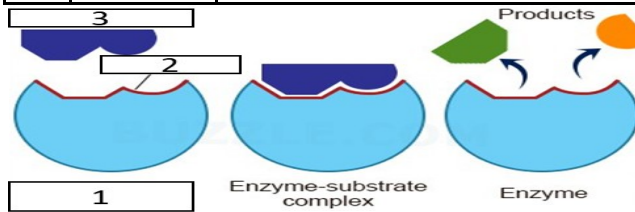


Year 10 Biology 2: Organisation Knowledge Organiser

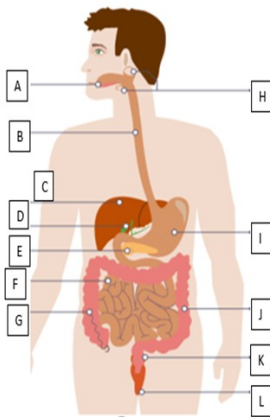
1. Enzymes

1	Enzyme	A biological catalyst. One type of enzyme does one specific reaction
2	Active site	The area of the enzyme with the specific shape to make the reaction happen with the substrate(s)
3	Substrate	The chemical(s) which are involved in the enzyme catalysed reaction



Denature	When an enzyme has its shape changed so it no longer works
Caused by:	•Temperature •pH

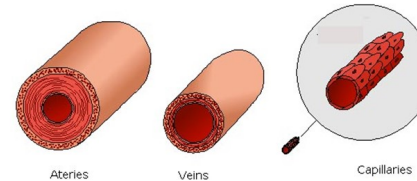
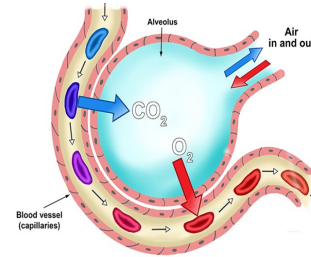
2. Digestive System



A	Mouth: mechanical break-down/chew food	G	Appendix: useless organ which harbours bacteria (good and bad)
B	Oesophagus (gullet): push chewed food to stomach	H	Salivary Glands: produce saliva with amylase enzymes to breakdown starch
C	Liver: makes bile	I	Stomach: Partial digestion of food/ mechanically churns food with HCl and protease enzymes
D	Gall Bladder: stores bile which breaks down fats (lipids) and neutralises the HCl (stomach)	J	Large Intestine: re-absorption of water
E	Pancreas: production of digestive enzymes	K	Rectum: muscular section of the large intestines
F	Small Intestine: absorption of small soluble particles	L	Anus: where faeces leaves the body

3. Types of enzyme

Name	Breaks down	Into	Produced in
Carbohydrase (eg amylase)	Carbohydrates (eg starch)	Simple sugars	Mouth, Pancreas, Small intestine
Protease	Protein	Amino acids	Stomach, Pancreas, Small intestine
Lipase	Fats (lipids)	Fatty acids, and glycerol	Pancreas, Small intestine



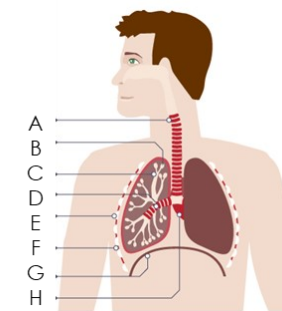
4. Adaptation to gas exchange: Alveoli

Thin walls	Capillary wall one cell thick
Moist layers	From mucus in alveoli
Large surface area	Many alveoli
High concentration gradient	Blood enters with low O ₂ and high CO ₂

5. Blood vessels

Name	Lumen (hole) size	Walls	Muscles
Arteries	Small	Thick	Yes
Veins	Large	Thin	No
Capillaries	Very small	1 cell thin	No

