

Oxygenated blood

Instructions

- Question One will help you to read the chart carefully. Decide your answers and write them on the question sheet.
- Question Two asks you to interpret the information on the chart.
- Question Three asks you to say what this information means in a real context. Make sure you consider every option carefully before you justify your choice.

Availability and use of oxygen for a healthy person and for a person suffering from oxygen deficiency.

	Haemoglobin (red pigment) content of blood (g/100 cm ³ of blood)	Oxygen content of arterial blood (cm ³ /100 cm ³ of blood)	Oxygen content of venous blood (cm ³ /100 cm ³ of blood)	Volume of blood pumped by heart (dm ³ /minute)	Total amount of blood in body (L)
Healthy person	15.0	19.0	15.0	5.0	4.8
Oxygen-deficient person	8.0	9.5	6.5	7.0	4.8

Question One: Making meaning from the chart

a) Draw a line from each word to the correct definition.

- | | | |
|-------------|---|---|
| Venous | • | • something to do with arteries |
| Arterial | • | • the name for the pigment inside red blood cells |
| Haemoglobin | • | • to have a shortage of something |
| Deficient | • | • something to do with veins |

b) How much blood does the heart of a healthy person pump every minute? _____

c) What is the total volume of blood that circulates around the body of a healthy person?

d) How much haemoglobin is found in each cubic centimetre of the blood of a healthy person?

Question Two: Interpreting the chart

a) How would you describe the way the heart has to work when a person is oxygen deficient?
(Use the information on the chart to support your answer.)

b) From the chart, describe three other differences between a healthy person and an oxygen deficient person.

1. _____
2. _____
3. _____

Question Three: What caused the oxygen deficiency?

a) Use the evidence from questions 1 and 2 to decide which is the most likely cause of the oxygen deficiency. The person:

- (A) is living in an area of high altitude where there is much less atmospheric oxygen
- (B) is suffering from iron deficiency
- (C) has suffered severe blood loss
- (D) has something wrong with their lungs

b) Explain why you gave this answer.
