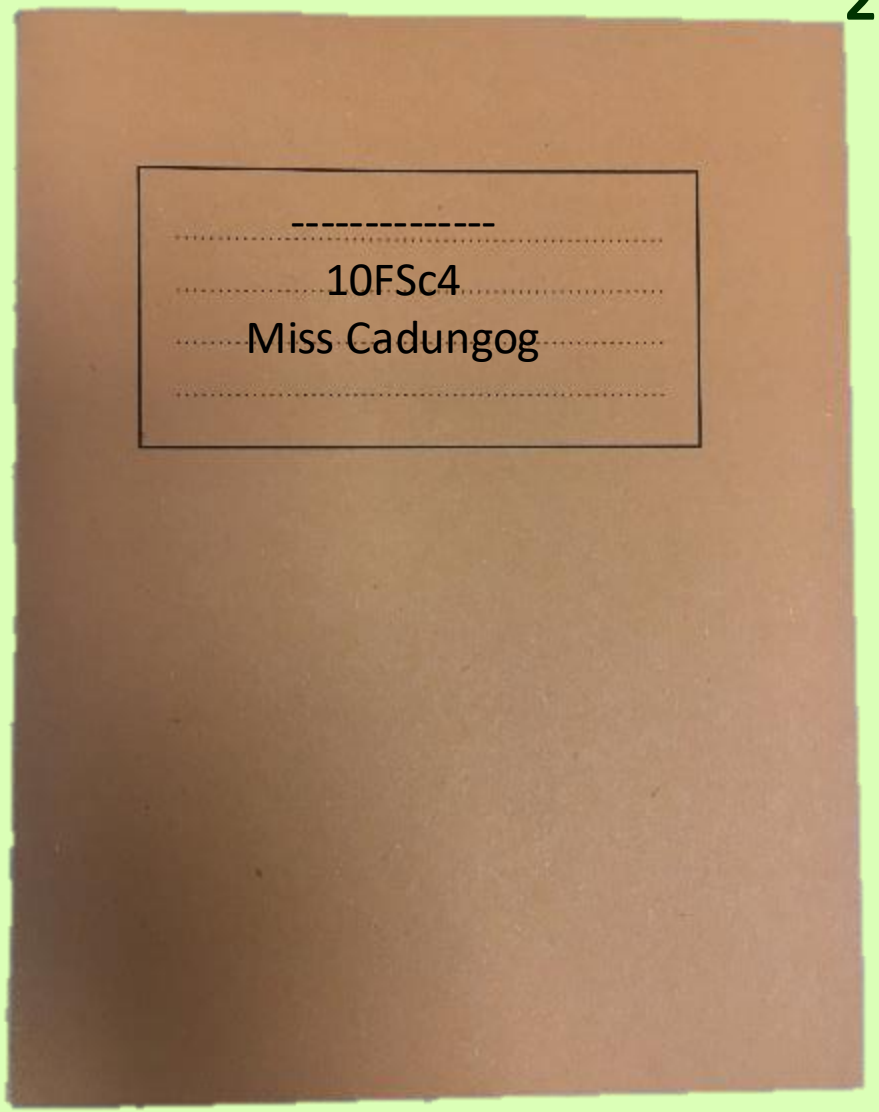
25/09/2025

Starter

1. Write your name and class on your workbook



We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

The rules

- Treat others with respect
- Don’t talk when I am talking
- Try your best
- Ask if you need help

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

When you enter the classroom…

- Coats off
- Bags on the floor
- Notebooks out and READY
- See the board for a task

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Can you remember the routine?...

25/09/2025

Coats off 

Bags on the floor 

Notebooks out and READY 

See the board for a task 

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Homework Expectations

25/09/2025

Homework will be assigned weekly on SENECA

If you can NOT finish it in time, please contact me ASAP.

I am able to give ONE extension, before a detention

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

25/09/2025

Scan to join zyvp6vb0qs

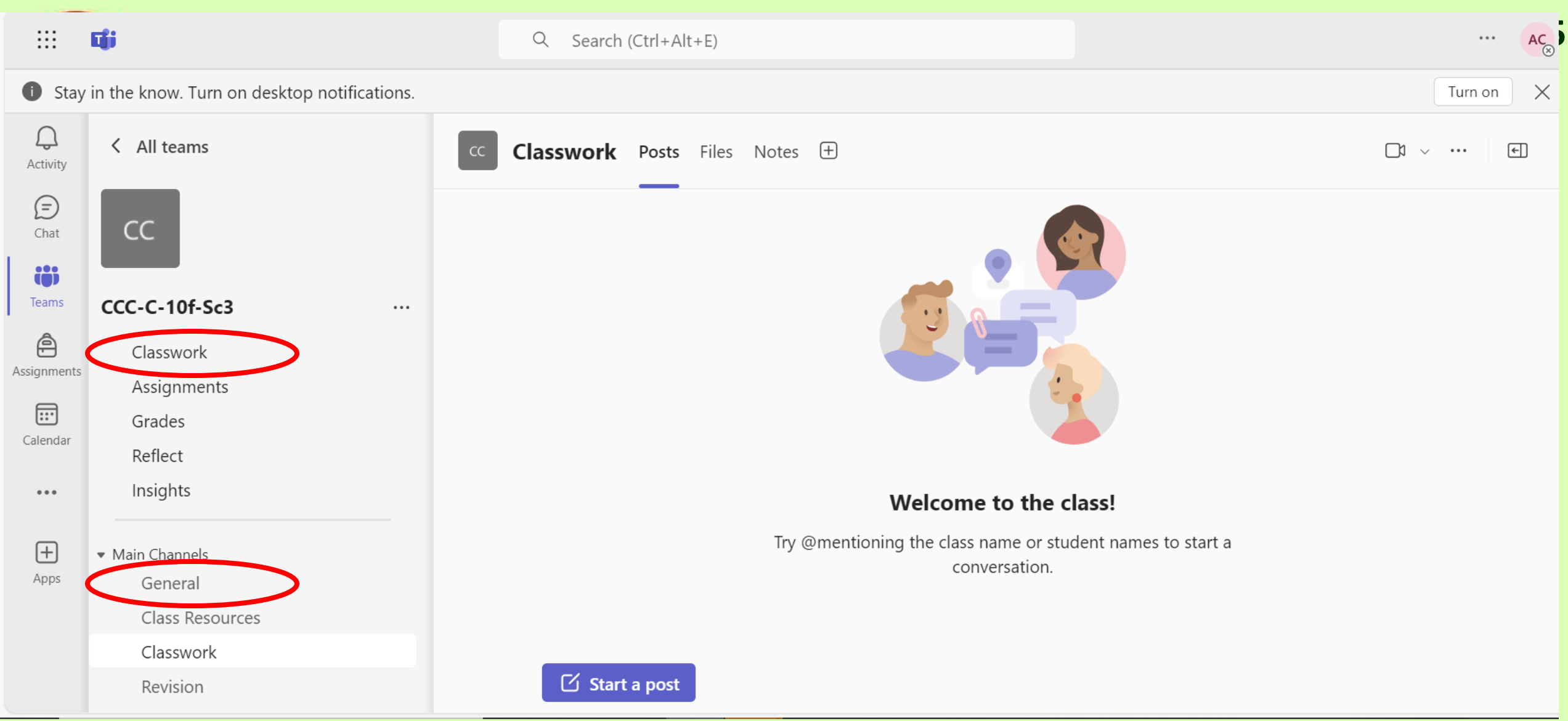
Get your students to scan the QR code and log in to Seneca to join this class.

Done

We are learni

cell, tissue, organ,
em, stomach,
intestine, enzyme, digestion,
absorption, diffusion.

Learning Intention: To understand the major components of the digestive system and how they work.



We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

B2 Organisation - Navigation

25/09/2025

Lesson No.	Topic covered
2.1	Digestive System
2.2	Food tests RPA
2.3	Enzymes
2.4	Enzymes RPA
2.5	Circulatory system, vessels and blood
2.6	Heart Disease
2.7	Respiratory system
2.8	Cancer
2.9	Plant Organs and Transport

Organisation is about different systems in the body and how they provide the required nutrients/material the body needs to survive. It also looks at how damage to these systems can be debilitating if not fatal and how we can treat these diseases with modern medicine.

B2.1 Digestive System

Learning intentions:

1. Be able to define cells, tissues, organs and organ systems.
2. Understand the major components of the digestive system and how they work.

Why are we learning this?

All organisms need to gain certain substances from their environment to survive, understanding how they do that is part of understand how living things work (thus, biology!)

