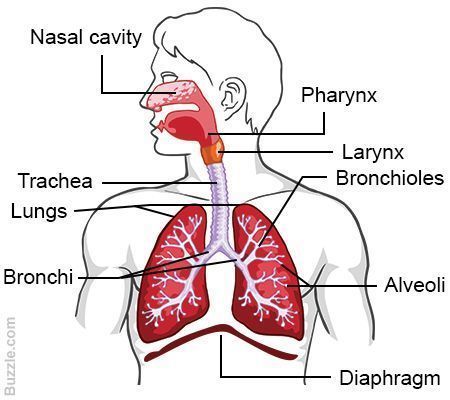
Respiratory and Circulatory Revision Booklet

1. Label the diagram of the lungs below

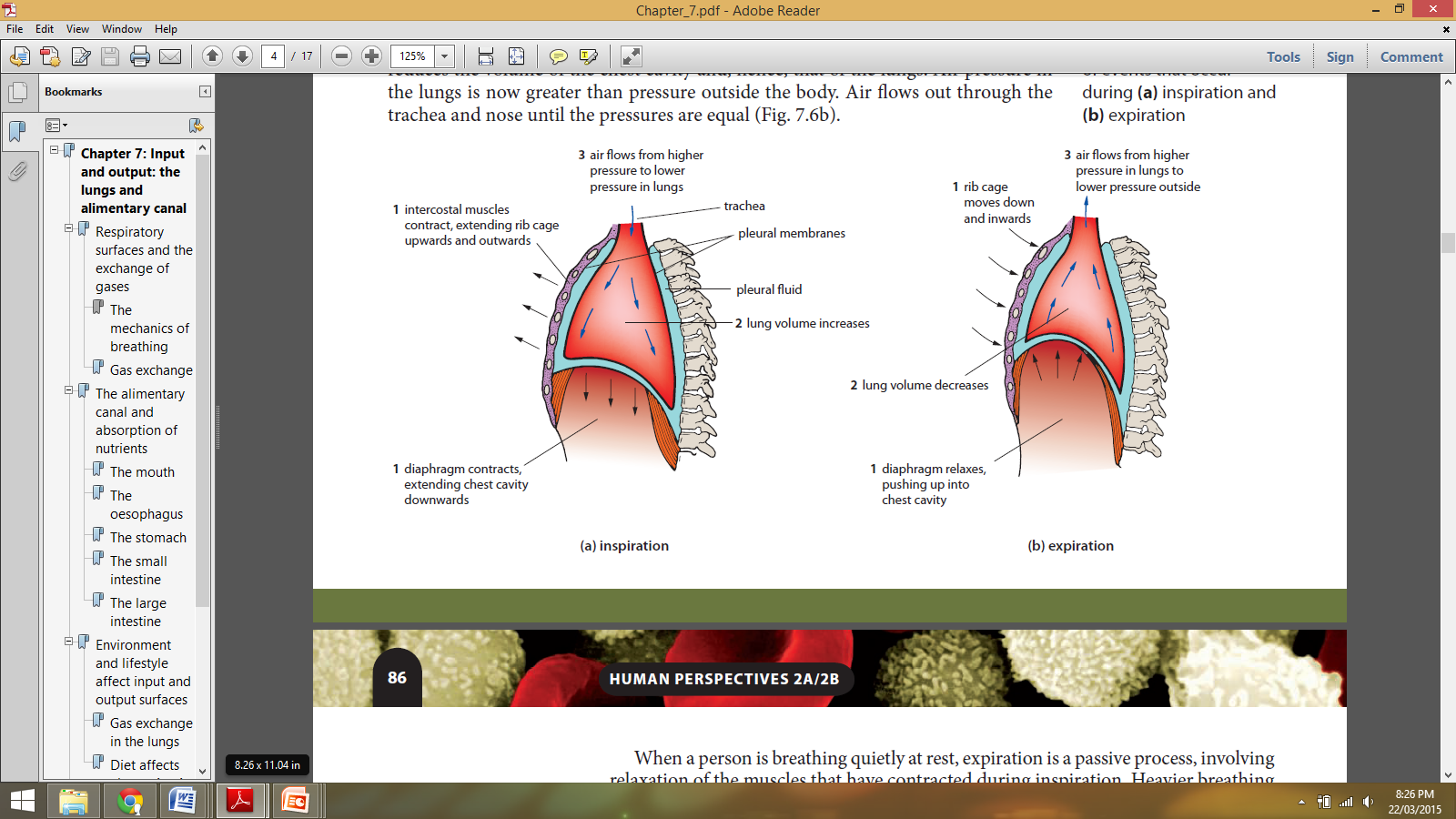


1. For each of the structures listed below explain the function and how its structure is important to its role.
   1. Nasal cavity: the inside of the nose which is lined with a mucous membrane to keep it moist.
   2. Pharynx: the membrane lined cavity behind the nose and mouth, connecting them to the oesophagus.
   3. Larynx: the voice box that sits above the trachea.
   4. Trachea: a large membranous tube reinforced by rings of cartilage, extending from the larynx to the bronchial tubes to carry air to and from the lungs.
   5. Lungs: a pair of organs situated within the ribcage which allows air to flow in and out of the body.
   6. Bronchi: Branch from the trachea that carries air to lungs
   7. Bronchioles: fine tubes at the smallest/finest end in alveoli
   8. Alveoli: clusters where gaseous exchange occurs due to being surrounded by blood capillaries.
