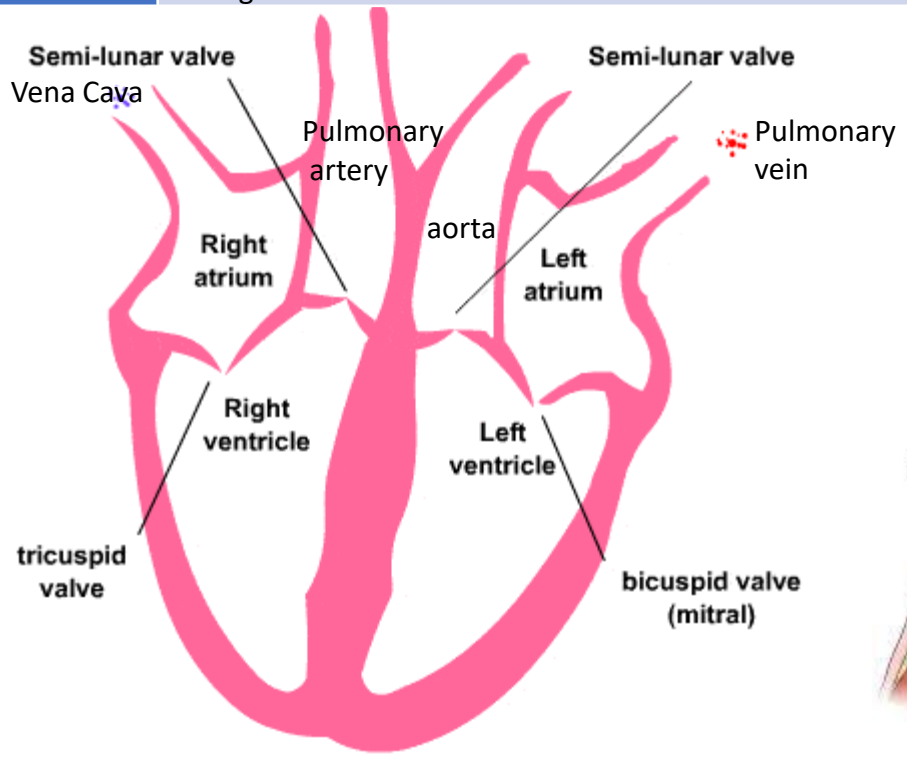
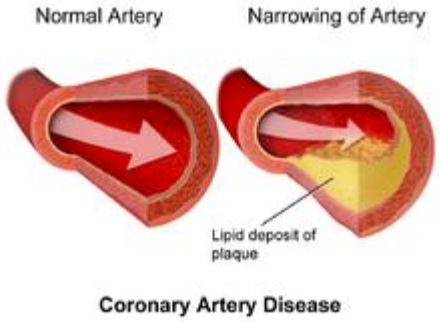
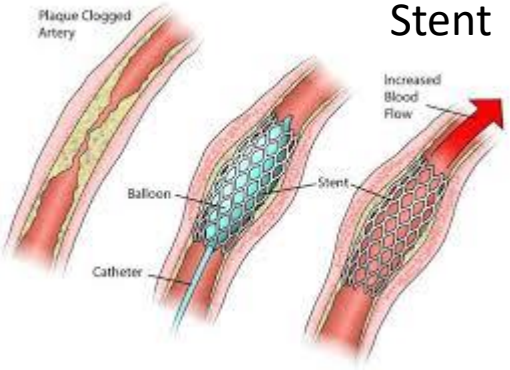
Key word	Definition
Double Circulation	One side of the heart pumps blood to the lungs while the other side of the heart pumps blood to the body
Valves	Ensure blood can only flow in one direction through the heart
Labelling the heart	Remember the right is on the left and the left is on the right side
Oxygenated	Blood containing an abundance of oxygen
Aorta	Main artery which pumps blood from the heart to the body
Vena Cava	Main vein which returns blood to the right atria of the heart from the body
Pulmonary artery	Takes deoxygenated blood from the right ventricle to the lungs
Pulmonary vein	Transports blood from the lungs to the left atrium
Coronary arteries	Transport oxygenated blood from the aorta to the heart muscle
Atheroma	Fatty deposit in a coronary artery that is the main cause of heart disease
Stent	A metal scaffold inserted into a blocked coronary artery to reopen and strengthen it after a heart attack

