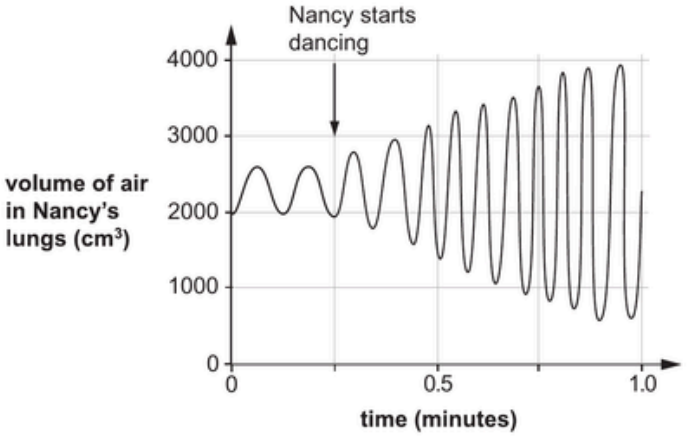
Breathing, Gas Exchange and Respiration

From breathing in oxygen to releasing energy inside your cells, this topic covers how your body gets and uses the oxygen it needs — core KS3 biology knowledge for GCSE Science.

(b) As Nancy dances her breathing changes because she needs more oxygen. The graph below shows how the volume of air in her lungs changes when she dances.



From the graph, give **two** ways her breathing changes when she dances.

1. _____

2. _____

(c) Nancy's muscle cells produce carbon dioxide as she dances.

Which of the following shows how the carbon dioxide is removed from Nancy's body?
Tick the correct box.

muscle cells → bloodstream → windpipe → lungs → nose ☐

muscle cells → windpipe → lungs → bloodstream → nose ☐

muscle cells → bloodstream → lungs → windpipe → nose ☐

muscle cells → windpipe → bloodstream → lungs → nose ☐

maximum 4 marks

KS3 Science SATs, Tier 3-6, Paper 2 (2009) - Q8(b)(c)

(d) **Diagram 2** shows a section through the mother's lungs.

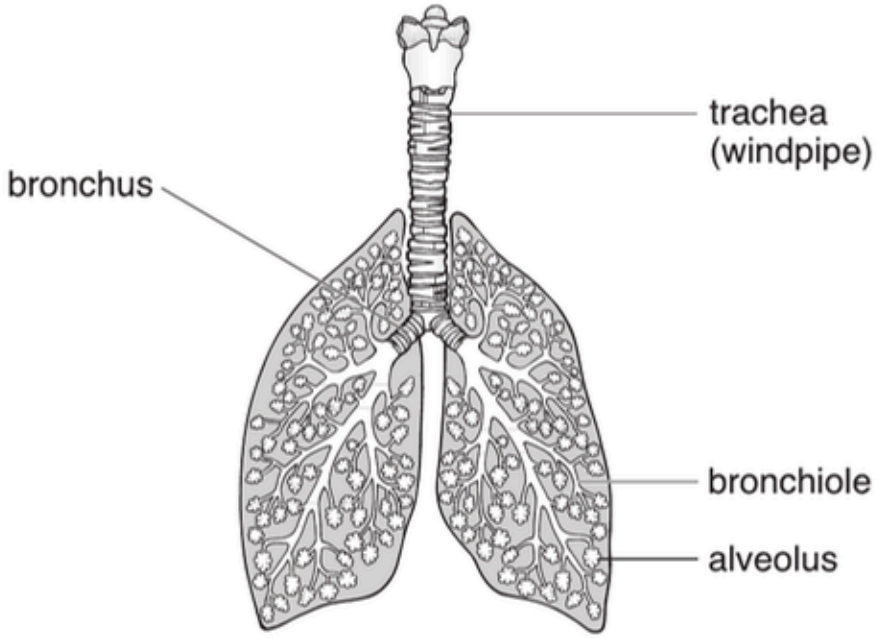


diagram 2

Look at **diagram 2**.

From which labelled part is oxygen absorbed into the blood?

_____

KS3 Science SATs, Tier 3-6, Paper 1 (2007) - Q9(d)

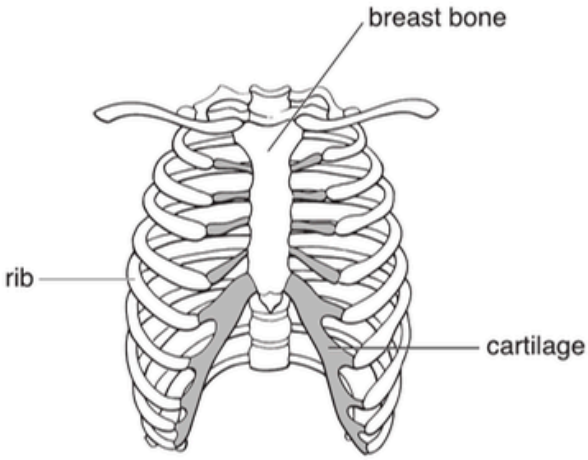
(c) **Respiration** takes place in the cells of all plants.

Complete the word equation for **respiration**.

oxygen + _____ ⟶ carbon dioxide + _____

KS3 Science SATs, Tier 3-6, Paper 1 (2008) - Q10(c)

1. The drawing below shows the human rib cage.



(b) The ribs are attached to the breast bone by cartilage which bends easily. This lets the space in the chest get bigger.

Why is it important that the space can get bigger?

1b

1 mark

KS3 Science SATs, Tier 3-6, Paper 1 (2007) - Q1(b)

(d) Tick **one** box in each row to show whether the statement is true for photosynthesis **or** for respiration.

statement	photosynthesis	respiration
carbon dioxide is produced		
light is needed		
it occurs in plants and animals		
oxygen is produced		

KS3 Science SATs, Tier 3-6, Paper 2 (2008) - Q14(d)

(c) The word equation below represents a process taking place in the cells of the human body.

glucose + oxygen → carbon dioxide + water

(i) What process does this word equation represent?

_____

13ci
1 mark

(ii) As a result of this process, the proportions of oxygen and carbon dioxide in air breathed in and air breathed out change.

Which **one** of the statements below is true?
Tick the correct box.

Air breathed out has less carbon dioxide and more oxygen than air breathed in.	☐
Air breathed out has less carbon dioxide and less oxygen than air breathed in.	☐
Air breathed out has more carbon dioxide and less oxygen than air breathed in.	☐
Air breathed out has more carbon dioxide and more oxygen than air breathed in.	☐

13cii
1 mark

KS3 Science SATs, Tier 3-6, Paper 2 (2006) - Q13(c)

(c) When the horse is running, some of its organs do more work.

Draw a line from each organ to show what it does.
Draw only **two** lines.

organ	what the organ does
heart	It takes in oxygen faster.
	It moves the bones faster.
lung	It digests food faster.
	It pumps blood faster.

5c
1 mark

KS3 Science SATs, Tier 3-6, Paper 2 (2008) - Q5(c)