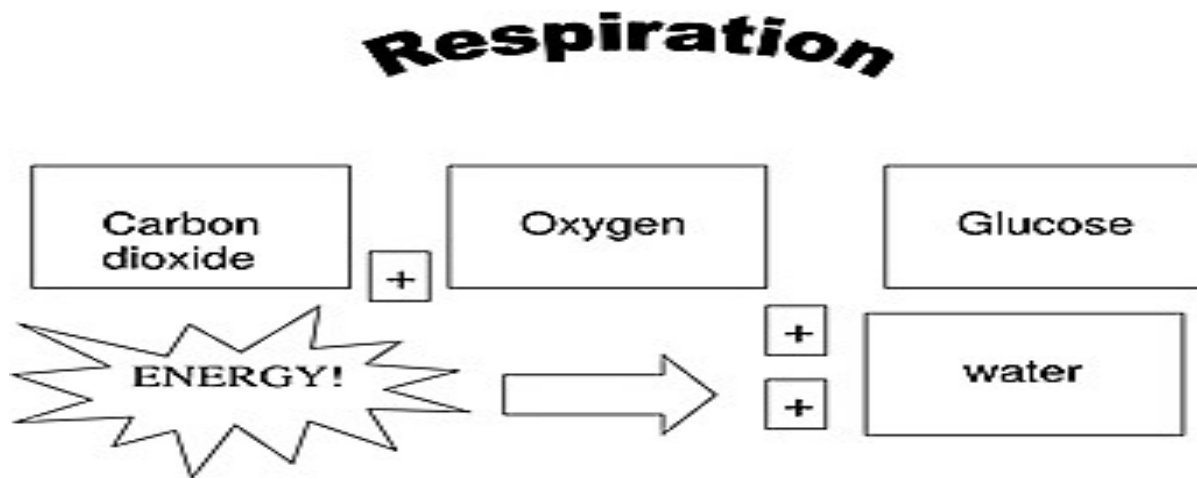


MINISTRY OF EDUCATION  
SECONDARY ENGAGEMENT PROGRAMME  
GRADE 8  
INTEGRATED SCIENCE

Week 8

Lesson - Worksheet

Activity 1.



**Cut out the above labels and stick them in your book in the correct order to make the equation for respiration.**

**Answer the questions:**

1. What are the **reactants** in this equation?
2. What are the **products**?
3. Where do we get the glucose we need for respiration from?
4. What are the waste products of this reaction?

**Activity 2.** Fill in the blank space. Complete the table using the options given for inhalation and exhalation

## The Respiratory System

1. What is Respiration?

.....

.....

2. Classify.

- Diaphragm relaxes and goes up      - The ribcage goes up and out
- The diaphragm contracts and goes down      - The lungs deflate
- The lungs inflate      - The ribcage goes down and in

