Lesson 15 - Review (Part 2) (Downloadable student document)

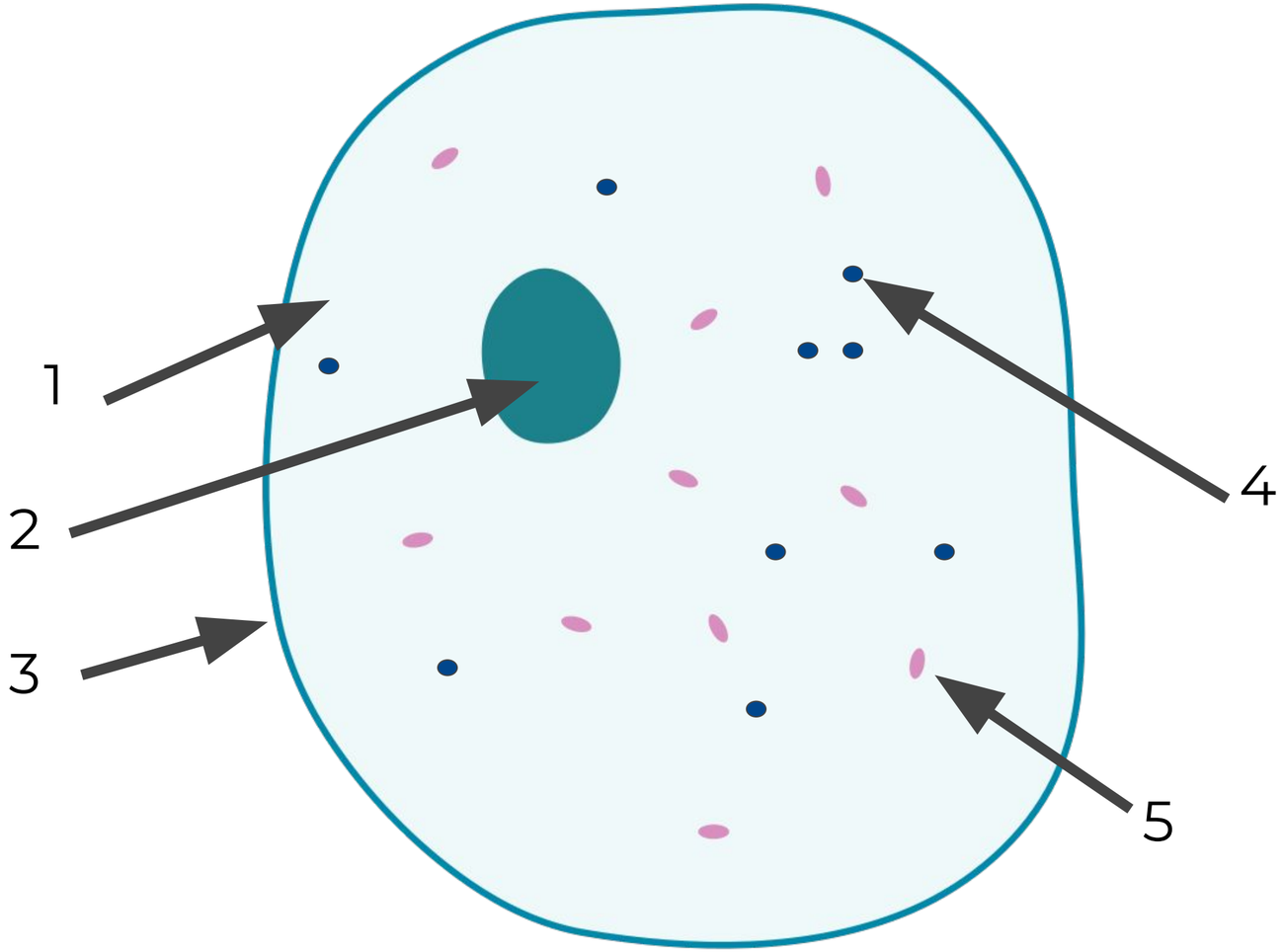
Science - Biology - Key Stage 3

Cells, Tissues and Organs

Miss Wickham

Labelling animal and plant cells

Label the animal cell

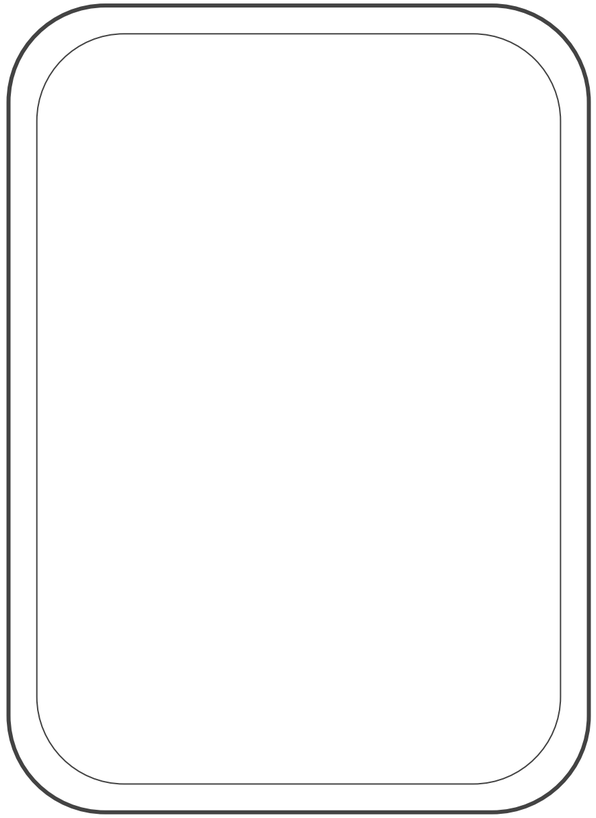


Labelling animal and plant cells

Draw and label a plant cell

Include the following organelles:

- Nucleus
- Cell wall
- Vacuole
- Cytoplasm
- Cell membrane
- Chloroplasts
- Ribosomes
- Mitochondria



Answer the following questions

1. Which 3 organelles do both plant and animal cells have?
2. Which organelle contains genetic information and controls the activities of the cell?
3. What is the function of the cell membrane?