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Organisation

TASK: Match the definitions to the appropriate term.
EXTENSION: Provide a named example of each term

Cell

Tissue

Organ

Organ System

Organism

- A group of cells with similar structure and function, working together
- The smallest unit of life
- A series of organ systems which together form a living organism
- A group of organs working together to perform a function
- A group of tissues working together to form a structure with a particular function

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Activity 1: Answer time! (self assess)

25/09/2025

Cell	A group of cells with similar structure and function, working together
Tissue	The smallest unit of life
Organ	A series of organ systems which together form a living organism
Organ System	A group of organs working together to perform a function
Organism	A group of tissues working together to form a structure with a particular function

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

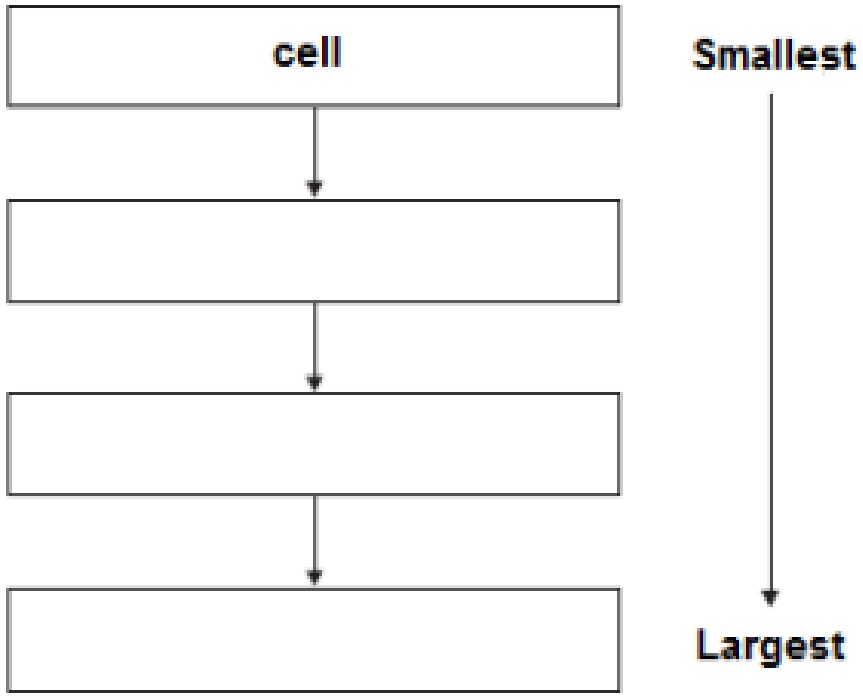
The human body is organised to carry out many different functions.

(a) Use words from the box to complete **Figure 1** by putting the parts of the body in order of size from smallest to largest.

The smallest one has been done for you.

cell	**organ system**	**organ**	**tissue**

Figure 1



(2)

We are learning this

Learning Intention: T
they work.

ssue, organ,
mach,
, digestion,
sion.

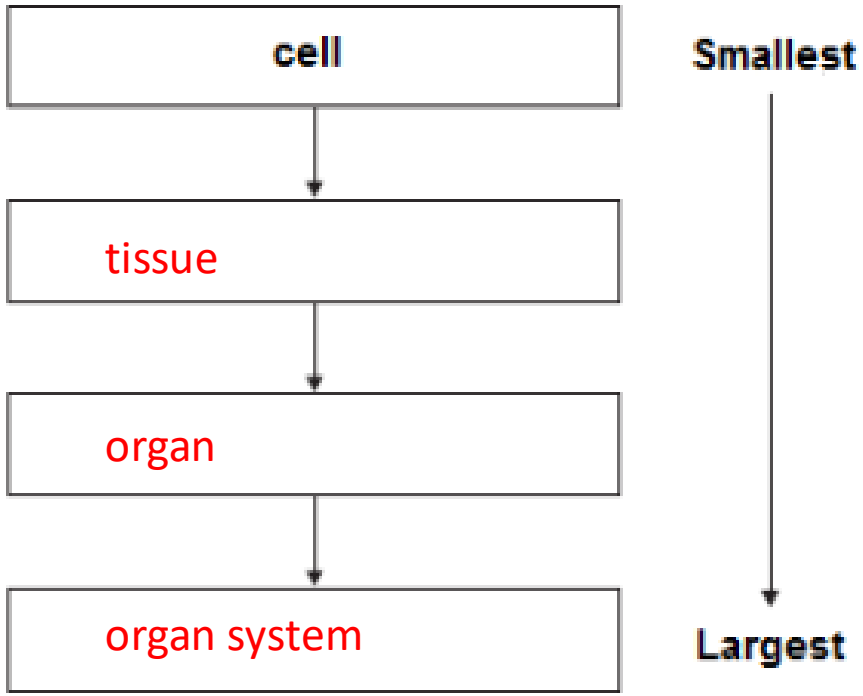
The human body is organised to carry out many different functions.

(a) Use words from the box to complete **Figure 1** by putting the parts of the body in order of size from smallest to largest.

The smallest one has been done for you.

cell	**organ system**	**organ**	**tissue**

Figure 1



(2)

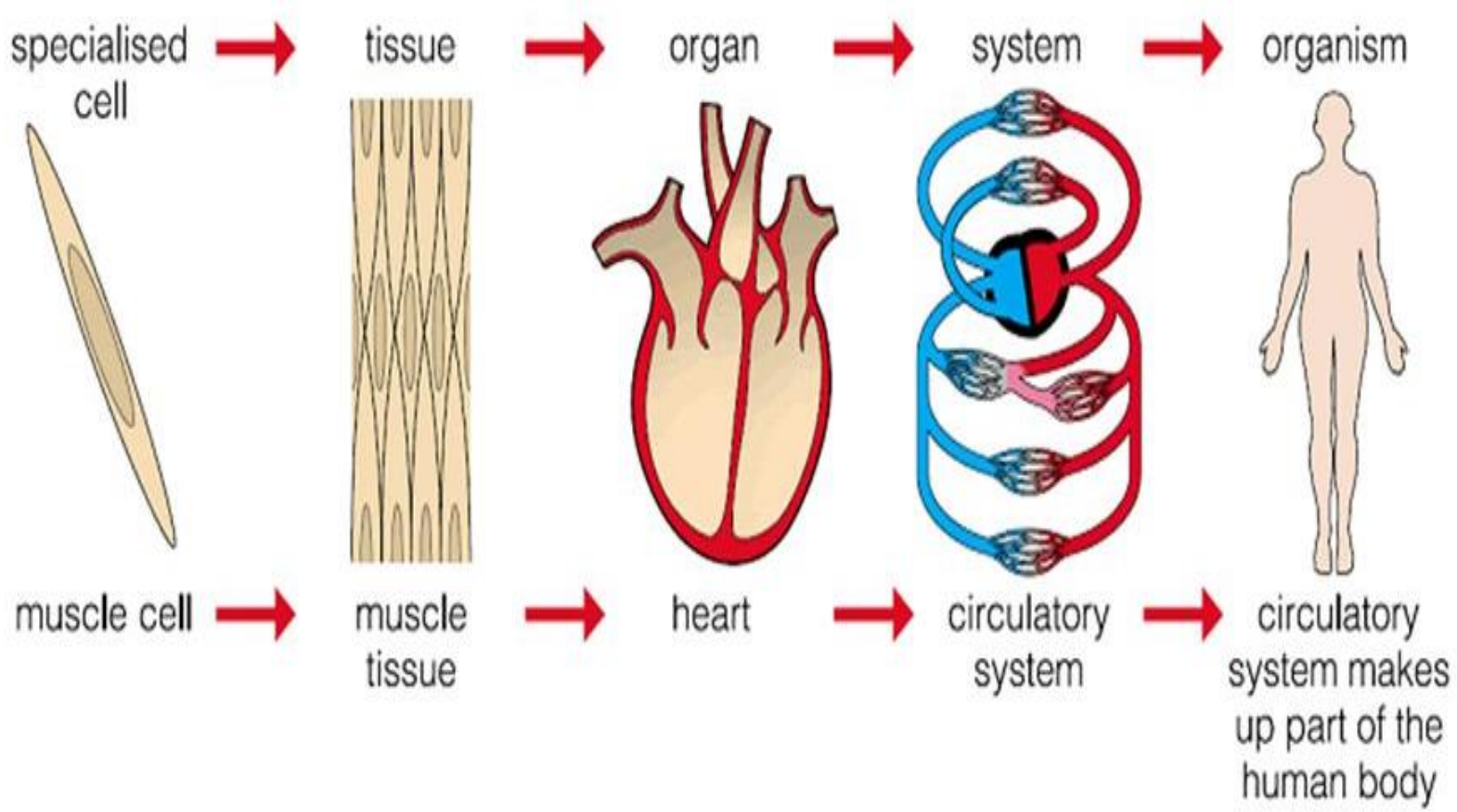
We are learning this

Learning Intention: T
they work.

ssue, organ,
mach,
, digestion,
sion.

