

B2 (YEAR 8 – Photosynthesis, Breathing & Respiration)

1	What is photosynthesis?	A chemical reaction in which plants produce glucose and oxygen.
2	What is the word equation for photosynthesis?	Carbon dioxide + water → glucose + oxygen
3	What is the symbol equation for photosynthesis?	$6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
4	What gas is absorbed by the plant for photosynthesis to happen?	Carbon dioxide
5	What gas is produced by the plant during photosynthesis?	Oxygen
6	What are chloroplasts and what is their function?	Plant cell organelles that contain chlorophyll. Photosynthesis happens inside them.
7	What is chlorophyll and what is its function?	A green pigment inside chloroplasts that absorb the energy needed for photosynthesis.
8	Where does the water come from for photosynthesis?	Absorbed by the roots that are in soil.
9	Where does the carbon dioxide come from for photosynthesis?	The air.
10	How does oxygen from photosynthesis leave the plant?	Through the stomata.
11	What are the 5 main layers of a leaf?	Waxy cuticle, upper epidermis, palisade layer, spongy mesophyll and lower epidermis.
12	What are stomata?	Small pores (holes) on the underside of a leaf.
13	What are guard cells and what is their function?	Cells that are on either side of the stomata. They open and close the stomata to control gases entering and leaving the leaf.
14	Why are there no chloroplasts inside of plant root cells?	There is no sunlight under the ground, so no need for chloroplasts.
15	What is ventilation?	The flow of air in and out of your lungs.
16	What is breathing?	The mechanical process of using muscles to create pressure differences to inflate and deflate your lungs.
17	Where does air enter the body?	Through the nose and mouth.
18	What is the name of the tube that connects the mouth and nose to the lungs?	The trachea.
19	What is the function of the trachea?	Carries air from the mouth and nose to the lungs.
20	What are the bronchi?	The two tubes (left and right) that the trachea branches into to enter the lungs.
21	What are the bronchioles?	The smaller tubes that the bronchi branch into inside of the lungs.
22	What are the alveoli?	Small air sacs inside of the lungs.

23	Where in the lungs are the alveoli found?	At the end of the bronchioles.
24	In which order does air pass into your body?	Mouth and nose → trachea → bronchi → bronchioles → alveoli
25	What is the function of the alveoli?	To enable gas exchange between the air in your lungs and your blood.
26	Which gases are exchanged in the alveoli?	Oxygen from the air is absorbed into the blood and carbon dioxide is excreted out of the blood.
27	What is the function of the ribs?	To protect the heart and lungs.
28	What is the diaphragm?	A sheet of muscle inside the thorax below the lungs.
29	What is the function of the diaphragm?	The diaphragm will contract and relax which changes the volume of the lungs during breathing.
30	What is inhalation?	Breathing in.
31	What is exhalation?	Breathing out.
32	What happens to the diaphragm during inhalation?	It contracts and moves down.
33	What happens to the diaphragm during exhalation?	It relaxes and moves up.
34	What is the name of the muscles between the ribs?	The intercostal muscles.
35	How do changes in pressure cause breathing?	Air moves from an area of high pressure to an area of low pressure.
36	What are the two types of respiration that take place in all living things?	Aerobic and anaerobic respiration.
37	What does the word aerobic mean?	With oxygen.
38	What does the word anaerobic mean?	Without oxygen.
39	What is the word equation for aerobic respiration?	glucose + oxygen → carbon dioxide + water
40	What is the symbol equation for aerobic respiration?	$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$
41	Where does respiration take place in a cell?	The mitochondria.
42	How does glucose get into the body?	From eating carbohydrates.
43	How does glucose get into cells?	Transported in the blood.
44	What is the word equation for anaerobic respiration?	Glucose → lactic acid
45	What are the effects of lactic acid?	A build-up of lactic acid can lead to a burning sensation in muscles and muscle fatigue.
46	How is lactic acid removed from the body?	Through a reaction with oxygen and turning into carbon dioxide and water.
47	What is oxygen debt?	The amount of oxygen needed to remove the lactic acid and replace the body's reserves of oxygen.