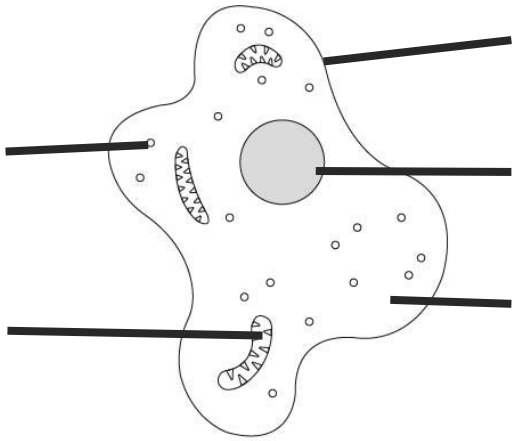
Cellular structures

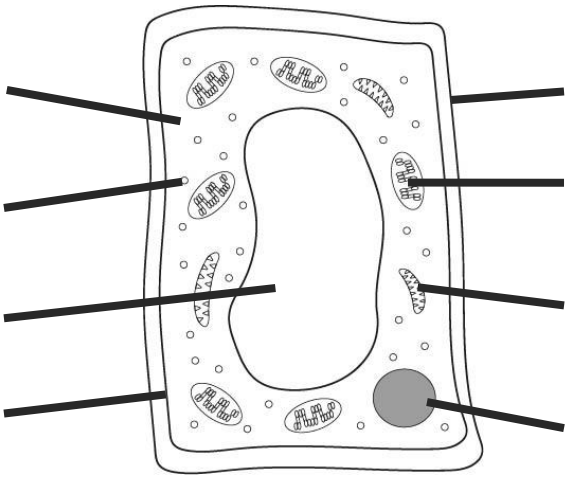
Task 1: Identify sub-cellular structures

Label the sub-cellular structures in the plant and animal cell.

Animal cell



Plant cell



Task 2: Describe the function of sub-cellular structures

a) **Complete** the table below.

Structure	**Function**
	jelly-like substance where chemical reactions take place
nucleus	
	where protein synthesis occurs
	where energy is released through aerobic respiration
cell membrane	
	contains cellulose; provides strength and support to cell
vacuole	
chloroplast	

b) **Answer** the following questions in full sentences.

i) **Would** you find chloroplasts in an animal or plant cell?

ii) **What** process happens inside the chloroplasts?

iii) **What** is the green pigment found inside the chloroplasts called, and **what** is its function?

iv) The cell membrane is partially permeable. **What** does this mean?

Task 3: Compare plant and animal cells

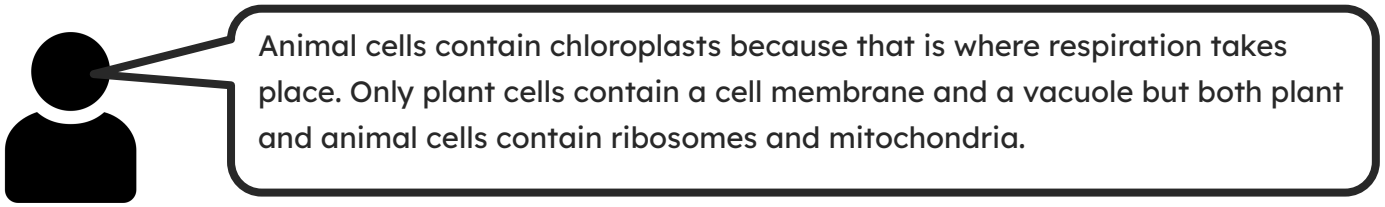
a) **Complete** the table by adding the correct sub-cellular features to each column.

Sub-cellular features in plants and animal cells	**Subcellular features in plants cell only**

b) **Explain** why animals do not need chloroplasts.

c) Zeyad is talking to his teacher about plant and animal cells.

What has Zeyad said correctly, and **what** has he got wrong? **Write** the correct sentences for Zeyad to improve.