4. Explain why animal and plant cells both have mitochondria.
5. How do animal and plant cells look different?
6. Which organelle contains a green pigment called chlorophyll?

Levels of organisation

Complete the following gap fill:

In the human body, many cells of the same _____ work together to form a _____. An example of a tissue is _____. Tissues join together to form an _____. The bodies of most animals and _____ are made up of many organs. Several organs work together to form an organ _____. For example, the stomach, small _____ and anus are organs that make up the _____ system.

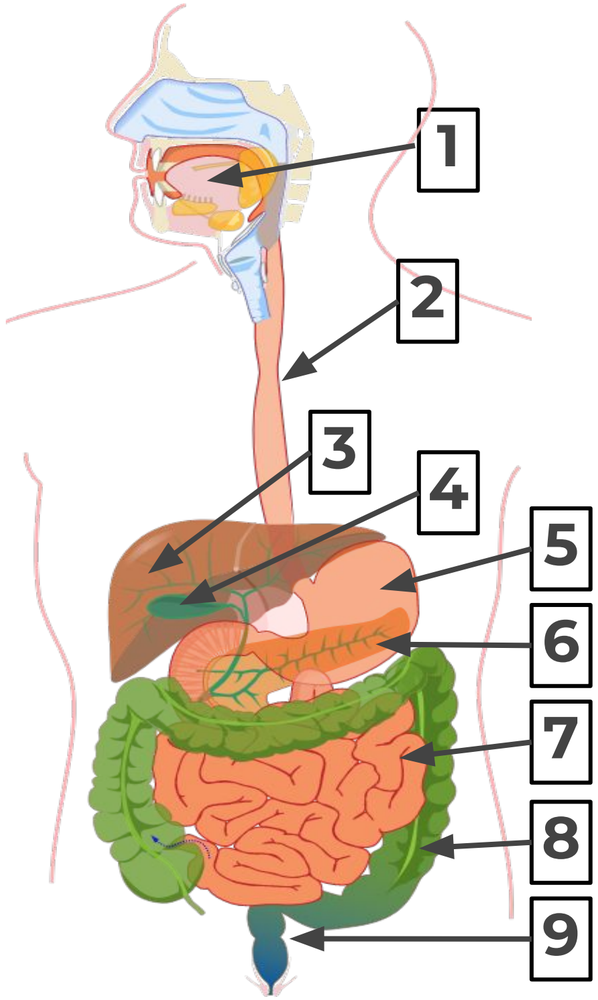
Key words: plants, intestine, system, digestive, type, tissue, bone, organ

