

Chapter 1: Respiration

Lower Secondary Science Practice Worksheet

Name: _____

Date: _____

Instructions: Read each section carefully. This worksheet contains 50 questions divided into 7 distinct parts to test your fundamental understanding of the respiratory and circulatory systems.

Part 1: Multiple Choice Questions

Circle the correct answer for each question.

1. What is the scientific term for the voice box?
 - A. Trachea
 - B. Larynx
 - C. Bronchus
 - D. Alveoli
2. Where exactly does gas exchange occur in the human body?
 - A. In the trachea
 - B. In the diaphragm
 - C. In the air sacs (alveoli)
 - D. In the heart
3. What is the main function of the diaphragm and intercostal muscles?
 - A. To pump blood around the body
 - B. To control the physical movement of breathing
 - C. To carry out cellular respiration
 - D. To produce red blood cells
4. Which process explains how oxygen moves from the lungs into the blood?
 - A. Respiration
 - B. Digestion
 - C. Ventilation
 - D. Diffusion
5. Where does aerobic respiration take place inside a cell?
 - A. Nucleus
 - B. Cytoplasm
 - C. Mitochondria
 - D. Cell membrane

6. What type of chemical reaction is aerobic respiration?
- A. Endothermic
 - B. Exothermic
 - C. Photosynthetic
 - D. Magnetic
7. Which component of blood is primarily responsible for transporting dissolved carbon dioxide?
- A. Red blood cells
 - B. White blood cells
 - C. Plasma
 - D. Haemoglobin
8. What special feature allows red blood cells to carry oxygen efficiently?
- A. They have a large nucleus.
 - B. They contain a red pigment called haemoglobin.
 - C. They are made of pale yellow liquid.
 - D. They produce antibodies.
9. Which of the following is NOT a method used by white blood cells to defend the body?
- A. Producing antibodies
 - B. Digesting pathogens in their cytoplasm
 - C. Transporting nutrients to pathogens
 - D. Protecting against disease-causing microbes
10. What happens to the temperature of a sugar solution when living yeast is added to it?
- A. It drops because yeast absorbs heat.
 - B. It stays the exact same.
 - C. It rises because respiration releases heat energy.
 - D. It boils instantly.

Part 2: Fill in the Blanks

Complete the following sentences using the correct scientific terms.

11. Air travels down the main tube called the _____, also known as the wind-pipe.
12. The main tube splits into two smaller tubes called the _____, one for each lung.
13. Mammals have millions of air sacs, creating a massive total _____ area for rapid gas exchange.
14. During gas exchange, carbon dioxide diffuses from the _____ into the air in the lungs.
15. Breathing is often referred to scientifically as _____.
16. Unlike breathing, respiration is a _____ reaction that happens inside your cells.
17. The word equation for aerobic respiration is: Glucose + _____ → Carbon Dioxide + _____.
18. Human blood is a transport system ferrying gases and _____ to where they are needed.
19. Red blood cells do not contain a _____, making more room for oxygen transport.
20. Disease-causing microbes are scientifically known as _____.

Part 3: True or False

Indicate whether each statement is True (T) or False (F). Write T or F in the brackets.

- [] 21. Breathing and respiration mean the exact same thing in science.
- [] 22. Your lungs are protected by your ribcage.
- [] 23. Oxygen diffuses from the blood into the air in the lungs to be exhaled.
- [] 24. Aerobic respiration happens in animal cells, but not in plant cells.
- [] 25. Blowing into a tube connected to a water-filled bottle can measure the volume of a single breath.
- [] 26. Plasma is a pale yellow liquid.
- [] 27. White blood cells defend the body by producing a red pigment called haemoglobin.
- [] 28. A person moving to a high altitude will produce fewer red blood cells due to thinner air.
- [] 29. The diaphragm is a sheet of muscle located directly below the lungs.
- [] 30. Aerobic respiration provides a controlled release of energy that bodies need to survive.

Part 4: Sequencing the Pathway of Air

Order the following anatomical structures from 1 to 5 to show the correct pathway of air as it enters the body and travels to where gas exchange occurs. Write the numbers 1 through 5 in the blanks provided.

- _____ 31. Bronchioles
- _____ 32. Trachea (Windpipe)
- _____ 33. Air Sacs (Alveoli)
- _____ 34. Larynx (Voice box)
- _____ 35. Bronchus

