Name: _____ Date: _____ Class: _____

GAS EXCHANGE IN THE LUNGS WORKSHEET

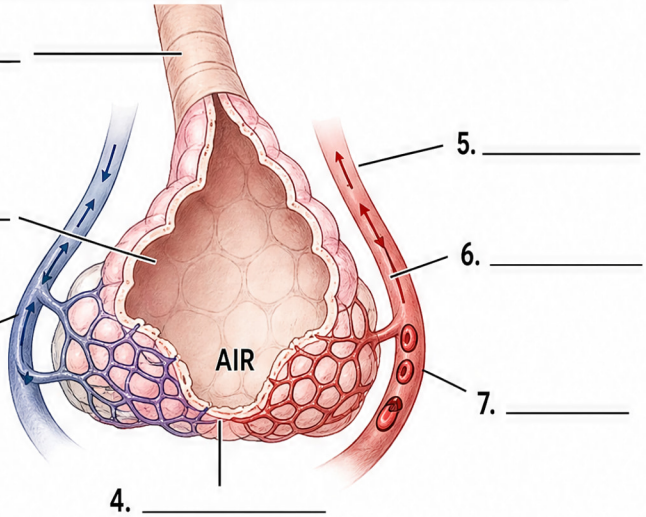
LEARNING GOALS

- Describe how gas exchange occurs in the lungs.
- Identify the structures involved in gas exchange.
- Explain the movement of oxygen and carbon dioxide.
- Apply understanding to diagrams and data.

1 LABEL THE DIAGRAM

Write the correct term from the box next to each line.

Alveolus	Capillary	Red blood cell	Bronchiole
Pulmonary artery		Pulmonary vein	Air



2 GAS MOVEMENT

Tick (✓) the correct direction of movement for each gas during gas exchange in the lungs.

GAS	FROM	TO
OXYGEN (O_2)	Alveolus ☐	Blood ☐
	Blood ☐	Alveolus ☐
CARBON DIOXIDE (CO_2)	Alveolus ☐	Blood ☐
	Blood ☐	Alveolus ☐

3 COMPLETE THE SENTENCES

a) Gas exchange in the lungs occurs in tiny air sacs called _____ .

b) The walls of the alveoli are _____ to allow gases to diffuse quickly.

c) Oxygen moves from the _____ into the blood.

d) Carbon dioxide moves from the blood into the _____ .

e) Haemoglobin in _____ binds to oxygen in the blood.

4 DATA TABLE

Use the diagram to help you complete the table.

LOCATION	OXYGEN (kPa)	CARBON DIOXIDE (kPa)
Alveolar air (air in alveolus)	_____	_____
Blood entering alveolar capillaries (from pulmonary artery)	_____	_____
Blood leaving alveolar capillaries (to pulmonary vein)	_____	_____

Based on the data you entered:

a) Which gas has a higher concentration in the alveolar air? _____

b) Which gas has a higher concentration in the incoming blood? _____

5 SHORT ANSWER

a) Why is the large surface area of the alveoli important for gas exchange?

_____

_____

b) How does exercise increase the rate of gas exchange in the lungs?

_____

_____

6 APPLY YOUR UNDERSTANDING

Read each statement and write **TRUE** or **FALSE**.

a) Oxygen diffuses from the blood into the alveoli. _____

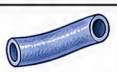
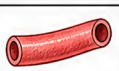
b) Carbon dioxide diffuses from the alveoli into the blood. _____

c) The pulmonary artery carries oxygen-rich blood. _____

d) The pulmonary vein carries oxygen-rich blood. _____

e) Diffusion occurs from an area of lower concentration to higher concentration. _____

KEY STRUCTURES RECAP

	**Alveolus** – tiny air sac where gas exchange occurs.
	**Capillary** – tiny blood vessel that surrounds the alveolus.
	**Red blood cell** – contains haemoglobin which carries oxygen.
	**Pulmonary artery** – carries blood from the heart to the lungs.
	**Pulmonary vein** – carries blood from the lungs to the heart.