Organisation

25/09/2025



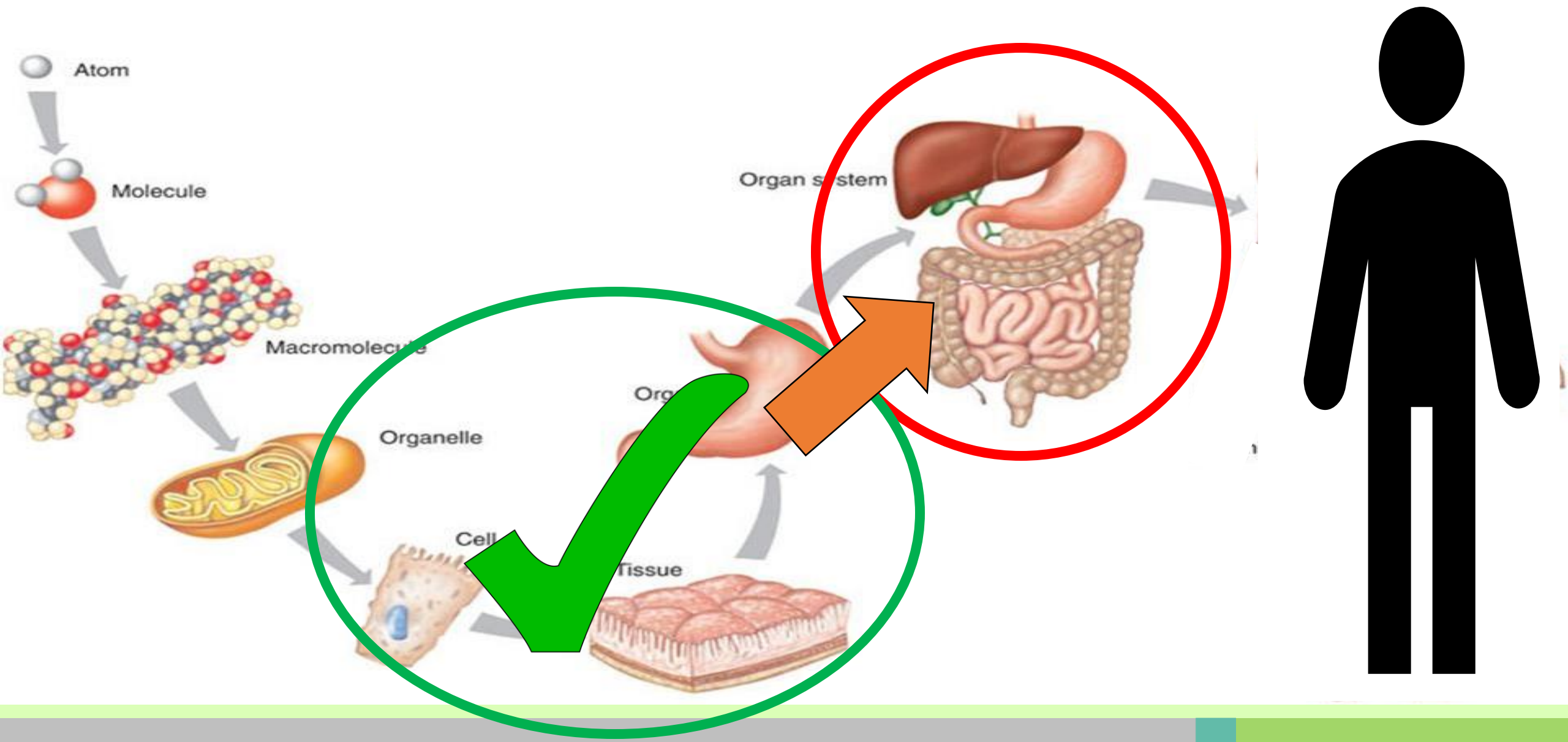
One example is the digestive system.

1. **What is the function of the digestive system?**

2. **What organs can you remember from the digestive system?**

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.



We are learning this because absorbing nutrients allows our bodies to function.

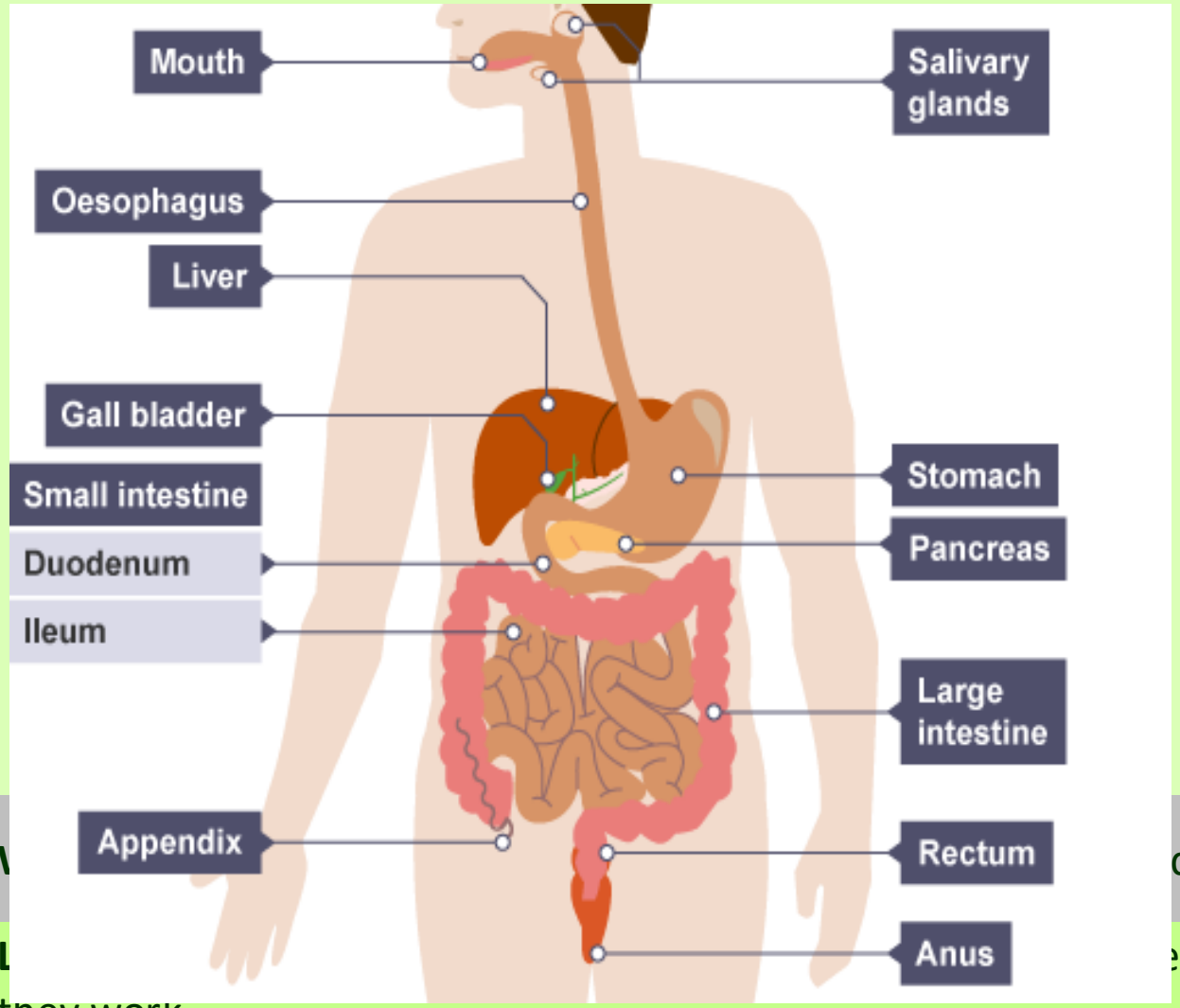
Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.


Digestive System

The digestive system

25/09/2025



The digestive system is made up of lots of different organs (small intestine, large intestine, stomach).

These all work together, but to do what?

To break down and absorb nutrients from food.

dies to function.

