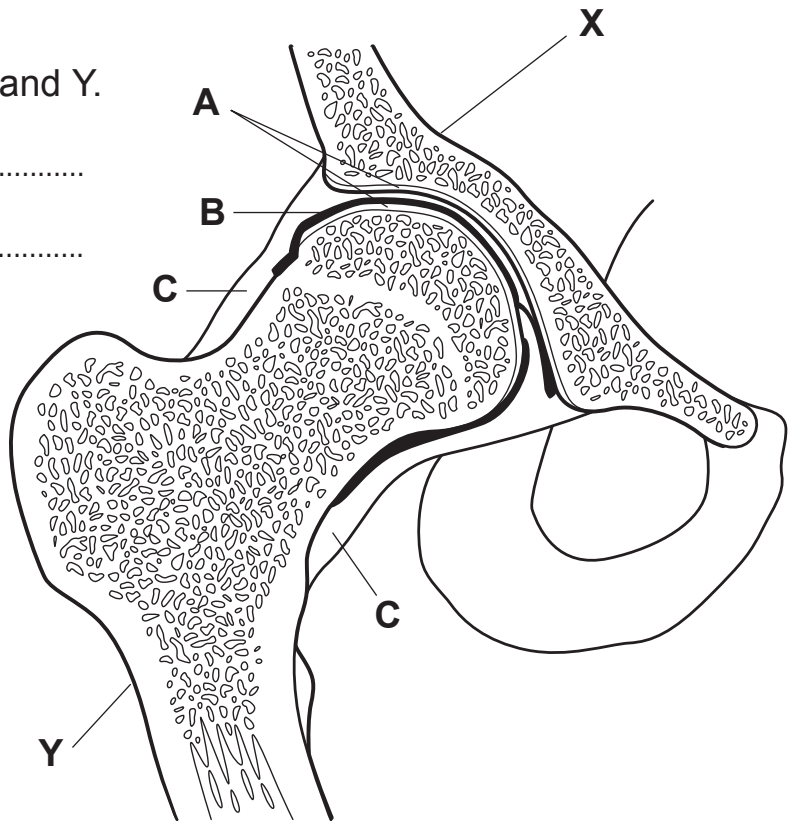
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**Q5.** What is the purpose of B?

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**Q6.** What is the purpose of C?

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## Introduction

You may begin by saying that we take the joints between our bones for granted so we need to spend some time looking at what they allow us to do. Ask members of the class to flex their arm then, by using the shoulder joint only, raise and lower it, move it backwards and forwards and in a circular motion.

Follow this by asking the members of the class to flex their arm again and raise and lower the hand using only the hinge joint at the elbow. Ask them now to reach forwards and to describe the actions at the shoulder and elbow joint. Ask them to reach forwards and pick something up and then describe the movements made by the gliding joints in the hand. Finally, ask them to hold out a hand, palm uppermost, and grip the ulna and radius near the wrist with the other hand. They should then turn their hand palm down. They should be surprised to feel their bones swivel over one another as the bones move in their pivot joint.

## Practical work

### 13: Joints

## Integrating the practical work

You may use the practical as an extension of your introduction or you may use it at the end of the spread to help summarise ideas about joints.

## Extension worksheet

Pages 109 and 122.

## Links

**Bones**, pages 24–25; **The skeleton**, pages 26–27; **Muscles**, pages 30–31; **Keeping fit**, pages 42–43.

## Background

The pivot joint in the neck which allows the head to turn is of a different construction to that in the arm. The top vertebra, called the atlas, has a hole in it which contains a peg of bone from the vertebra beneath it called the axis. Muscles move the atlas so that it pivots round the peg to turn the head from side to side.

Incidentally, the nodding of the head is possible due to the way the skull is connected to

the top surface of the atlas. There are two lumps of bone at the base of the skull on either side of the hole through which the spinal cord passes. These lumps rest on two flat surfaces on the upper side of the atlas and allow the skull to rock forwards or backwards when neck muscles pull on it.

The action of the joints in the arm may be studied further with the practical.

## Answers

- Q1. X Hip bone, Y Thigh bone.**
- Q2. Ball and socket joint.**
- Q3. A Cartilage, B Liquid, C Ligament.**
- Q4. Protects the ends of the bone from wear.**
- Q5. Reduces wear.**
- Q6. Holds bones together.**