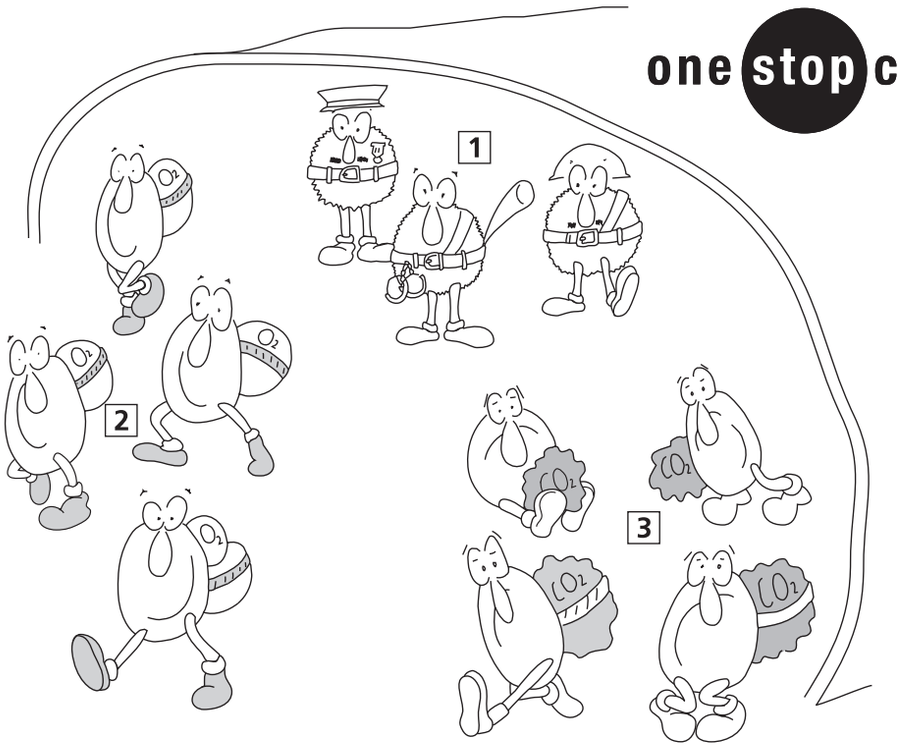
BIOLOGY

The circulatory system.



1 Match.

The circulatory system

a Blood carries oxygen around the body.

b Blood carries carbon dioxide and other waste.

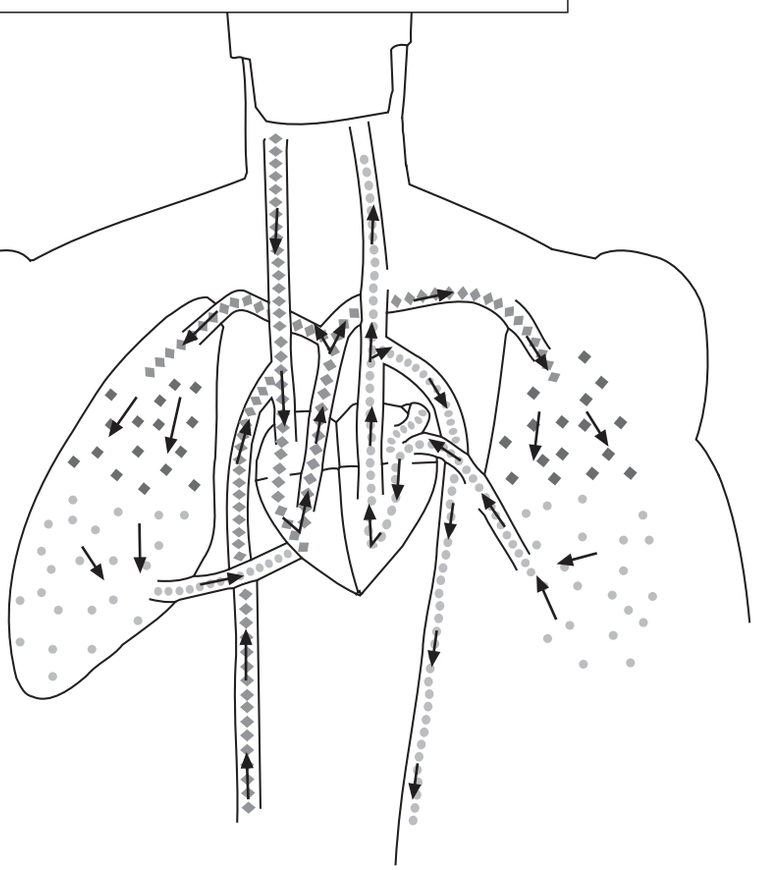
c Blood contains cells that fight infections.

2 Complete the text.

oxygen-rich	heart	lungs	blood	carbon dioxide

The heart

The heart is a muscular organ. It is about the size of an orange. It is in the middle of the chest, between the lungs. It pumps (1) _____ around the body. Oxygen-poor blood goes from the (2) _____ to the (3) _____. Gas exchange occurs in the lungs: oxygen goes from the lungs into the blood and (4) _____ goes from the blood into the lungs. The (5) _____ blood then goes from the lungs back to the heart. The heart pumps the oxygen-rich blood to the rest of the body.



3 Complete the sentences.

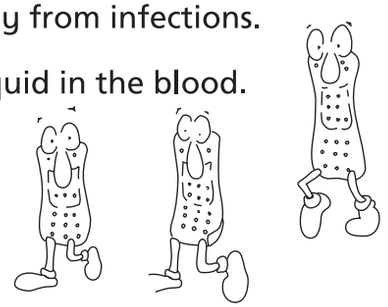
Platelets
White blood cells
Red blood cells
Plasma

1 _____ carry oxygen.