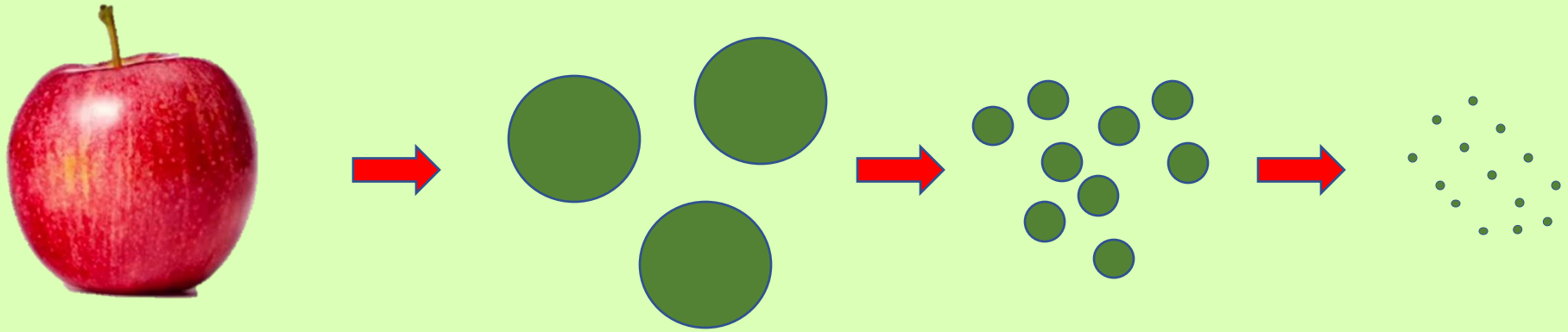
e digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

What is digestion? Why is it necessary?

25/09/2025

Digestion is the breakdown of food into smaller pieces. This can be both **mechanical** (e.g. chewing) or **chemical** (enzymes)



We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

25/09/2025

MECHANICAL VS CHEMICAL DIGESTION

Mechanical Digestion

- Physical breakdown of food, such as chewing or churning in the stomach.

Chemical Digestion

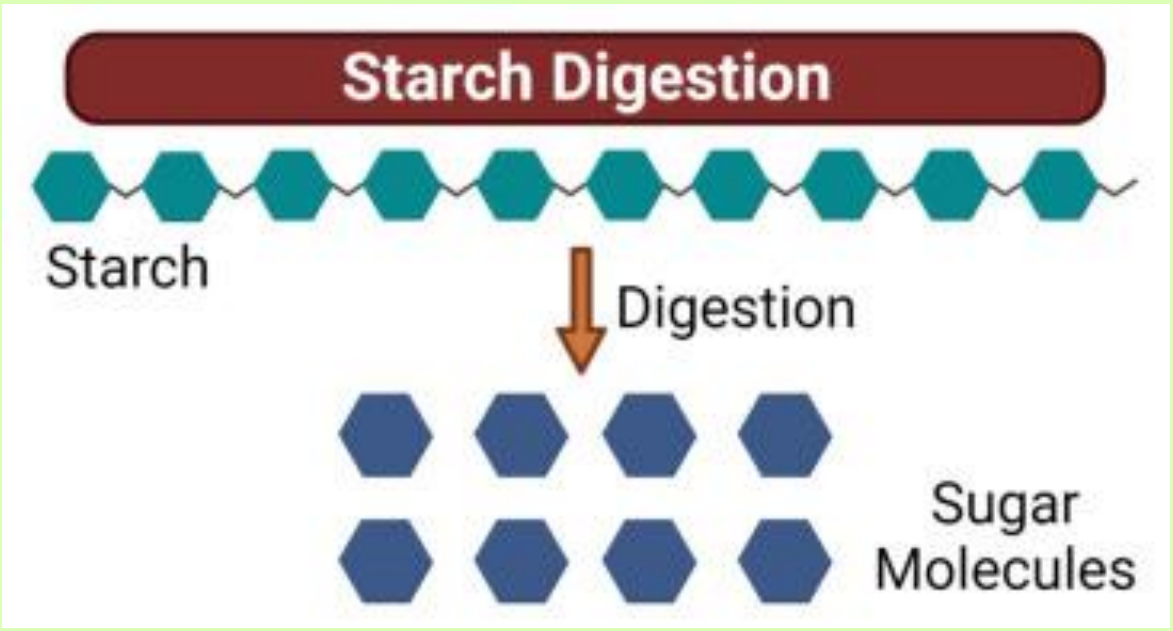
- Uses enzymes and acids to break food into smaller molecules.

Both types are essential for digestion to be effective.

We are learning this because absorbing nutrients allows our bodies to f an,

Learning Intention: To understand the major components of the digestive system and how they work.

organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.



Mechanical Example

Chewing bread in your mouth or stomach muscles mixing food.

Chemical Example

Saliva breaking down starch or stomach acid digesting protein.

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

25/09/2025

Watch the following overview/summary video

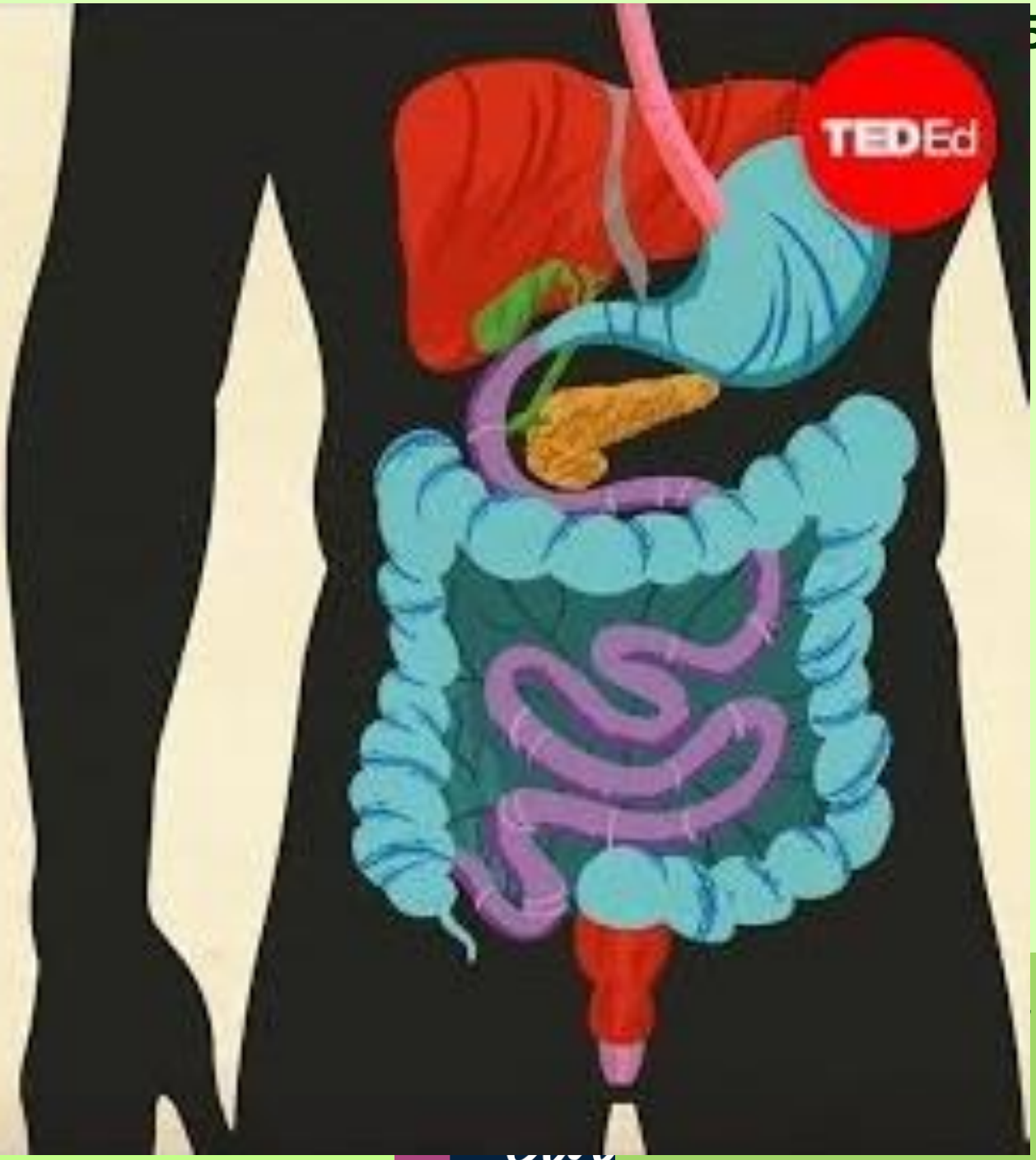
https://www.youtube.com/watch?v=Og5xAdC8EUI

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

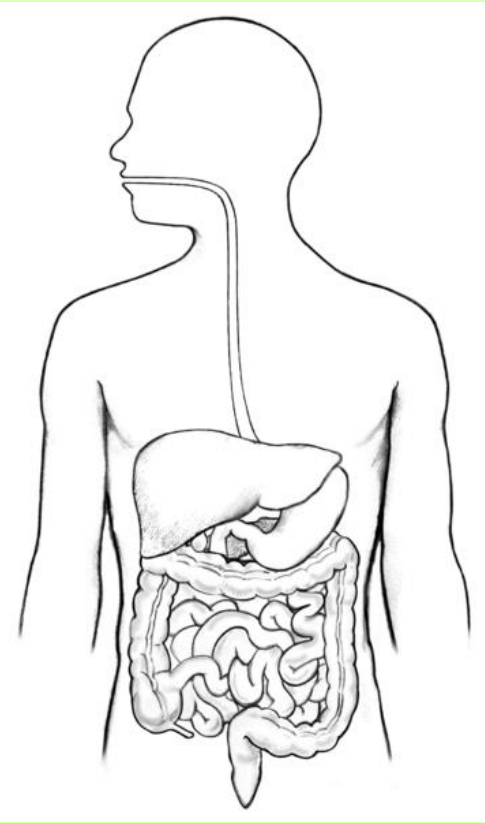
HOW THE DIGESTIVE SYSTEM WORKS



25/09/2025

On your worksheets

1. Identify the organs.
2. Identify sites of chemical and mechanical digestion.
3. Add in other details. E.g. where/why stomach acid is secreted, where enzymes are secreted, role of pancreatic juices & bile etc.



