1. a. Haemoglobin + Oxygen → Oxyhaemoglobin
   Deoxygenated blood → Oxygenated blood
   Purplish-red → Bright red
   (The oxygen combine with red blood cells to form oxygenated blood)

b. Oxyhaemoglobin → Haemoglobin + Oxygen
   Oxygenated → Deoxygenated

c. i. Oxygen diffuses through alveoli into the blood capillaries.
   ii. Oxygen combines with haemoglobin to form oxyhaemoglobin
   iii. Oxyhaemoglobin is sent to the body cells.
   iv. Oxyhaemoglobin supply oxygen to the body cells.

2. Lungs
   a. Diffusion of oxygen from the alveoli into the blood capillaries is made easier and faster by:
      i. Higher in concentration of oxygen in the alveoli than blood capillaries.
      ii. The alveoli covered with a lot of blood capillaries.
      iii. The moist surface of alveoli walls.
      iv. A lot of alveolus (large area).
      v. Thin alveolus wall (one-cell thick).

3. Human Breathing Mechanism
   a. Inhalation
      i. The external intercostals muscle contract while the internal set relaxes.
      ii. Move the ribs upwards and outwards.
      iii. The diaphragm contract and flatten (move downwards).
      iv. The increased volume of the lung but decreases the air pressure in the lungs.
      v. The atmospheric air rushes into the lungs.
   b. Exhalation
      i. The internal intercostals muscles contract while the external set relaxes.
      ii. The ribs return to their original positions (downwards and inwards).
      iii. The diaphragm relaxes and curved up (move upwards).
      iv. The decrease volume of the lungs but increases the air pressure of the lungs.
      v. The air is forced out of the lungs.
4. Inhalation / Exhalation

- When the rubber sheet is pull down, the volume of air inside the bell jar increase.
- The air pressure inside the bell jar decrease.
- The outside air rushes in and causes the balloon to inflate.

- When the rubber sheet is push up, the volume of air inside the bell jar decrease.
- The air pressure inside the bell jar higher than the atmospheric air.
- The air rushes out and causes the balloon to deflate.

5. Respiration – occur day and night.

6. Photosynthesis – occur day time only.
7. Carbon Cycle

8. Differences

<table>
<thead>
<tr>
<th>Combustion</th>
<th>Respiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>- absorb oxygen</td>
<td>- absorb oxygen</td>
</tr>
<tr>
<td>- release carbon dioxide + energy</td>
<td>- release carbon dioxide + energy</td>
</tr>
<tr>
<td>- occur outside the living cells</td>
<td>- occur inside the living cells</td>
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</tbody>
</table>