   9. Pleural membrane: secretes pleural fluid which acts as a lubricant to prevent friction between membranes as thoracic movements occur.
   10. Intercostal Muscles: a muscle located between the ribs to increase the volume of the chest cavity and lungs
2. Name and describe the process of bringing air into the lungs

Inspiration: diaphragm contracts and intercostal muscles move the ribs up and out, increases volume of chest cavity so air rush in from high pressure (outside) to low pressure (inside).

1. Explain expiration, using a diagram to support your answer

Expiration is breathing out, diaphragm relaxes and the intercostal muscles move in to decrease the chest volume, so far is pushed out.



1. Ollie the oxygen molecule is breathed in through your nose, explain the path he takes to get into your blood stream.

* Nasal cavity- pharynx- larynx-trachea- bronchi- bronchioles- alveoli- diffused into capillary- into the red blood cells

1. How is the oxygen concentration gradient between the alveoli and the blood in the capillaries maintained

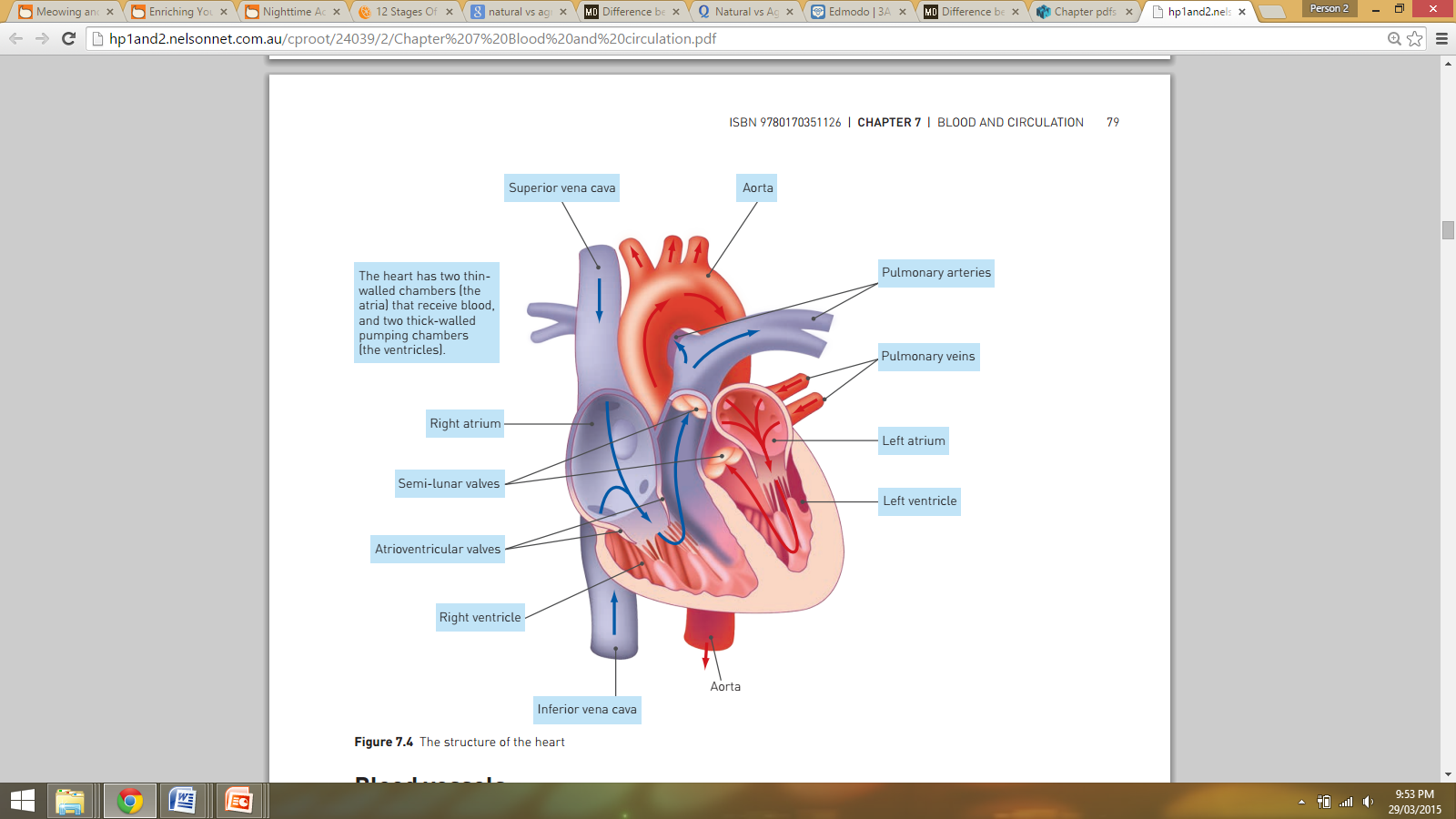
Constant flow of blood and movement of air