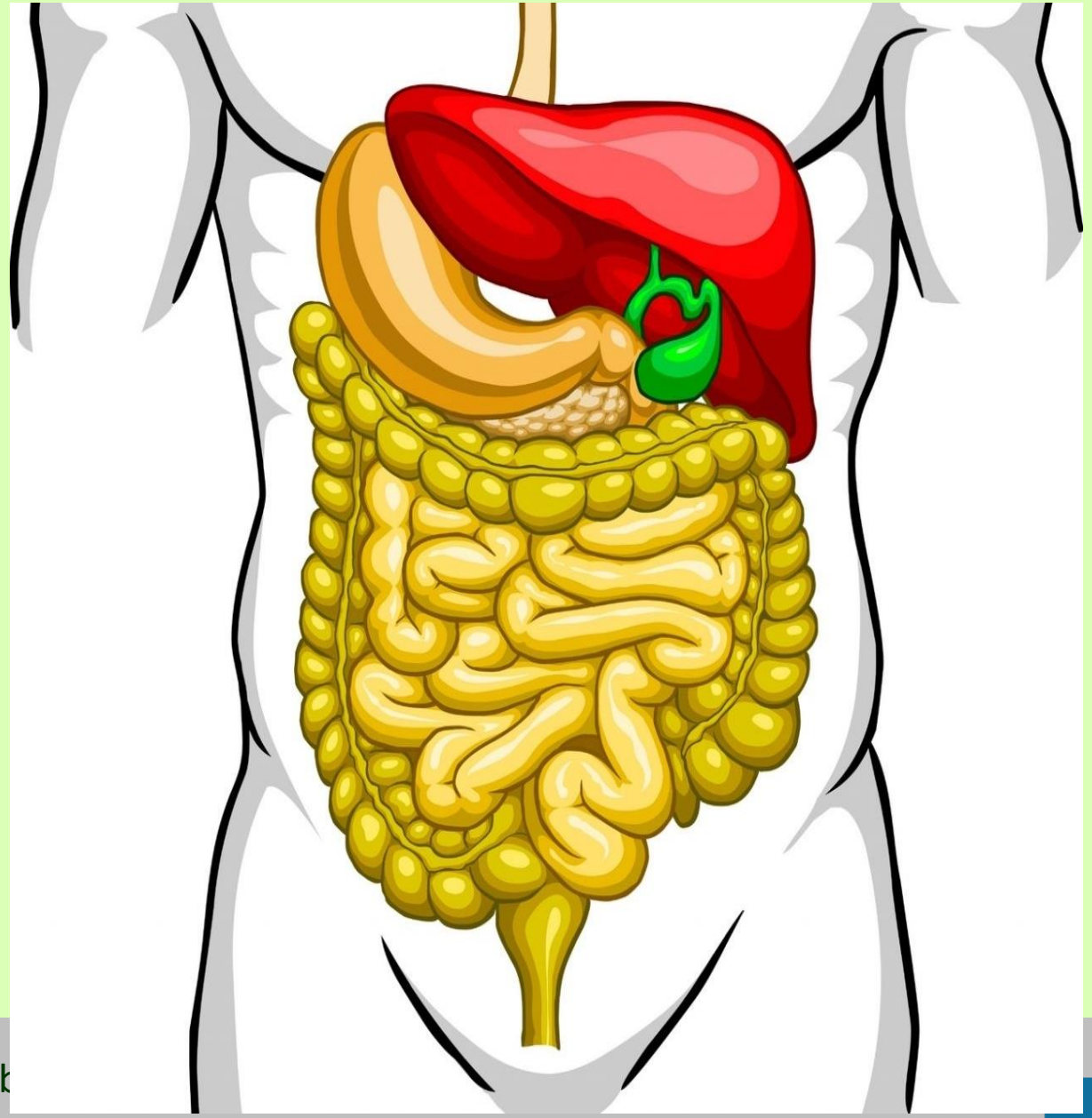
We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Biology

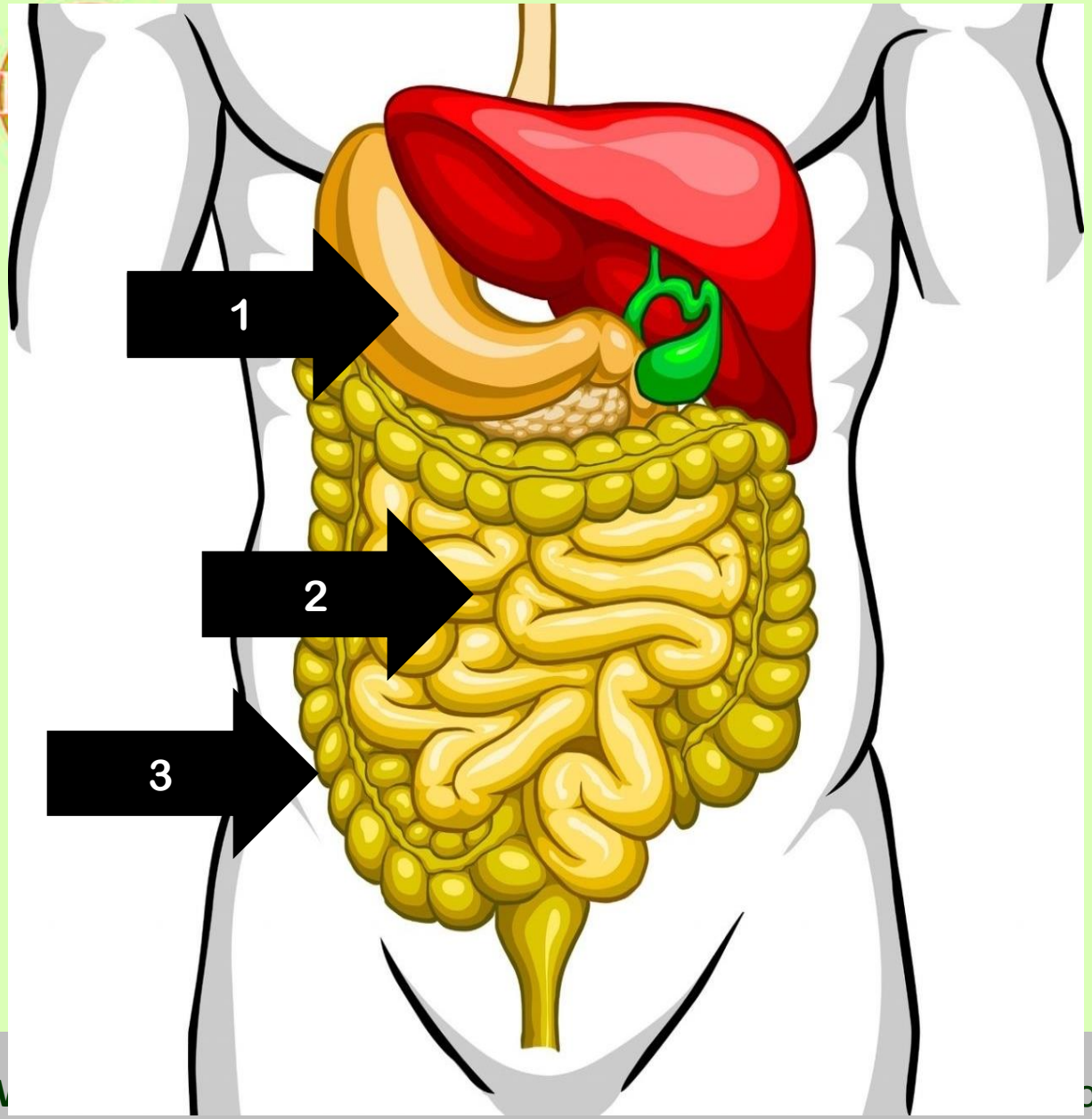
25/09/2025



We are learning this because absorb

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.