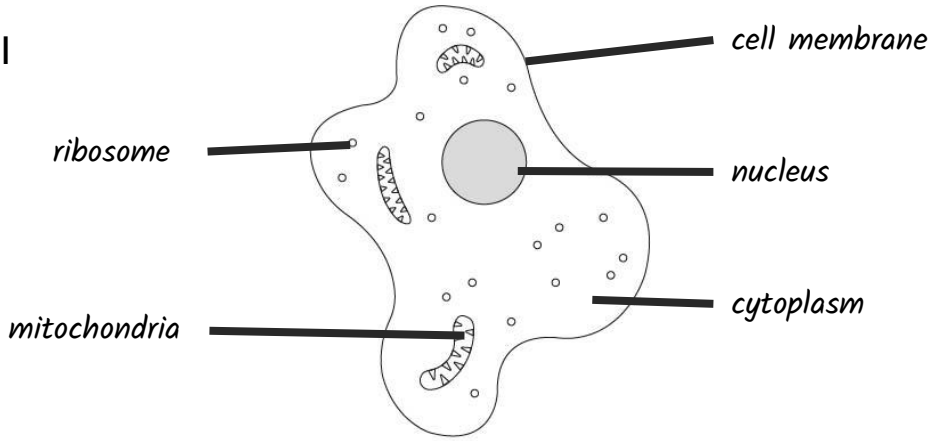
Cellular structures

Answers

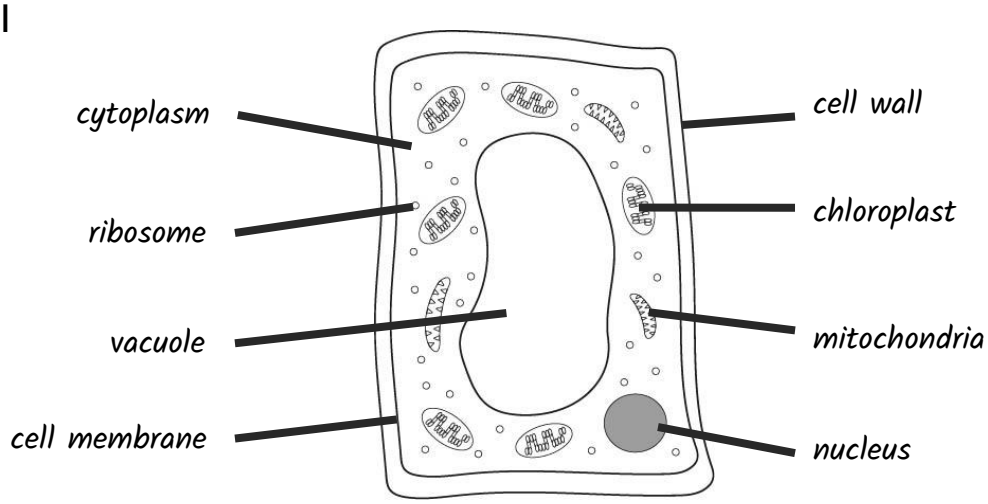
Task 1: Identify sub-cellular structures

Label the sub-cellular structures in the plant and animal cell.

Animal cell



Plant cell



Task 2: Describe the function of sub-cellular structures

a) **Complete** the table below.

Structure	**Function**
cytoplasm	jelly-like substance where chemical reactions take place
nucleus	*contains DNA and controls the cell activities*
ribosomes	where protein synthesis occurs
mitochondria	where energy is released through aerobic respiration
cell membrane	*controls what enters and exits the cell*
cell wall	contains cellulose; provides strength and support to cell
vacuole	*contains sap which helps keep the cell turgid*
chloroplast	*contains chlorophyll; this is where photosynthesis occurs*

b) **Answer** the following questions in full sentences.

i) **Would** you find chloroplasts in an animal or plant cell?

Chloroplasts are found in plant cells.

ii) **What** process happens inside the chloroplasts?

Photosynthesis occurs inside the chloroplasts.

iii) **What** is the green pigment found inside the chloroplasts called, and **what** is its function?

Chlorophyll is a green pigment found in chloroplasts. Its function is to absorb light energy.

iv) The cell membrane is partially permeable. **What** does this mean?

The cell membrane is partially permeable because it allows some substances to diffuse through but not other.

Task 3: Compare plant and animal cells

a) **Complete** the table by adding the correct sub-cellular features to each column.

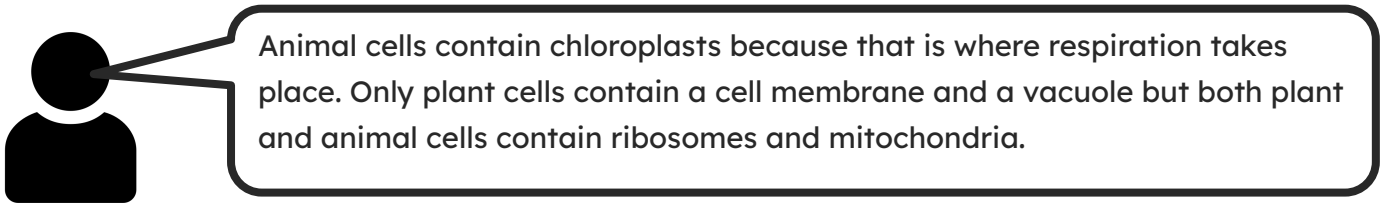
Sub-cellular features in plants and animal cells	**Subcellular features in plants cell only**
cell membrane *cytoplasm* *ribosomes* *nucleus* *mitochondria*	*cell wall* *vacuole* *chloroplasts*

b) **Explain** why animals do not need chloroplasts.

Plants make their glucose through photosynthesis whereas animal get their glucose through food and drink and therefore do not need chloroplasts.

c) Zeyad is talking to his teacher about plant and animal cells.

What has Zeyad said correctly, and **what** has he got wrong? **Write** the correct sentences for Zeyad to improve.



- *Zeyad has correctly said that only plant cells contain a vacuole and that both plant and animal cells contain ribosomes and mitochondria.*
- *Zeyad has wrongly said that animal cells contain chloroplasts and he also said that respiration takes place in them.*
- *Photosynthesis takes place in the chloroplasts and respiration takes place in the mitochondria.*
- *Zeyad also said only plant cells contain a cell membrane whereas both plant and animal cells do. Only plant cell contain a cell wall.*