1. What adaptations does the alveolus have to make it more efficient in carrying out its function

Thin walls, surrounded by capillaries, clusters

# Circulatory system

1. Label the diagram of the heart



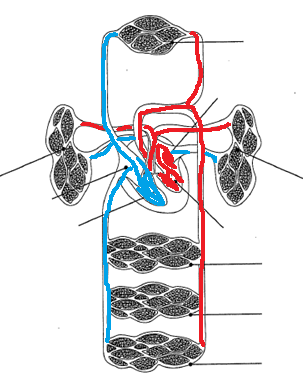
1. Explain why body cells require each of the following
   1. Oxygen: oxygen is required for respiration (process that produces energy)
   2. Glucose: glucose is required for respiration (process that produces energy)
   3. Minerals:
2. How are the substances from question 9 transported to the body cells

In the blood, oxygen is transported by haemoglobin (found in red blood cells),glucose is transported in the plasma and minerals are transported in the plasma as ions

1. Jellyfish do not have a circulatory system. Why do humans and other complex multicellular organisms need one?

Multicellular means more than 1 cell, as all cells require nutrients the circulatory system allows for this to be transported to all cells of the body

1. The diagram below represents the circulatory system, label the diagram
   1. Draw arrows to represent the direction in which the blood flows through the system
   2. Using a red pen shade in the arteries and veins that carry oxygenated blood
   3. Using a blue pen shade in the arteries and veins which carry deoxygenated blood



1. Where does blood become deoxygenated

In the cells

1. Where does blood become oxygenated

In the lungs

1. Which artery carries deoxygenated blood

Pulmonary artery

1. Which vein carries oxygenated blood

Pulmonary vein

1. Explain the difference between systolic and diastolic pressure

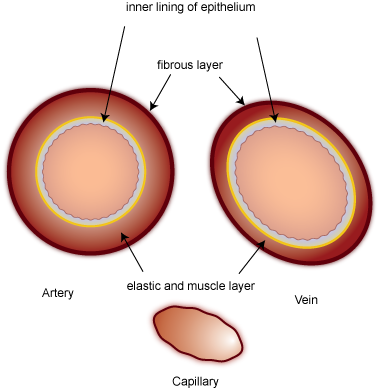
Systolic is the pressure exerted by the heart muscle contracting

Diastole is the pressure exerted by the heart muscle relaxing to fill the atria and ventricles

1. Explain the difference between pulmonary and systemic circulation

Pulmonary is between lungs and heart. Systemic is between the heart and body

1. Draw a diagram to represent a cross section of an artery, vein and capillary



1. Complete the table

|  |  |  |  |
| --- | --- | --- | --- |
| Feature | Artery | Vein | Capillary |
| Thickness of wall | Thick | Thin | 1 cell |
| Presence of valves | No | Yes | No |

1. How does carbon dioxide travel in blood

7% in plasma

20% haemoglobin

70% bicarbonate ions

1. Explain the role of platelets

Clotting blood