

Body in Action *Checklist*

The Need for Energy (= Credit outcomes)*

1. A person's **energy needs** are decided by age, gender, build, occupation, leisure activity and health.
2. Eating too much can cause **obesity** and health problems. Eating too little can cause **malnutrition** and possibly death
3. **Gas exchange** is carried out in the lungs. **Oxygen is absorbed and carbon dioxide is released.**
4. **Exhaled air** contains **less** oxygen and **more** carbon dioxide than **inhaled air**.
5. CO₂ (carbon dioxide) can be detected with **bicarbonate indicator** which turns **yellow**
6. Oxygen content can be estimated by **burning** a splint in a sample of air.
7. The main parts of the breathing system are *nasal cavity, trachea, bronchi, bronchioles, air sacs (alveoli), rib cage, intercostal muscles, diaphragm.*
- 8*. Rings of **cartilage** on the trachea stop it collapsing when the neck is bent.
- 9*. Lung tissue is **spongy** and floats in water because of the **air** in it.
- 10*. The large number of **alveoli** create a very **large surface area** (size of a tennis court).
- 11*. Breathing is brought about by a combination of movement by the **rib cage** (intercostal muscles) and the **diaphragm**.
- 12*. On inhaling the **volume** of the chest cavity **increases** and the **pressure decreases**. The opposite happens on exhalation.
- 13*. Lungs are kept clean by **mucus** and **cilia** which move the mucus out of the lungs.
- 14*. Gas exchange happens in the alveoli which have a **moist lining** and are in close contact with fine **blood vessels**. Oxygen enters the blood from the air sacs and CO₂ enters the air sacs from the blood.
15. The **heart** is a muscular pump.

16. The left and right atria **receive blood** from the body and the left and right ventricles **pump blood** to the body.
17. Parts of the heart are *atria, ventricles, bicuspid and tricuspid valves, semi-lunar valves, pulmonary artery and vein, vena cava, aorta, coronary artery*.
18. The circulation of the blood is:-
from body, vena cava, right atrium, tricuspid valve, right ventricle, semi-lunar valve, pulmonary artery, lungs, pulmonary vein, left atrium, bicuspid valve, left ventricle, semi-lunar valve, aorta, to body.
19. The wall of the left ventricle is thicker than the wall of the right ventricle since blood has to be pumped all round the body and back to the heart. The right ventricle only pumps blood to the lungs and back.
20. The heart obtains its blood supply from the **coronary arteries**.
21. **Arteries** carry blood **away** from heart. **Veins** carry blood **to** the heart. **Capillaries** allow materials to pass in and out of the blood system.
22. Arteries are **thick-walled** and muscular. Veins are large and **thin-walled**. Capillaries are **tiny** and very **thin**.
23. Capillaries form a **network** which passes through every part of your body. No cell in the body is far from a capillary which means efficient gas exchange.
24. At your body cells **gas exchange** occurs between the **cells** and the **blood**.
Oxygen leaves the red blood cells and enters the body cells.
Carbon dioxide leaves the body cells and enters the red blood cells and the **plasma**.
25. Blood consists of **red cells, white cells, platelets** and **plasma**.
26. Red cells are small biconcave discs which **carry oxygen**.
White cells have large nuclei and fight infection.
Platelets help in **blood clotting**
Plasma is the **liquid part** which carries CO₂, food materials, salts and waste. It forms 55% of the blood's volume
- 27*. **Haemoglobin** is the red pigment in red cells. This joins with oxygen to form **oxyhaemoglobin**