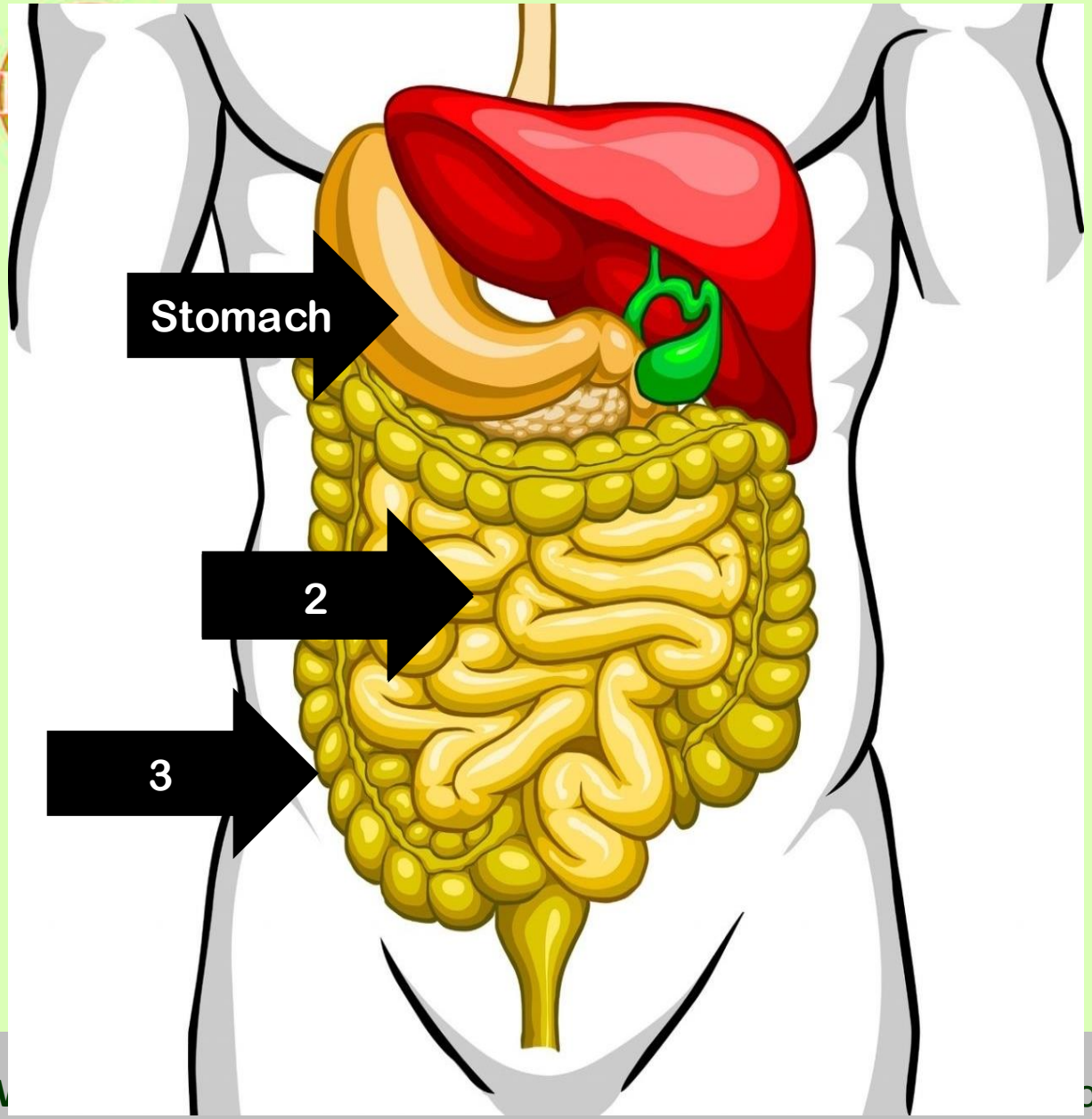
1. Stomach

The stomach is where food is contained and mixed with enzymes and acids to digest the food

odies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.



2. Small intestine

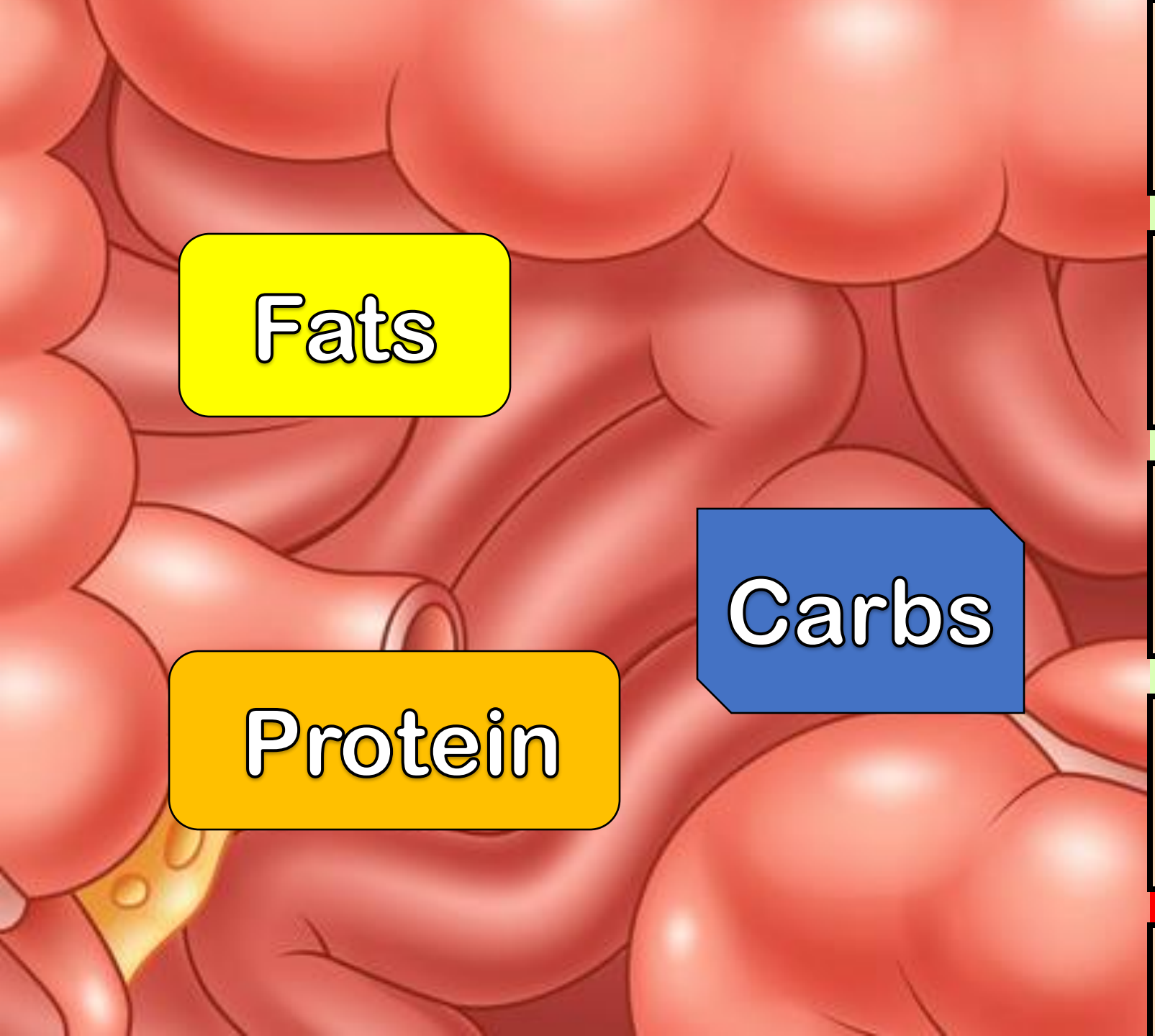
Digestion and absorption of nutrients begins.

There are small projections called villi here too.