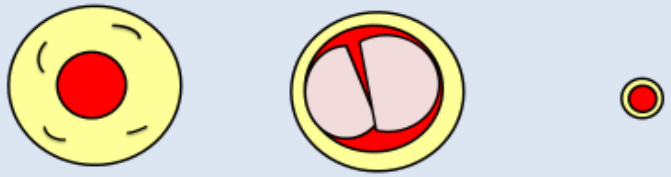




Stent

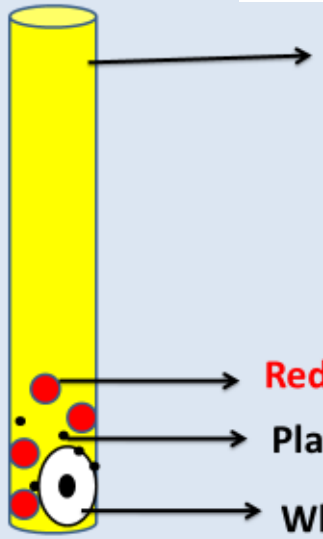


Blood Vessels



Artery	Vein	Capillary
Thick , elastic walls to cope with **high pressures**	**Thick** walls **Valves** to prevent back flow of blood. Under **low pressure**	**Thin** walls **Low pressure** Oxygen loads & unloads into RBC's

Structure of blood



Plasma – liquid part contains water, dissolved glucose, amino acids and hormones

Red blood cells – transport oxygen

Platelets – clot blood

White Blood Cells – fight infection & make antibodies

Core Questions

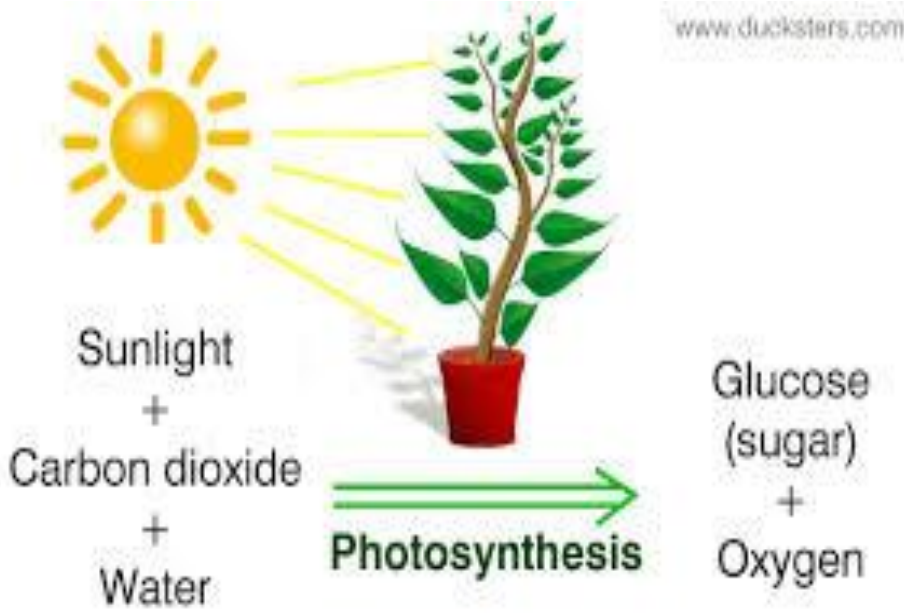
1. What is the heart made of?
2. What is the job of the heart?
3. How many chambers does the heart have, name them.
4. What do red blood cells do?
5. What do white blood cells do?
6. What do platelets do?
7. What substances are found in blood plasma?
8. Name 3 types of blood vessels
9. Which blood vessel carries blood from the left ventricle to the body?
10. Which blood vessel takes blood from the right ventricle to the lungs?
11. Why are there valves in the heart?
12. Why do arteries have thick, muscular and elastic walls?
13. Why are capillaries only one cell thick?
14. Name 3 risk factors for coronary heart disease
15. What is atheroma/plaque?
16. What is a stent?

