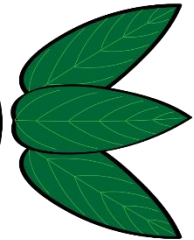
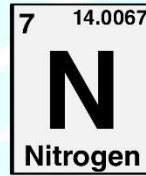
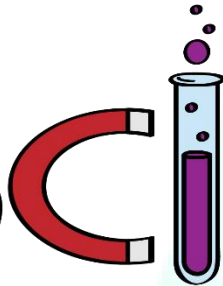
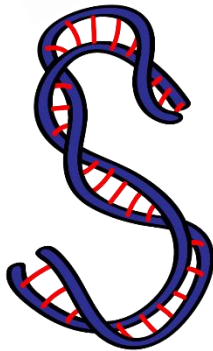




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Science Department

2023/2024

Year 7

Term 1, Revision Pack (Unit 1)

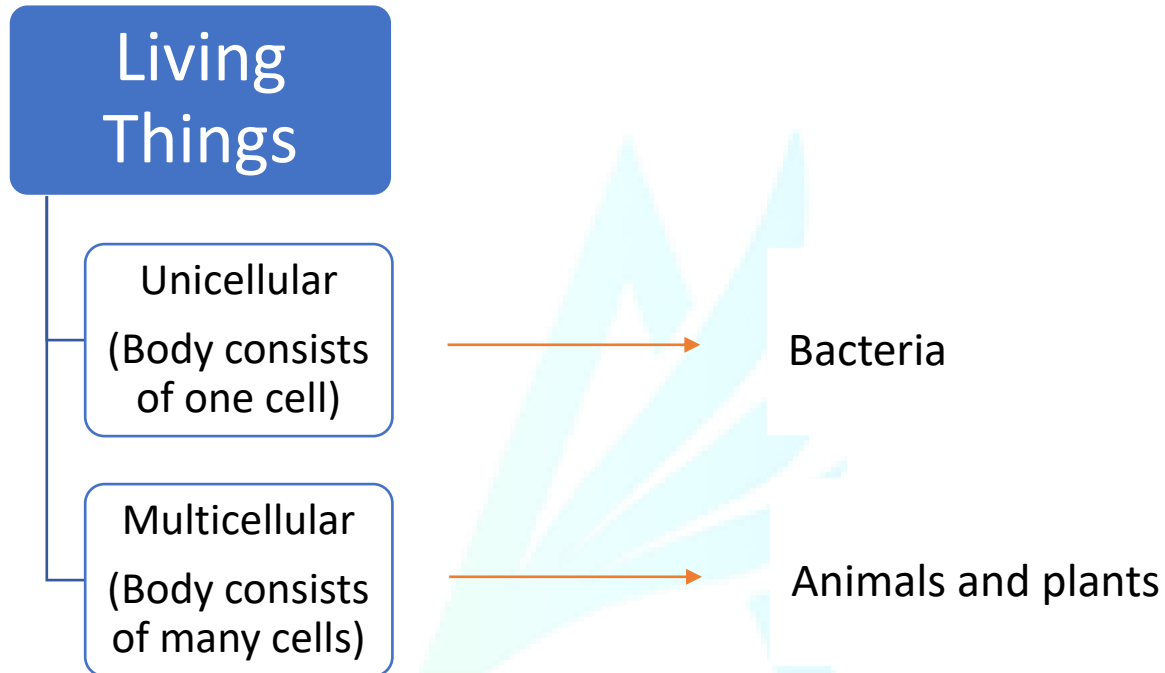
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Name:

Class:

Study Notes (Unit 1)

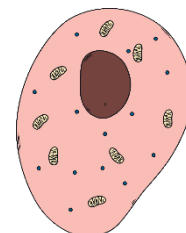
The **cell** is the basic unit of the body of any living organism.



The cell may be an animal cell or a plant cell.

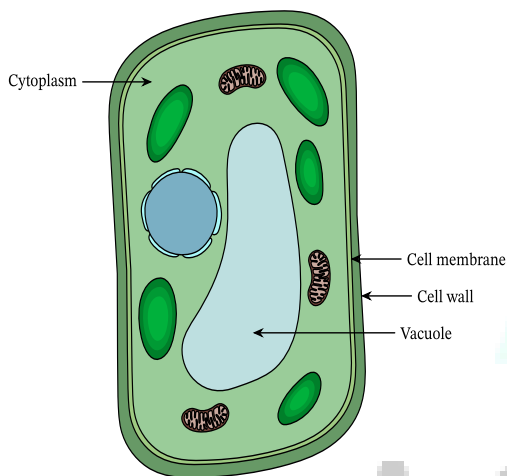
The animal cell consists of:

Organelle	Function
Cell membrane (thin and flexible)	Controls what gets in and out of the cell
Cytoplasm (like clear jelly)	All chemical reactions happen in it
Nucleus	Controls all the activities of the cell
Mitochondria	Release energy from the food



The plant cell contains 3 extra -organelles

Organelle	Function
Cell wall (strong and stiff)	Gives the plant shape (structure) and support
Sap vacuole (fluid-filled space)	Contains sap (solution of water, sugar and dissolved substances)
Chloroplast (contain chlorophyll)	- The place where the plant makes its food - Gives the green colour to the plant



Note:

- The sap vacuole is the largest organelle in the plant cell.
- The chlorophyll is found more in the upper side of the leaf than the lower side.

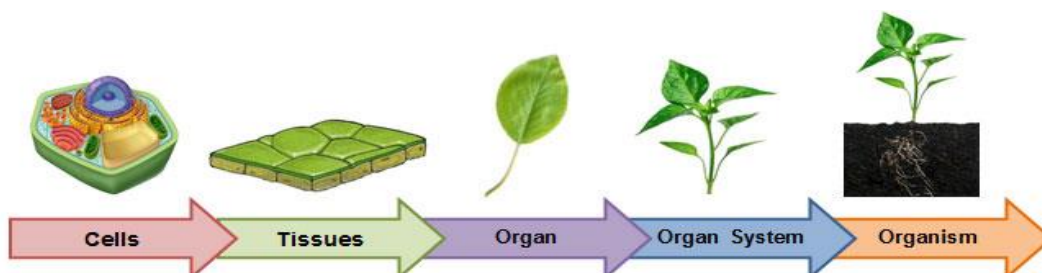
Specialised cells:

Some cells differ from the rest of the cells of the body, as they are **adapted** to their specific function:

- It is specialised with a structure that increases its ability to carry out its function.

Specialised cell	Found in	Specialised Structure	How this helps the cell to carry out its function	Function
Red blood cell	Animals	<ul style="list-style-type: none"> - They have no nucleus (to make space for haemoglobin) - They are red because they contain a red pigment called haemoglobin. - They are smaller than any other cells in the body to pass through tiny capillaries. 	<ul style="list-style-type: none"> - More room for haemoglobin, so it can carry more oxygen - Haemoglobin carries oxygen -it can squeeze through tiny capillaries 	Transports oxygen
Neuron		<ul style="list-style-type: none"> -Axon (a very long strand of cytoplasm) -Dendrites (short strands of cytoplasm) 	<ul style="list-style-type: none"> Allows electrical signals to travel long distances very quickly -Dendrites pick up electrical signals from other nerve cells 	Carry electrical signals from one part of the body to the brain
Ciliated cell		Stops bacteria and dust getting into the lungs	has tiny, thread-like cilia along one edge	Cilia wave in unison, sweeping mucus, in which bacteria and dust are trapped, away from the lungs
Palisade cell	Plants	has many chloroplasts containing chlorophyll	Chlorophyll absorbs energy from sunlight which the plant uses to make food	Make food by photosynthesis
Root hair cell		has a long extension from one side	allows water to move easily from the soil into the cell	Absorbs water and mineral ions from the soil

Level of organization:



Practice Worksheets

Worksheet 1.1

Cell structure and function

Every living organism is made of cells. Cells are the smallest unit of every living organism. Some organisms have only one cell. Large organisms, such as animals and plants, are made of large numbers of cells.

Plant and animal cells have cell membranes, cytoplasm and a nucleus. However, plant cells have cell walls and sap vacuoles, which animal cells do not have. Some plant cells also have chloroplasts.

In an animal or plant, similar cells are usually grouped together to form tissues. The cells in a tissue all work together to carry out a specific function. These cells have structures that help them to perform this function. They are said to be specialised. Neurons (nerve cells), for example, have a very long axon. This enables them to transmit electrical signals from one part of the body to another very quickly.

Use the information in the passage to answer the questions below.

Do **not** copy sentences from the three paragraphs. Use your own words.

1 What is a cell?

2 What similarities are there between plant cells and animal cells?

3 How do plant and animal cells differ?

4 What does the term *specialised* mean?

5 Describe how a neurone is specialised for its function.

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Worksheet 1.2

Scientific meanings of words

Some words have different meanings in science and in everyday language.

For each of the words below, write:

- a sentence using the everyday meaning of the word
- another sentence using the scientific meaning of the word

You can also draw a picture to illustrate each sentence.

a tissue

everyday meaning

scientific meaning

b cell

everyday meaning

scientific meaning

c organ

everyday meaning

scientific meaning