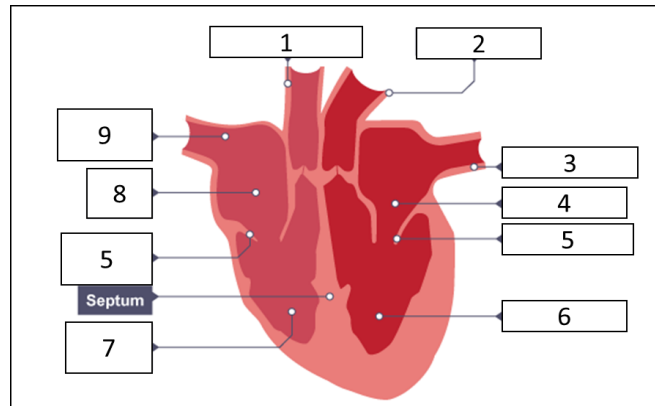
6. Respiratory System



A	Trachea
B	Alveoli
C	Bronchiole
D	Right bronchus
E	Ribs
F	Intercostal muscles
G	Diaphragm
H	Heart

7. The heart

1	Pulmonary artery	Carries deoxygenated blood to the lungs
2	Aorta	Carries oxygenated blood to the body
3	Pulmonary vein	Brings oxygenated blood from the lungs
4	Left atrium	Pushes blood to left ventricle
5	Heart valve	Prevents backflow of blood
6	Left ventricle	Pumps blood to body
7	Right ventricle	Pumps blood to lungs
8	Right atrium	Pushes blood into right ventricle
9	Vena cava	Brings deoxygenated blood from body



8. Blood

Components	Function
Red blood cell	Carries oxygen
White blood cell	Fights infection
Platelets	Blood clotting
Plasma	Liquid that contain the other components and dissolved substances like urea

10. Leaf structure and functions

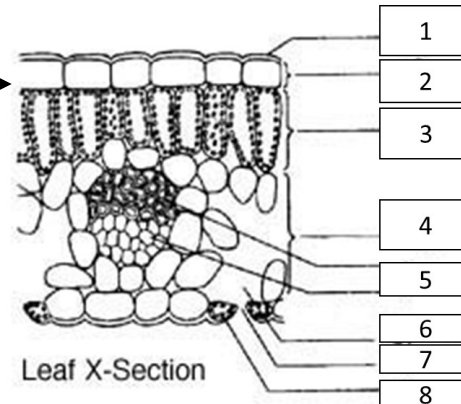
	Name	Function
1	Epidermis	Protective layer
2	Waxy cuticle	Prevents water loss
3	Palisade mesophyll	Contains a lot of chloroplasts. Site of photosynthesis
4	Spongy mesophyll	Full of air spaces to allow oxygen and carbon dioxide to diffuse
5	Vein	Contains xylem and phloem
6	Air space	Allows gases to pass through
7	Stomata	Hole for gases to move in and out of the leaf
8	Guard cells	Control the opening of stomata

9. Coronary heart disease

Coronary heart disease (CHD)	When fatty material builds up and stops the flow of blood to the heart muscle
Coronary arteries	The arteries that supply the heart muscle
Stent	A mesh tube used to keep the coronary arteries open
Statins	Drugs used to reduce blood cholesterol preventing (CHD)
Faulty valve	When the blood flows in the opposite direction through the heart. Will need replacing with biological or mechanical valve
Heart transplant	When a donor heart is used to replace a faulty heart
Artificial heart	Short term mechanical heart used while waiting for a transplant

11. Plant veins

Name	Carries	Direction	
Xylem	Water and mineral ions	From roots to leaves	Transpiration
Phloem	Sugar ('food')	From leaves to roots	Translocation



12. Factors affecting transpiration

Factor	increasing factor	Reason
Temperature	Increases transpiration	Water evaporates and diffuses faster
Humidity	Decreases transpiration	Less space around leaf for water to diffuse into
Wind	Increases transpiration	Water evaporates and diffuses faster
Sunlight	Increases transpiration	Stomata are open to let in CO ₂ so more water escapes