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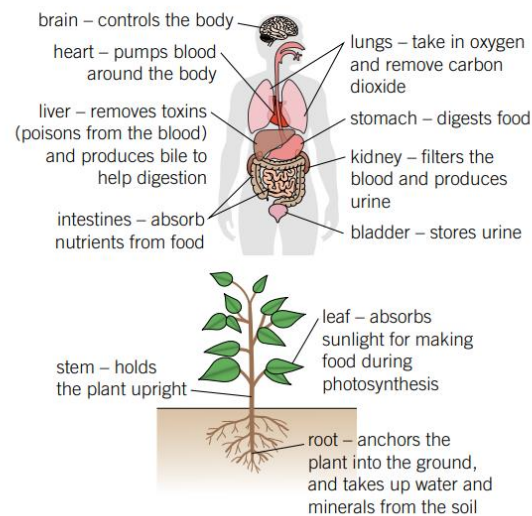
Glue on this side

Organisms

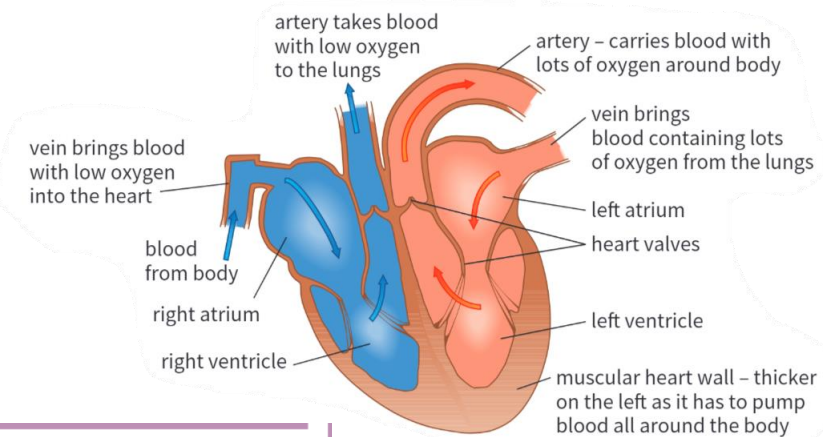
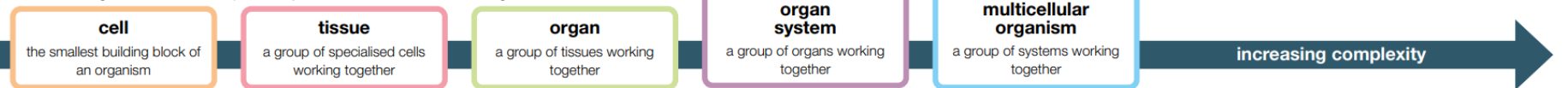
1	Define and give examples of cells, tissues, organs and organ systems in plants and animals.
2	Describe the structure and function of the circulatory system.
3	Describe the structure and function of the digestive system.
4	Explain the adaptations of the leaf and alveoli for efficient gas exchange.
5	Describe and explain how three systems within the human body work together to provide life.

Keyword	Definition
Cell	The smallest functional unit in an organism, the building block of life.
Tissue	A group of similar cells working together to perform a function.
Organ	A group of different tissues working together to perform a function.
Organ system	A group of organs working together to perform a function.
Photosynthesis	A process within chloroplasts that uses light energy to synthesise glucose.
Respiration	A process within mitochondria which releases energy from glucose.
Enzyme	A biological catalyst.
Digestion	The breakdown of large insoluble molecules into smaller soluble molecules
Diffusion	The movement of particles from an area of high concentration to an area of lower concentration

Plant and animal organs



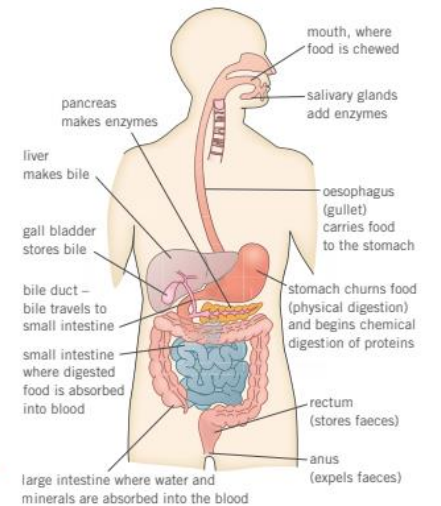
Multicellular organisms are made up of many cells and have five levels of organisation:



The digestive system

Digestion is the breaking down of large insoluble food molecules to small soluble ones. These small molecules are absorbed into the blood for your body to use.

Bacteria live on fibre in your diet in the large intestine and make important vitamins (e.g., vitamin K).



Reach: Circulatory system

Blood vessels

- Arteries** - carry high pressure blood away from the heart to organs.
- Veins** - carry lower pressure blood back to the heart, so require **valves** to prevent blood flowing back.
- Capillaries** - small vessels that link arteries to veins and allow diffusion of substances.

Blood vessels are organised into a **double circulatory** system to pump blood to the lungs, then back to the heart to be pumped around the body.

Enzymes

Enzymes are special proteins that can break large molecules of nutrients down into small molecules.

Enzymes are known as biological **catalysts** – they speed up **digestion** without being used up.

There are three main types of enzyme involved in digestion:

	Type of enzyme		
	carbohydrase	protease	lipase
speeds up digestion of	carbohydrates (e.g., starch)	protein	lipids
	↓	↓	↓
	sugars	amino acids	fatty acids and glycerol

Careers:
Nutritionist
Doctor
Nurse
Chemist
Surgeon
Dietician

Future Learning:

At GCSE you will learn about the human digestive system the circulatory system and plant transport.

Why?

Looking at the bigger picture, seeing how organ systems work together for life, for animals and plants.

Prior Knowledge From KS2:

At KS2 you have studied exercise and lifestyle on the way their body functions and describes the ways in which nutrients and water are transported within animals, including humans.

Homework Menu Grid

- 1) Make a model of an organ system of your choice
- 2) Research and make a scientific poster on organ transplantation
- 3) Which are more important: Animals or plants?