2 _____ protect the body from infections.

3 _____ is the yellow liquid in the blood. It carries the blood cells.

4 _____ stop bleeding.



TEACHER'S NOTES

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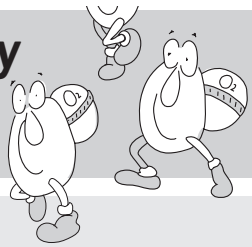
The circulatory system.



Aim

- To study the human circulatory system.

Language focus

Key vocabulary: *blood, oxygen, carbon dioxide, waste, cell, infection, heart, lungs, pump, oxygen-poor blood, oxygen-rich blood, platelets, white blood cells, red blood cells, plasma.*

Key language: *Blood carries oxygen around the body. The heart pumps blood around the body. White blood cells protect the body from infections.*

Materials

- Worksheet.
- Poster/picture of the human circulatory system.

Warm-up

- Write *Parts of the body* on the board. Encourage the pupils to write as many parts of the body as possible in three or four minutes. Write their answers on the board. If they do not mention them, elicit and include *lungs* and *heart.*

Completing the Worksheet

Activity 1

- Encourage the pupils to put their hand on their chest and feel their heart beating. Ask *What can you feel? Can you feel your heart? What's the heart doing? Why is it moving?* Explain that *Blood flows around our bodies. The heart pumps the blood to the different parts of our body.* Use pictures and mime to explain this. Make sure pupils understand the meaning of the word *pump* (which can be a verb or a noun).
- Write *Why is blood important?* on the board. Elicit answers from the class. Explain that *Blood has got three main functions.* Explain the functions in Activity 1 on the board, eg, *Blood carries oxygen. Blood carries waste. Blood fights against infections.* Draw attention to the words *oxygen, waste* and *infections.*
- Ask the pupils to match the functions to the pictures in Activity 1.

Answers: **1**-c; **2**-a; **3**-b

Extension activity

Get the pupils to do some physical exercise, eg, play ***Simon says:*** *(Simon says) jump, walk, touch your toes, touch the floor.* Ask the pupils to feel their heart after doing exercise. *What happens when we do exercise? Our heart moves faster, it works harder.* Explain that *blood carries oxygen to all the cells in our body. When we do exercise the cells need more oxygen. The heart works faster to carry more oxygen to the cells in the body. We also breathe faster to send more air to the lungs. Air has got oxygen.*

Activity 2

- Write some false sentences about the circulatory system on the board. Ask the pupils if they think the sentences are true. Encourage them to correct the sentences in small groups, then elicit their answers; eg, *The heart is in the head.* (It's in the chest.) *The heart is bigger than a pineapple.* (It's about the size of an orange.) *The heart pumps air around the body.* (It pumps blood.) *The blood absorbs oxygen in the stomach.* (In the lungs.) *The heart moves slower when we do exercise.* (It moves faster.)
- Ask the pupils to read the information in Activity 2 and complete the text using the words in the box.
- Read the text with the class and explain how blood moves through our body (if possible, use a poster or large picture of the circulatory system to illustrate your explanation). Highlight the fact that *blood with little oxygen (oxygen-poor blood) goes into the heart. The heart sends it to the lungs. In the lungs this oxygen-poor blood absorbs oxygen and releases carbon dioxide. This is called gas exchange. The oxygen-rich blood goes from the lungs to the heart. The heart then pumps this oxygen-rich blood to all the different parts of the body.* Check and correct pupils' answers.
- Divide the class into small groups. Write the main stages to the circulatory system on

strips of paper or card. Number the first card (1) but not the rest so that the pupils can put them in order. Shuffle the cards and give a set to each group. Ask the pupils to find the first card and read it aloud. Encourage the pupils to arrange the other cards in order, eg, 1 *Oxygen-poor blood goes from the heart to the lungs. 2 The blood absorbs oxygen and releases carbon dioxide in the lungs. 3 Oxygen-rich blood goes from the lungs to the heart. 4 The heart pumps the oxygen-rich blood to the rest of the body.*

Answers: **1**-blood; **2**-heart; **3**-lungs; **4**-carbon dioxide; **5**-oxygen-rich

Extension activity

Explain that *to check your heart is working properly, you can take your pulse.* Encourage the pupils to follow your instructions and take their pulse. *Feel the artery on your wrist below your thumb with two fingers. Touch this area lightly until you feel your pulse.* (Show them how to do this.) *Count the number of heart beats for 15 seconds and multiply this number by four. This is your pulse or heart rate.* For 10-15-year-old children a normal heart rate is between 60 and 100 bpm (beats per minute); our heart rate decreases as we get older. Point out that fit athletes have a pulse rate of between 40 and 60 bpm. Explain that our heart rate is faster when we do exercise or are stressed. A healthy diet and exercise are very important for a healthy heart. Smoking is very bad for the heart.

Activity 3

- Write on the board *What is blood?* Explain that blood has *white blood cells, red blood cells, platelets* and *plasma.* Explain the functions of these different components. *Red blood cells carry oxygen around the body. They are like the postman delivering letters. Blood absorbs oxygen in the lungs. White blood cells work when there is an infection. When we have a cold or another infection the white blood cells fight the infection. They are like soldiers. Plasma is a yellow liquid in the blood. It's like the water in a river. The blood cells flow in the plasma. When we cut ourselves and we start bleeding, the platelets stop the bleeding. The platelets form clots, like a natural plaster.* (Use L1 to check understanding of this if necessary.)
- Pupils do Activity 3.

Answers: 1-Red blood cells; b-White blood cells; c-Plasma; d-Platelets