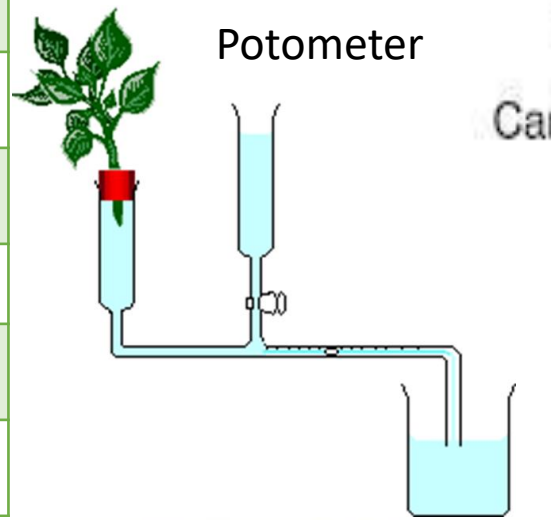
Core Questions

1. What is the heart made of? Muscle (cardiac)
2. What is the job of the heart? Pumps blood around the body
3. How many chambers does the heart have, name them. 4, left and right atria (at the top), left and right ventricles (at the bottom)
4. What do red blood cells do? Transport oxygen
5. What do white blood cells do? Fight infections
6. What do platelets do? Clot blood
7. What substances are found in blood plasma? Glucose, amino acids, hormones, carbon dioxide, water
8. Name 3 types of blood vessels Arteries, veins and capillaries
9. Which blood vessel carries blood from the left ventricle to the body? Aorta
10. Which blood vessel takes blood from the right ventricle to the lungs? Pulmonary artery
11. Why are there valves in the heart? Prevent backflow of blood
12. Why do arteries have thick, muscular and elastic walls? Withstand high pressure generated when the heart contracts
13. Why are capillaries only one cell thick? Short diffusion distance so oxygen & glucose can be delivered to cells effectively
14. Name 3 risk factors for coronary heart disease Eating too much animal fat, smoking, obesity
15. What is atheroma/plaque? Build up of fatty deposits in the coronary arteries
16. What is a stent? A metal scaffold inserted into coronary arteries to reopen them & allow blood flow

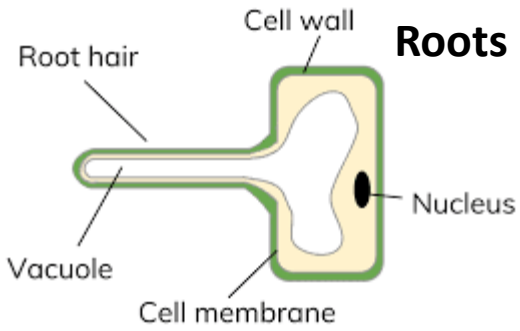
Transport in Plants

Photosynthesis	Process where light is converted into flood (glucose in plants
Transpiration	Movement of water through a plant from the roots to and out of the leaves
Xylem	Transports water and miner ions up the stem
Phloem	Transports sugar up and down the stem
Stomata	Holes in the bottom of leaves that allow gases in and out of leaves
Guard cells	2 specialised cells that open and close the stomata
Root hair cell	Absorbs water and mineral ions from the soil
Osmosis	Movement of water from a high to a low concentration through a semi-permeable membrane
Active transport	Movement (of mineral ions) from a low to a high concentration
Potometer	Instrument used to measure transpiration in plant

