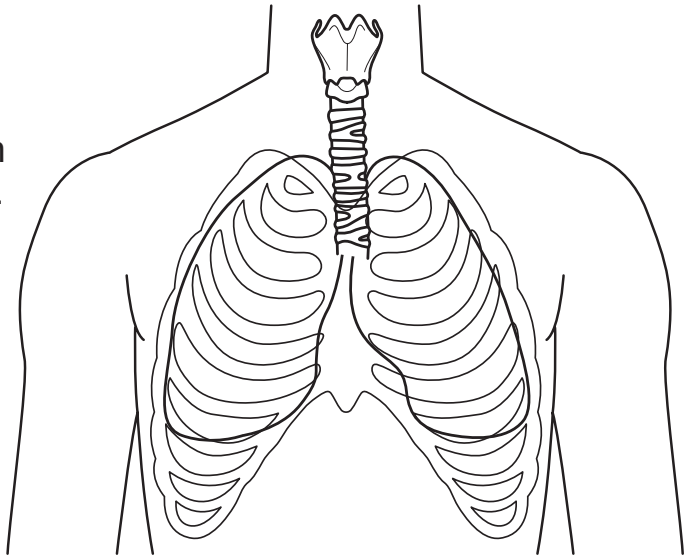
Name: ..... Form: .....

See **pages 20 and 21** of *The Body Book*

The Heart

The heart is a pump made of muscle. Its job is to pump blood around the body.

Q1. Draw in the position of the heart in this body.



Q2. Where is the blood going that follows arrow A? Is this blood rich or poor in oxygen?

✎ .....

.....

Q3. Where is the blood going that follows arrow B? Is this blood rich or poor in oxygen?

✎ .....

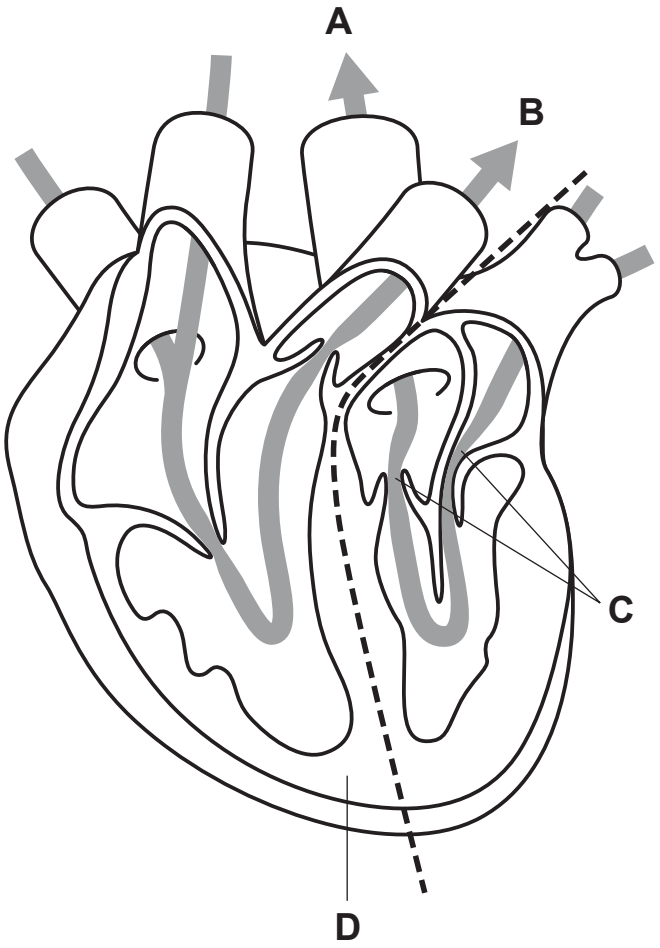
.....

Q4. What are the parts labelled C?

✎ .....

Q5. What is D made of?

✎ .....



9 Teacher's sheet: Comprehension

See **pages 20 and 21** of *The Body Book*

ANSWERS

Introduction

At the outset you should make sure the class knows how the heart is represented in the book. In Diagram 1 the heart is in the chest of a person facing the reader. It can be clearly seen that the left side of the person's heart is on the reader's right. This convention is commonly used in diagrams of the heart. They are nearly always presented as being viewed from the front of a person's chest, so the left side of the heart is on the reader's right and the right side of the heart is on the reader's left. It is important for the class to secure this knowledge as it will help them in their descriptions of how the blood passes through the circulatory system later.
When the children are sure about the anatomy of the heart move onto the heart cycle on page 21.

Practical work

9A: Find the pulse

9B: Investigating the pulse

Integrating the practical work

When the students have read about the heartbeat on page 21 of the *Students' Book*, try Practical 9A with them. When they are all sure how to take a pulse, move on to Practical 9B.

Extension worksheet

Pages 109 and 118.

Links

How blood circulates, pages 22–23; **Keeping fit**, pages 42–43.

Background

Although for simplicity we speak of the heart as a pump, it is in fact a double pump. The pump (ventricle) on the right side pumps blood to the lungs and the pump on the left pumps blood around the body. As the pump on the left has more work to do than the pump on the right, the wall of the left ventricle is thicker than the wall of the right ventricle. Heart muscle, called cardiac muscle, is different from the muscles which move the bones. Cardiac muscle contracts 100,000 times a day. The heart contains a structure made of nerves, called the pace maker, which synchronises the action of the muscles and keeps the heart beat regular. The brain receives messages from sensors in the circulatory system which monitor the condition of the blood. For example, if the carbon dioxide content is too high the brain sends messages to the heart to speed up its beat so more blood can pass through the lungs and more carbon dioxide can be removed. If the concentration of carbon dioxide is low the brain tells the heart to slow down.

The heart is supplied with its own blood vessels, coronary artery and veins. If there are too many fatty substances, such as cholesterol, in the blood the coronary artery may become blocked by the deposits. When this happens, part of the heart muscle does not receive the oxygen it needs and dies, causing a heart attack. If the topic of heart attacks arises it should be dealt with sensitively as members of the class may have relatives who have had one.

Answers

Q1. The heart should occupy an area about the size of the clenched fist and be a little left of centre in the chest. (Or see *Students' Book* page 20.)

Q2. The body. It is rich in oxygen.

Q3. The lungs. It is poor in oxygen.

Q4. Valves.

Q5. Muscle.