Match the following organs to the function

Organ
leaf
heart
Small intestine
flower
lungs

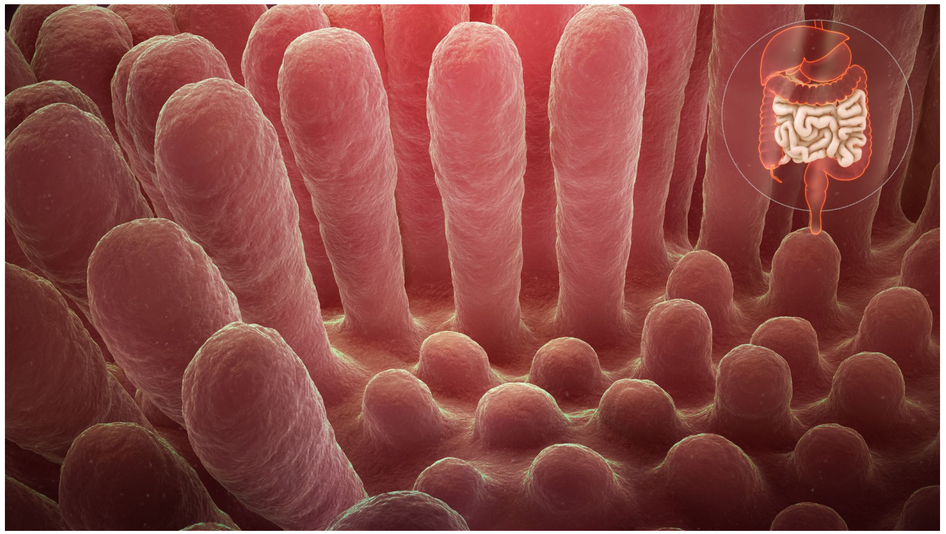
Function
To pump blood around the body
Gas exchange
photosynthesis
Absorption of broken down food molecules
reproduction

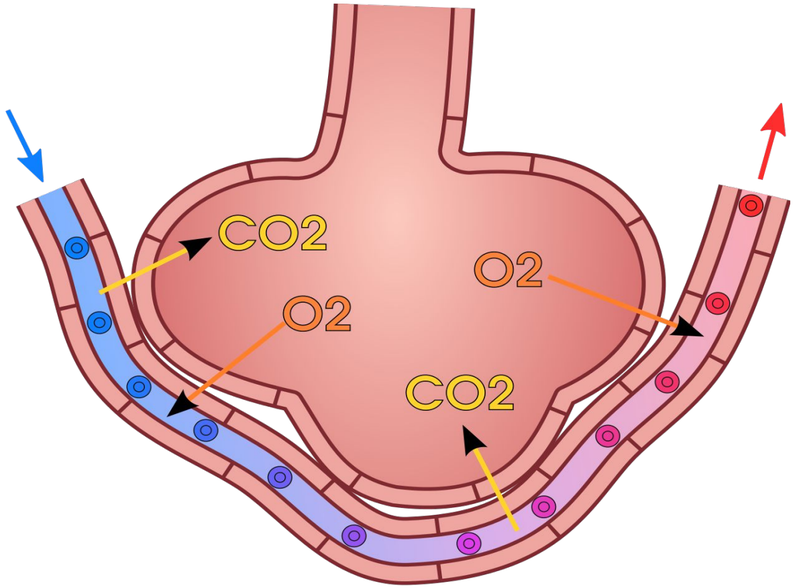
Name the organs of the digestive system



Oesophagus
Stomach
Liver
Pancreas
Rectum and anus
Mouth
Large intestine
Small intestine
Gallbladder

Name these structures and adaptations





What are the adaptations for each of these structures?

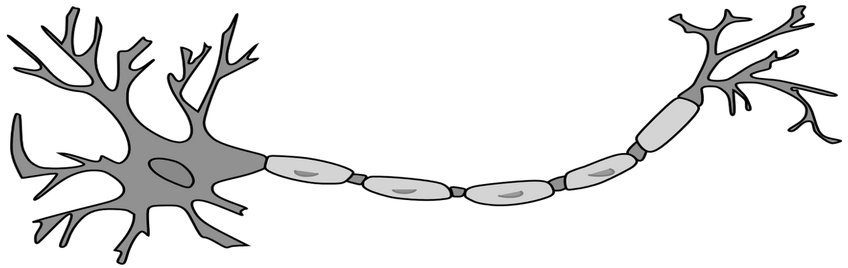
Explain how the small intestine and the lungs are adapted for efficient diffusion.