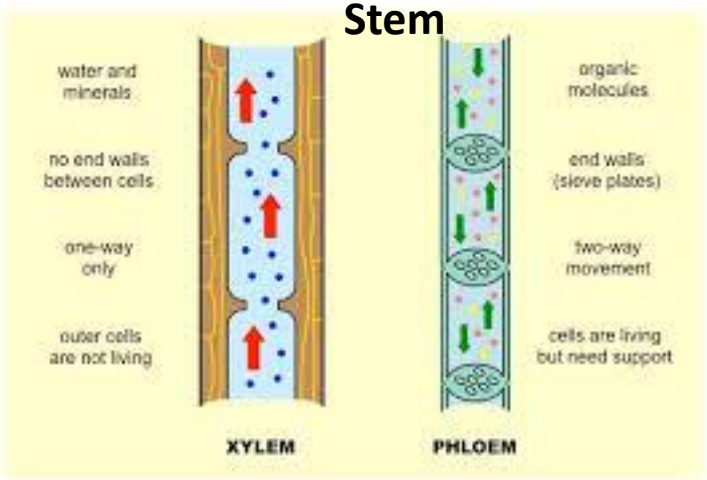




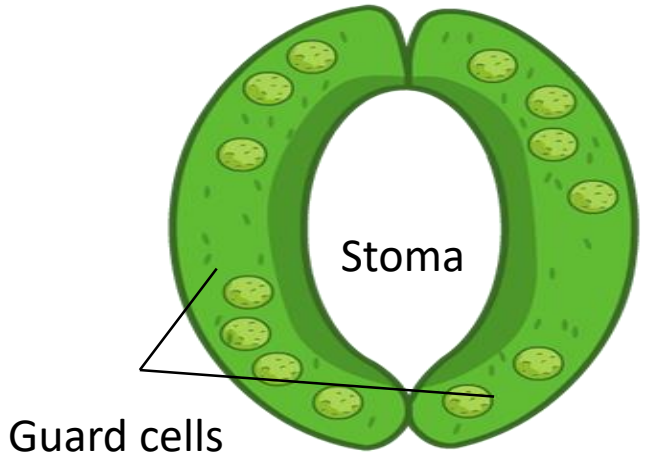
Roots



Stem



Leaves



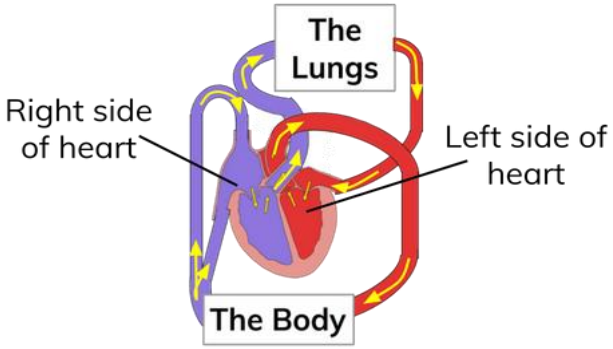
Core questions

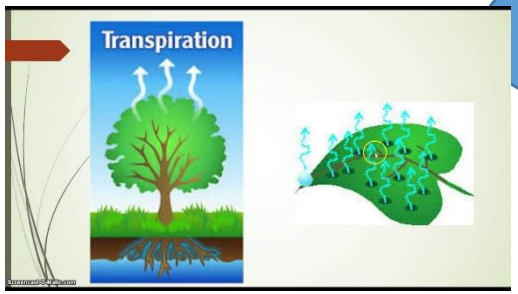
1. What are the 2 reactants in photosynthesis?
2. What are the 2 products of photosynthesis?
3. Write the word equation for photosynthesis
4. What is transpiration?
5. How is water transported up stems and into leaves?
6. How is sucrose transported around plants?
7. Where are root hair cells found and what is their job?
8. What are stomata and what is their job?
9. What weather conditions would speed up transpiration?
10. How are leaves adapted for photosynthesis?

Core questions

1. What are the 2 reactants in photosynthesis? water and carbon dioxide
2. What are the 2 products of photosynthesis? glucose and oxygen
3. Write the word equation for photosynthesis carbon dioxide + water > glucose + oxygen
4. What is transpiration? Movement of water through plants
5. How is water transported up stems and into leaves? Xylem
6. How is sucrose transported around plants? Phloem
7. Where are root hair cells found and what is their job? Roots, absorbs water and dissolved mineral ions from the soil
8. What are stomata and what is their job? Pores on the underside of leaves for gas exchange, allow CO_2 in and water vapour out
9. What weather conditions would speed up transpiration? Warm and windy
10. How are leaves adapted for photosynthesis? Thin and flat so they have a large surface area,

Transport in humans and plants





What I know from KS2

How nutrients & water are transported in animals

What I know from KS3

Identify the heart & describe the jobs of the blood vessels & blood.

circulatory system

Label a diagram of the Heart

Describe & recognise arteries, veins & capillaries

List the different parts of blood & their functions.

Heart Disease

Risk factors for Coronary Heart disease

Treatments for heart disease

(stents, bypass operations, artificial hearts, replacement valves)

Plant organs

Structure of leaves, roots & stems of plants

Describe how they are adapted to different jobs

Transpiration

transport of water, minerals & sugars around plants. List key features of the phloem & Xylem vessels.

Osmosis

Water enters roots & plant cells by osmosis.

RP: Osmosis in potatoes

Future Learning

Role of white blood cells in immunity

Blood supply to the kidneys & muscles in kidney function & respiration

Role of blood in hormone transport & action

Plants as producers in food chains

Vocabulary

Atria, ventricles, aorta, vena cava, pulmonary artery, pulmonary vein, plasma, platelets, capillaries, pocket valves, coronary, plaques, stent, risk factors

Photosynthesis, Transpiration, stomata, guard cells, Xylem, phloem, Osmosis, starch, iodine, glucose, Benedict's reagent, rate, limiting factor, Nitrates, magnesium ions