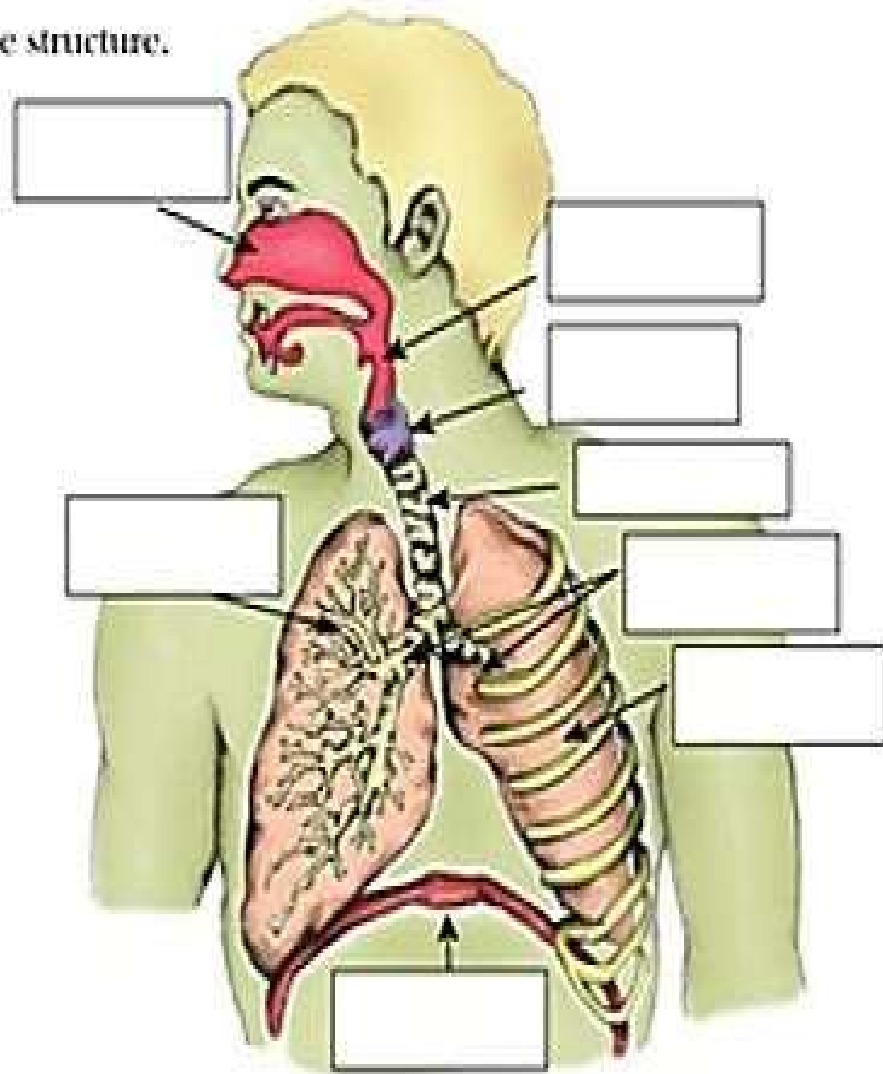
<i>Inhalation</i>	<i>Exhalation</i>

**Activity 3.** Fill in the blank spaces and label the diagram of the respiratory system

The respiratory system includes:

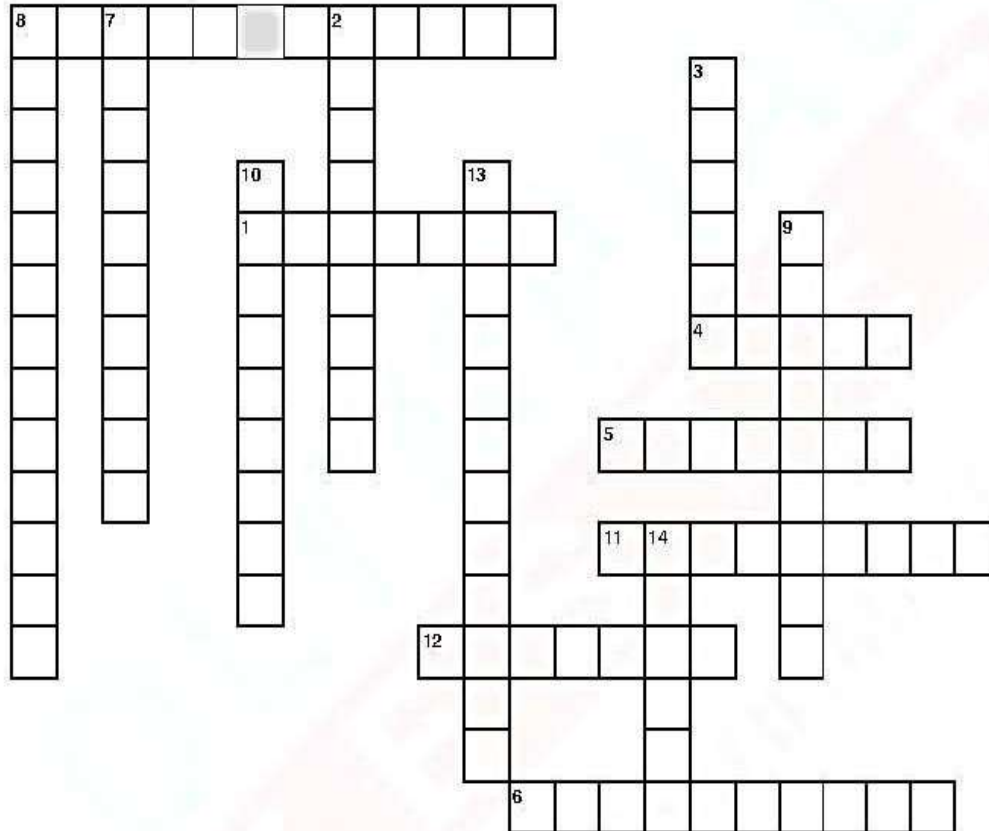
....., mouth, ....., trachea, ....., diaphragm and  
..... muscles.