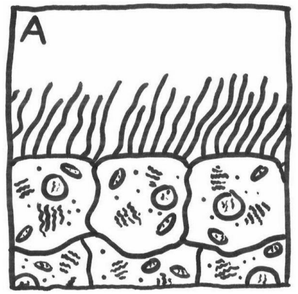
Include:

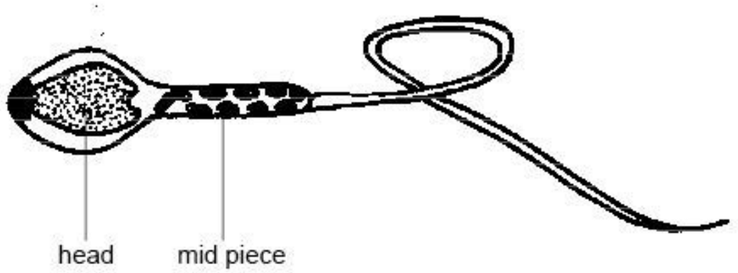
- The name of the structures involved
- Adaptations which they share
- Link to diffusion
- Name the substances diffusing

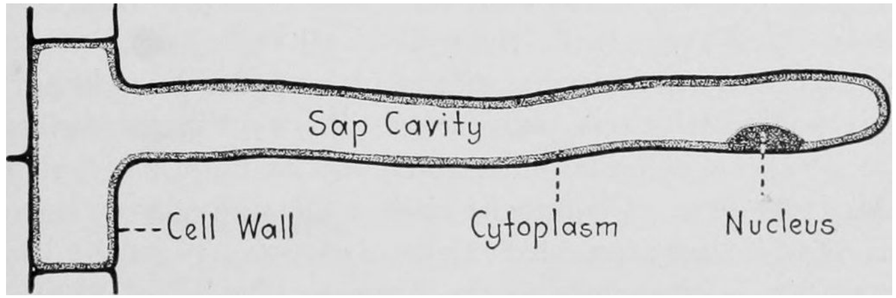
Specialised cells

Name the following cells:









Match up task

Name of cell
Palisade cell
Sperm cell
Red blood cell

Job of cell
Carry oxygen
Fertilise the egg
Photosynthesis

Adaptations of cell
Lots of chloroplasts, transparent
Tail, lots of mitochondria, enzymes in the head, streamlined
Large surface area, no nucleus

Match up task

Name of cell
Root hair cell
Ciliated epithelial cell
Nerve cell
White blood cell

Job of cell
Fight pathogen
Sweep dust and bacteria out of airways
Carries electrical impulses
Absorb water and mineral ions

Adaptations of cell
Flexible shape, lots of ribosomes
Elongated for large surface area
Lots of cilia (hairs)
Long thin axon, dendrites, fatty sheath

Answer the following questions in full sentences:

1. Why do nerve cells have a fatty sheath covering the axon?
2. What is the palisade cell specialised to do?
3. Why are lots of sperm cells not classed as a tissue?
4. How is a white blood cell adapted?
5. What is the function of ciliated epithelial cells?

References

- Slide [3] - [A simple diagram of an unspecialised animal cell without labels] - [domdomegg] - [Wikimedia Commons]
- Slide [7] - [The gastrointestinal tract] - [Mariana Ruiz, Jmarchn] - [Wikimedia Commons]
- Slide [8] - [Inflammed mucous layer of the intestinal villi depicting Celiac disease - scientificanimations] - [Wikimedia]
- Slide [8] - [A diagram showing CO2 leaving the blood and O2 entering in the alveolus.] - [domdomegg] - [Wikimedia Commons]
- Slide [10] - [Illustration showing the effects of tracheal cytotoxin (TCT) on human ciliated epithelial cells] - [Esaah6] - [Wikimedia Commons]
- Slide [10] - [Image from page 66 of "Botany; principles and problems" (1923)] - [Flickr]
- Slide [10] - [By Ruth Lawson - Otago Polytechnic] - [Sunshineconnelly] - [Wikimedia Commons]
- Slide [10] - [Red blood cell] - [Togo Picture Gallery] - [Wikimedia Commons]
- Slide [10] - [Neuron] - [Pixabay]
- Slide [10] - [Diagram of a white blood cell.] - [Cancer Research UK] - [Wikimedia Commons]