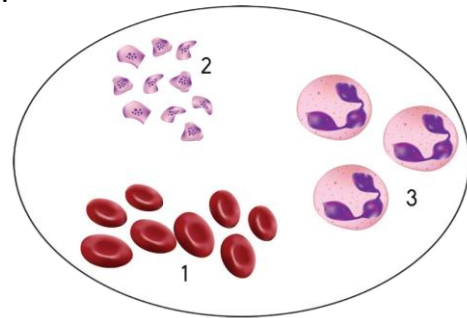


Exercise 4 page 63-62

1 Study the sketch and answer the questions that follow:



1.1 Provide labels for the sketch.

1: Red blood cells

2: Blood platelets

3: White blood cells

1.2 Where are numbers 1 and 2 produced?

In the bone marrow

1.3 What is the function of plasma?

It serves as transportation for nutrients.

1.4 Which cell (number 1, 2 or 3) protects the body against diseases?

3

1.5 What is the function of number 1?

It transports oxygen.

1.6 Which number is:

1.6.1 the largest particle of blood;

3

1.6.2 the smallest particle of blood?

2

1.7 Number 2's function is to make blood clot. Why is it important for blood to clot?

If blood could not clot, you will easily bleed to death even from a small cut or wound.

2. Name any two diseases linked to the circulatory system. Briefly describe these two diseases and give a cause of each.

Any two of the following:

Hypertension: Abnormally high blood pressure

Causes: High levels of stress, smoking, obesity, too little exercise, an unhealthy diet

Heart attacks: Blood clots block or severely restrict the cardiac artery and prevent blood supply to the heart.

Causes: High blood pressure and unhealthy lifestyle

Strokes: Blood flow to a part of the brain is cut off. Brain cells are deprived of oxygen and die.

Causes: Unhealthy lifestyle; high blood pressure

3. Complete the following table about the different blood vessels:

	Arteries	Veins	Capillaries
Function	Transfer oxygen-rich blood from	Transport	Bring blood into close contact with the cells in the organs.

	the heart to the organs.	deoxygenated blood from the organs to the heart.	Provide cells with nutrients and oxygen.
	Arteries	Veins	Capillaries
Size and thickness	Thick, muscular, elastic	Thinner, less muscular	Narrow, small tubes
Positions	Take blood from the heart to the organs.	Take blood from the organs to the heart.	Branches into small tubes in the organs.
	Arteries	Veins	Capillaries
Example	Aorta	Vena cava from the head to the heart	

4 Study the sketch of the heart and answer the questions that follow:

4.1 Use the following words and fill it in next to the correct number, so providing the sketch with labels. Aorta; left ventricle; right ventricle; muscular wall; pulmonary artery; vein to the heart; left atrium; right atrium

1: Right atrium

2: Vein to heart

3: Right ventricle

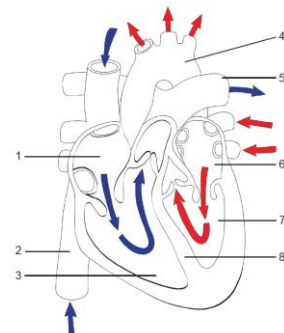
4: Aorta

5: Pulmonary artery

6: Left atrium

7: Left ventricle

8: Muscular wall



4.2 How many heart chambers does the heart consist of?

4

4.3 What is the difference in function between the upper and lower heart chambers?

The upper heart chambers receive blood from the veins.

The lower heart chambers pump blood to the body.

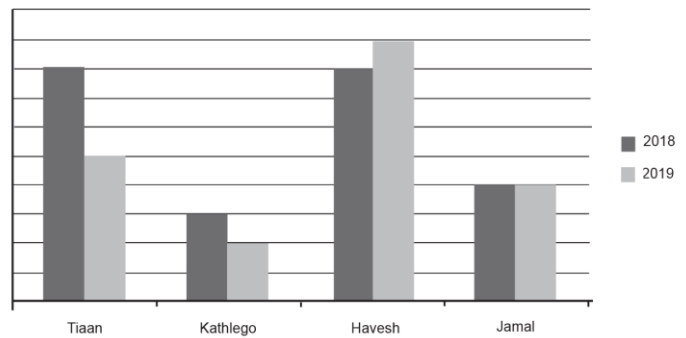
4.4 Where in the human body is the heart situated?

It is located in the chest between the two lungs.

4.5 Why is it necessary for the heart to be located behind the sternum and ribs?

It is protected by the sternum and the ribs.

5 The following graph indicates the cholesterol levels of four Grade 9 boys over two years. Study the graph and answer the following questions:



5.1 What is cholesterol?

Cholesterol is a fatty substance that is produced by the liver. Animal fats are a source of cholesterol.

5.2 What disadvantage does a high cholesterol level have for a person?

High levels of cholesterol may lead to strokes or heart attacks.

5.3 Which organ in the human body releases cholesterol?

The liver

5.4 To what does Kathlego probably owe his low cholesterol levels?

A healthy diet and an active lifestyle

5.5 Which one of the four boys most probably started following healthier diet in 2019?

Tiaan

5.6 Which one of the four boys has a greater chance of developing high blood pressure?

Havesh

5.7 Which two boys are most likely to be taking part in sport and following a balanced diet?

Kathlego and Jamal

5.8 Give three advantages that exercise has for the circulatory system.

Any appropriate answer is acceptable, for example:

Exercise lowers blood pressure and cholesterol levels and reduces the chance of heart attacks and strokes.

Exercise strengthens your heart.

It reduces stress and contributes to weight loss; reducing the chance of heart attacks and strokes.

Circulation in your body improves and your body uses oxygen more effectively.

5.9 What advice would you give Havesh to lower his cholesterol levels?

More exercise, more active lifestyle, healthier diet

6. What negative influence does the smoking of cigarettes have on the circulatory system?

Cigarettes contain nicotine.

Nicotine causes the body to secrete hormones that narrow the blood vessels.

Less blood flows through the veins, heart rate accelerates and this leads to high blood pressure.