V **odies to function.**

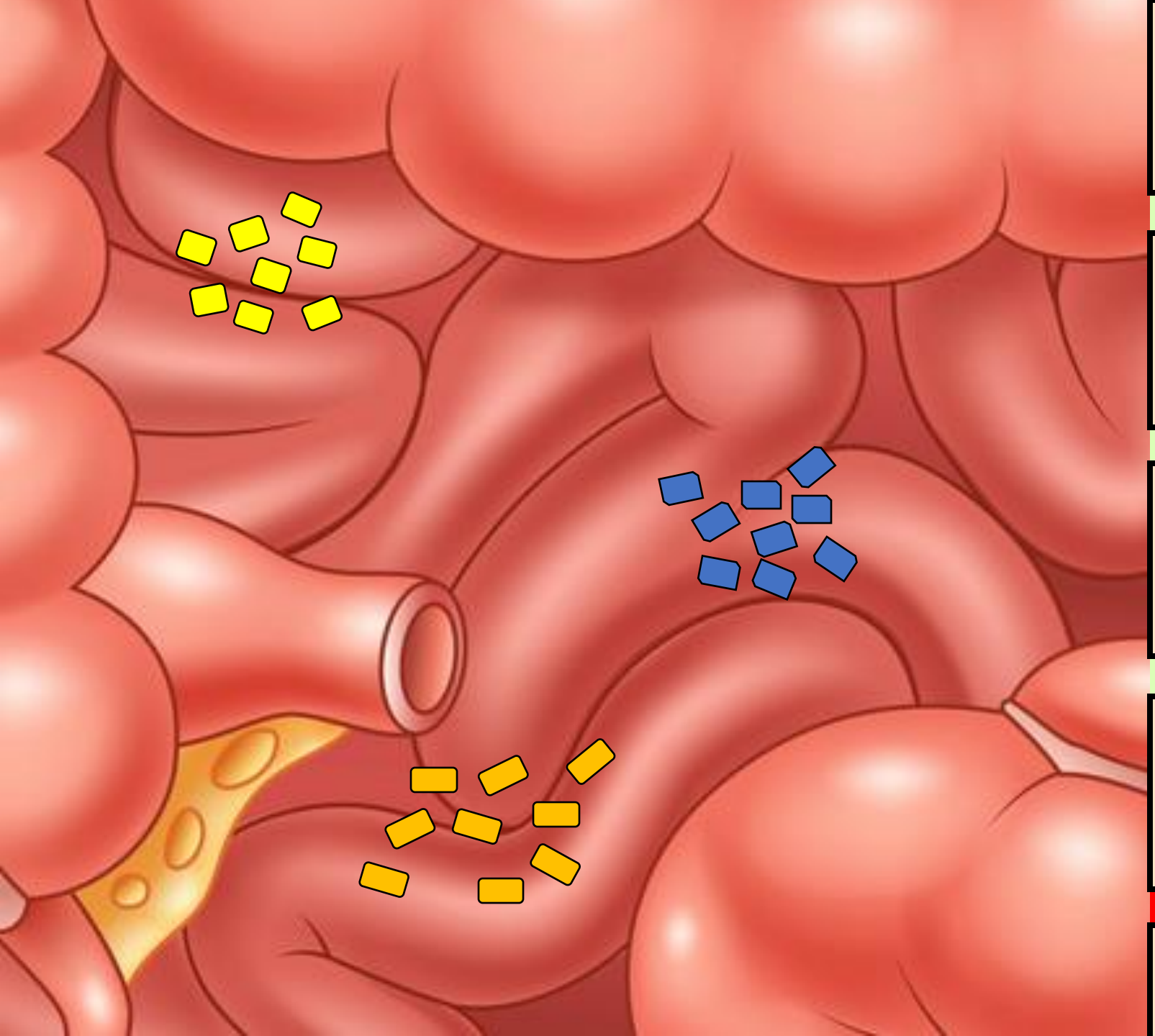
Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.



25/09/2025

BIOD



25/09/2025

BIOD

1.Large surface area

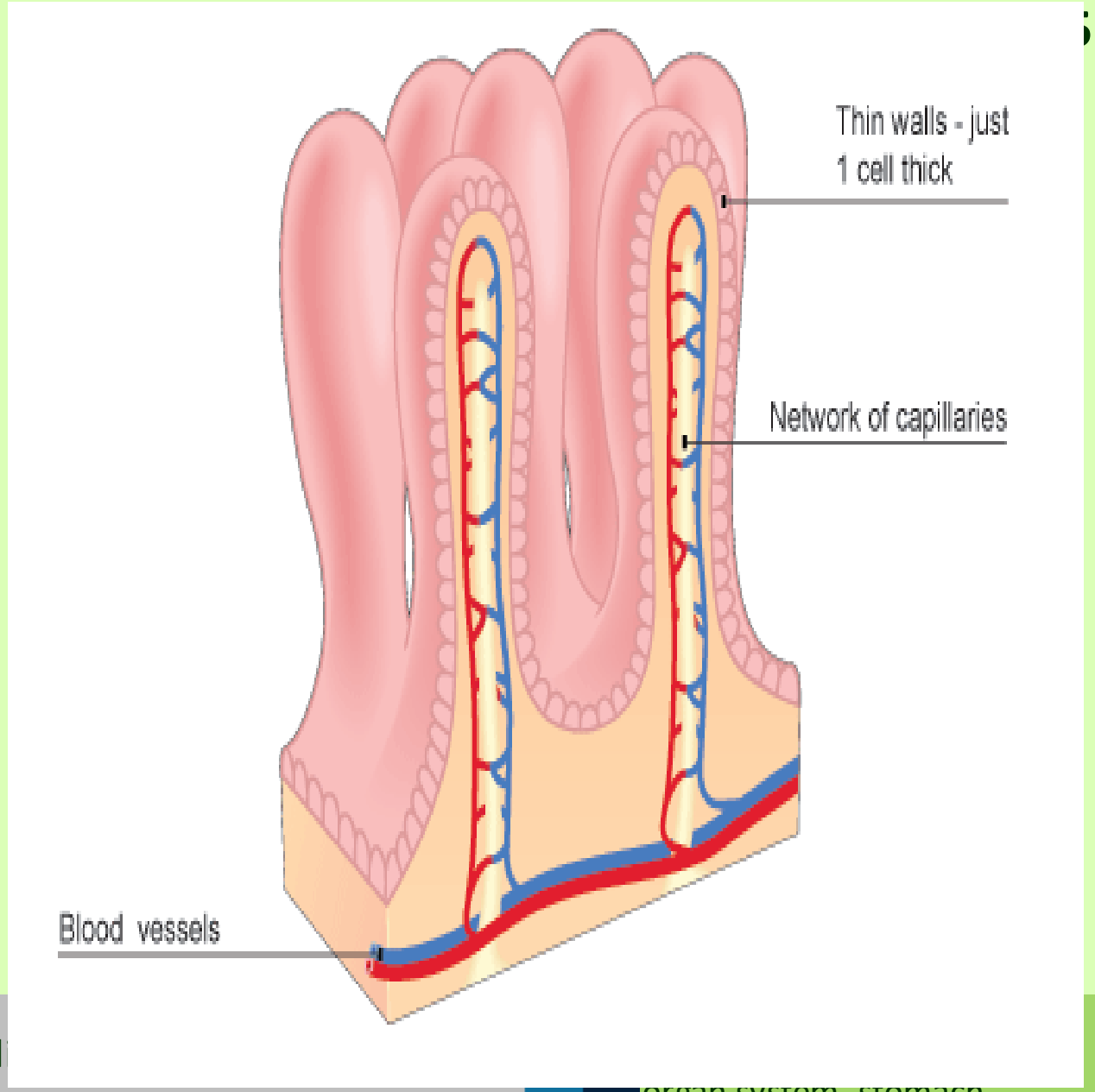
Nutrients have a larger area over which they can be absorbed

2. Thin membrane between small intestine and blood

Allows easy movement of nutrients

3. Good blood supply

Nutrients have large volume of liquid to dissolve in.



We are learning this because absorbing nutrients allows our bod

Learning Intention: To understand the major components of the digestive system and how they work.

organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Fill in your worksheets

25/09/2025

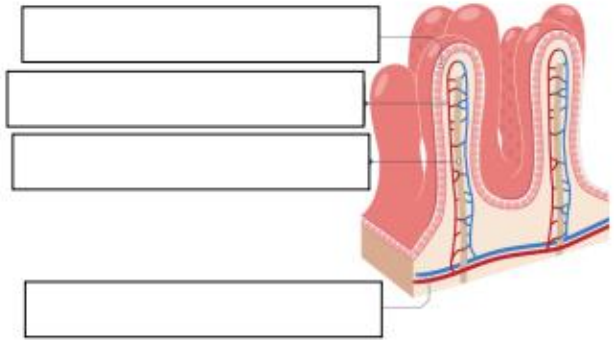
Adaptations of the Small Intestine (Extra Support)

What are the two functions of the small intestine?

1. _____

2. _____

Label the following:



How are Villi adapted to absorbing lots of nutrients quickly? Explain how this would help.

1. The Villi have a _____ surface area, this means there is more space available to _____ nutrients into the blood.

2. The Villi have a good _____ supply. This rich supply of _____ means that lots of nutrients and minerals can get into the _____ quickly.

3. The walls of the Villi are only a _____ cell-thick – this means there is a really small _____ to diffuse so material can be absorbed really quickly.