Label the structure.



### Activity 4.

Try to solve the crossword on "RESPIRATION IN ORGANISMS" in 10 minutes.



#### Across

1. In \_\_\_ respiration, food is broken down with the use of oxygen
4. Example of an anaerobe.
5. Yeast respire anaerobically and yield \_\_\_ during this process
6. Taking in of air rich in oxygen
8. Lungs are present in \_\_\_
11. In cockroaches, air enters through small openings called \_\_\_
12. Oxygen is carried to the tissues of an insect by \_\_\_

#### Down

2. In \_\_\_ respiration, food is broken down without using oxygen
3. Breakdown of food releases \_\_\_
7. Breathing out air rich in carbon dioxide
8. The walls of the trachea are supported by C-shaped \_\_\_ rings
9. During inhalation, ribs move up and \_\_\_ moves down
10. Breathes through its skin
13. Cellular respiration takes place in \_\_\_
14. Lungs are enclosed by a double membranous sac called \_\_\_

**Activity 5. Choose the correct option.**

**Topic: Respiration**

**Item 1**

In plants the process of respiration takes place in:

- A) Only in the cells of the leaves
- B) All the cells in a plant
- C) Only in the cells of the roots

**The reason for my answer is only because:**

- 1. Every living cell needs energy to live.
- 2. The stomata which are only on the leaves of the plant allow for gas exchange.
- 3. The stomata which are only on the roots of the plant allow for gas exchange.
- 4. Only roots need energy; which enables them to absorb water.

**Activity 6. Choose the correct options**

1

The kind of molecule used to drive cellular respiration is:

- A amino acid
- B glucose
- C fatty acid
- D protein

2

The organelle where cellular respiration takes place is the:

- A nucleus
- B endoplasmic reticulum
- C ribosome
- D mitochondria

3

In addition to glucose the cell needs \_\_\_\_ to drive cellular respiration:

- A oxygen
- B carbon dioxide
- C water
- D hydrogen

5

Which formula for cellular respiration is correct?

- A  $1 \text{ glucose} + 6 \text{ O}_2 = 6 \text{ CO}_2 + 6 \text{ H}_2\text{O} + 1 \text{ ATP}$
- B  $1 \text{ glucose} + 1 \text{ O}_2 = 1 \text{ CO}_2 + 1 \text{ H}_2\text{O} + 36 \text{ ATP}$
- C  $1 \text{ glucose} + 6 \text{ O}_2 = 6 \text{ CO}_2 + 6 \text{ H}_2\text{O} + 36 \text{ ATP}$
- D  $1 \text{ glucose} = 6 \text{ CO}_2 + 6 \text{ H}_2\text{O} + 36 \text{ ATP}$

6

Another process of making ATP without oxygen is called:

- A fermentation
- B breathing
- C glycolysis
- D eating

7

Cellular respiration is how we:

- A breath in  $\text{O}_2$  and exhale  $\text{CO}_2$
- B break down ATP into  $\text{O}_2$
- C break down glucose (and  $\text{O}_2$ ) into ATP
- D do photosynthesis

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**SECONDARY ENGAGEMENT PROGRAMME**  
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**Week 8**

**Lesson: Worksheet-Answers**

**Activity 1.**

Equation for respiration using the words given:

Glucose + Oxygen → Carbon dioxide + water+ Energy

1. The reactants are: Glucose and Oxygen
2. The products are: Carbon dioxide, water and energy
3. The food we eat
4. Carbon dioxide, water

**Activity 2.** What is respiration? Respiration is the process by which energy is released from food in the presence of oxygen.

Inhalation	Exhalation
The rib cage goes up	The rib cage goes down
Diaphragm relaxes and goes up	Diaphragm contracts and goes down
Lungs inflate	Lungs deflate

**Activity4.**

-Nose, Pharynx, Bronchi, Intercostal muscle

Labelling for diagram of the respiratory system: Nose, alveoli, larynx, pharynx, trachea, bronchi, lungs, Diaphragm

**Activity 5.**

1. A – Reason #2

**Activity 6:** 1-A; 2-D; 3-A; 4-A; 5-A; 6-A; 7-A