Words: distance, blood (x3), large, absorb, single.

We are learning this because absor

Learning Intention: To understand t

how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

4 marks

25/09/2025

(i) **Level 2:** Relevant points (reasons/causes) are identified, given in detail and logically linked to form a clear account.

3–4

Level 1: Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical linking.

1–2

No relevant content

0

Indicative content

- have (many) microvilli
- (to) increase surface area

- wall of villus only one cell thick **or** is thin
- capillaries are close to surface
- (so) short pathway

- good blood supply
- (to) transport food molecules away **or** to the body
- (and) maintain a diffusion gradient

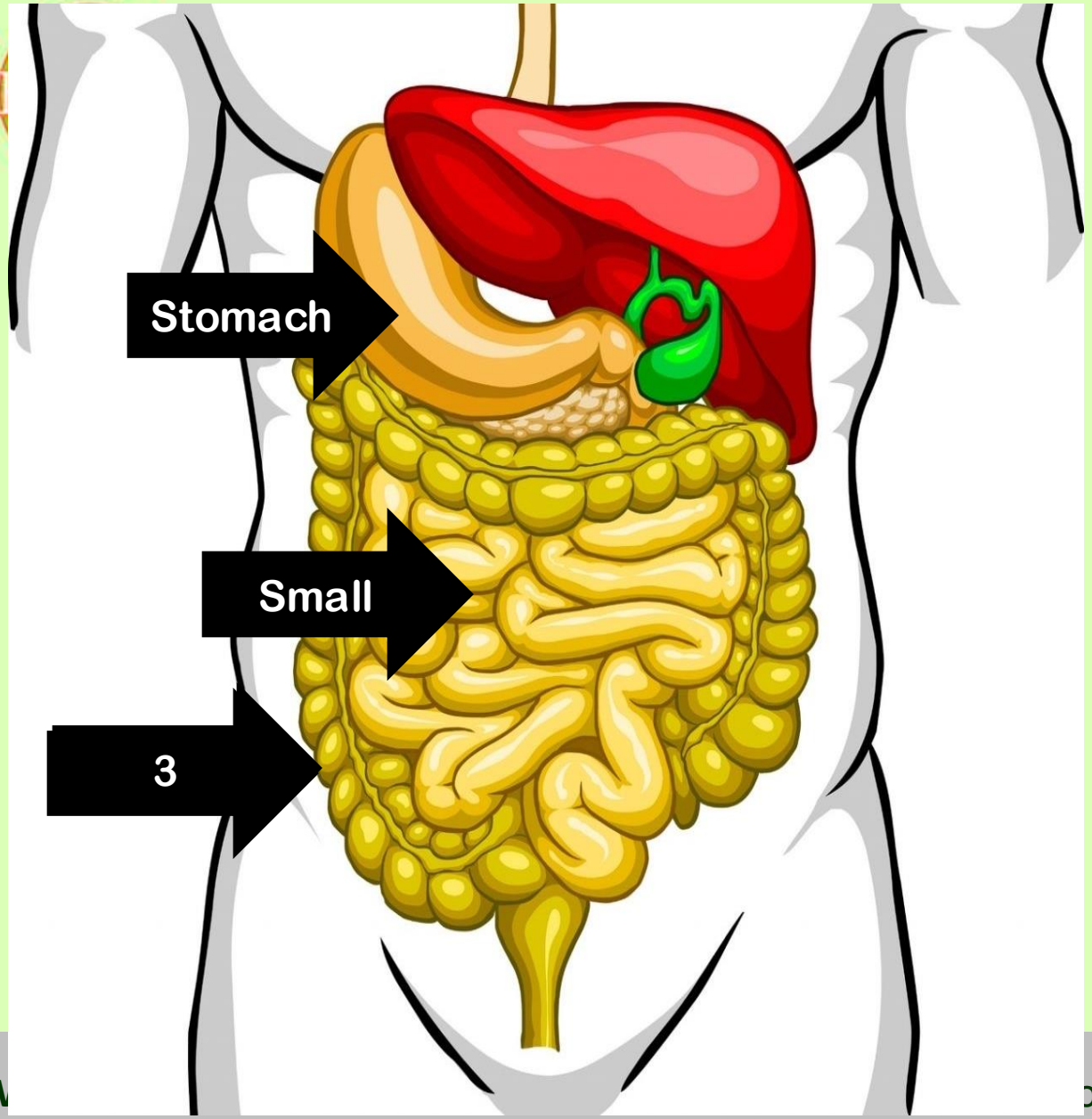
- cells have many mitochondria
- (where) respiration takes place
- (where) energy is transferred
- (as) active transport requires energy
- energy is needed to absorb sugar / food / molecules

For Level 2 must make links between structure and it's function

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.



3. Large intestine

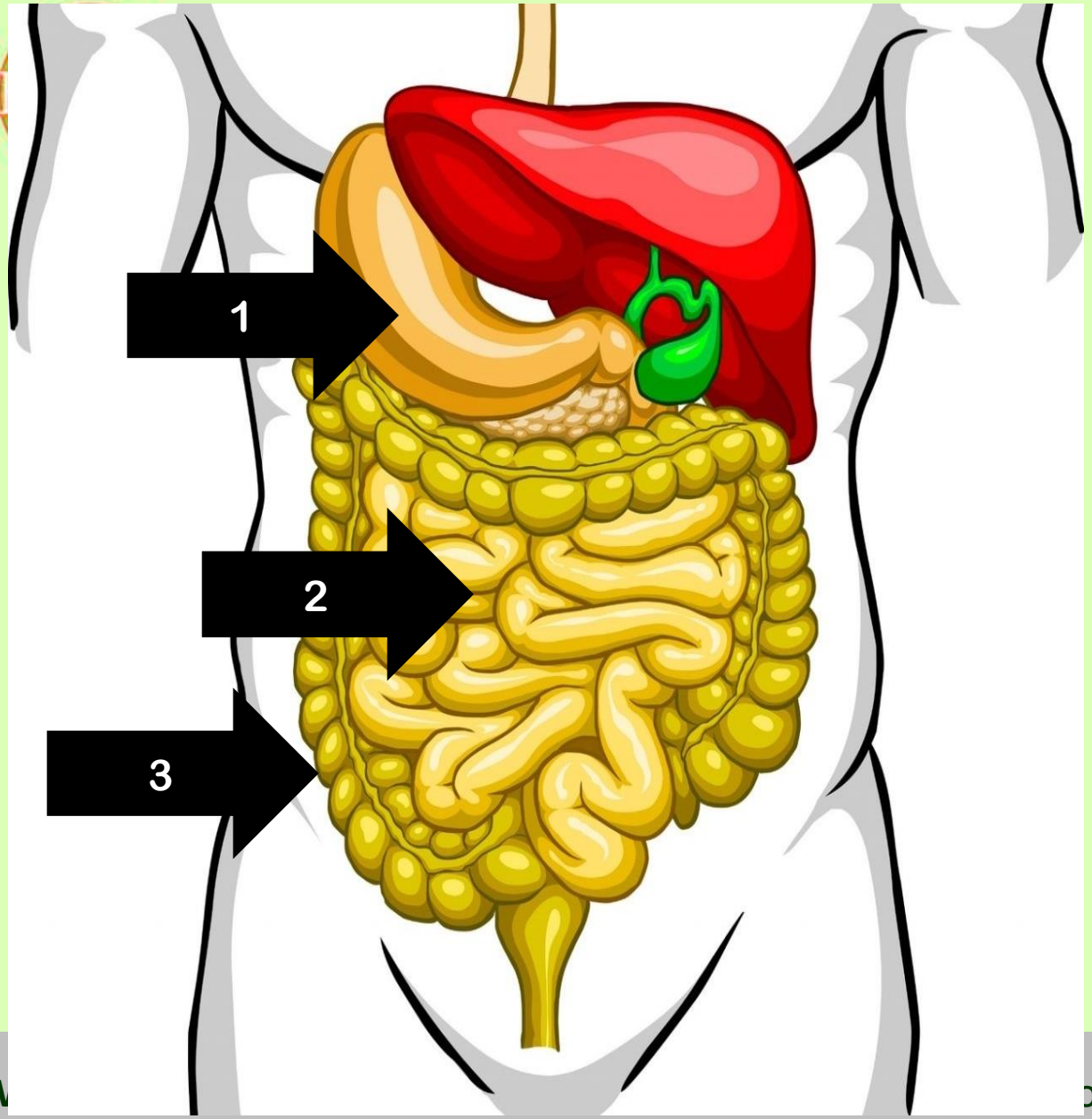
Absorption of excess water, leading to egestion of undigested food.

In other words, what is left is pooed out.

V **odies to function.**

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.



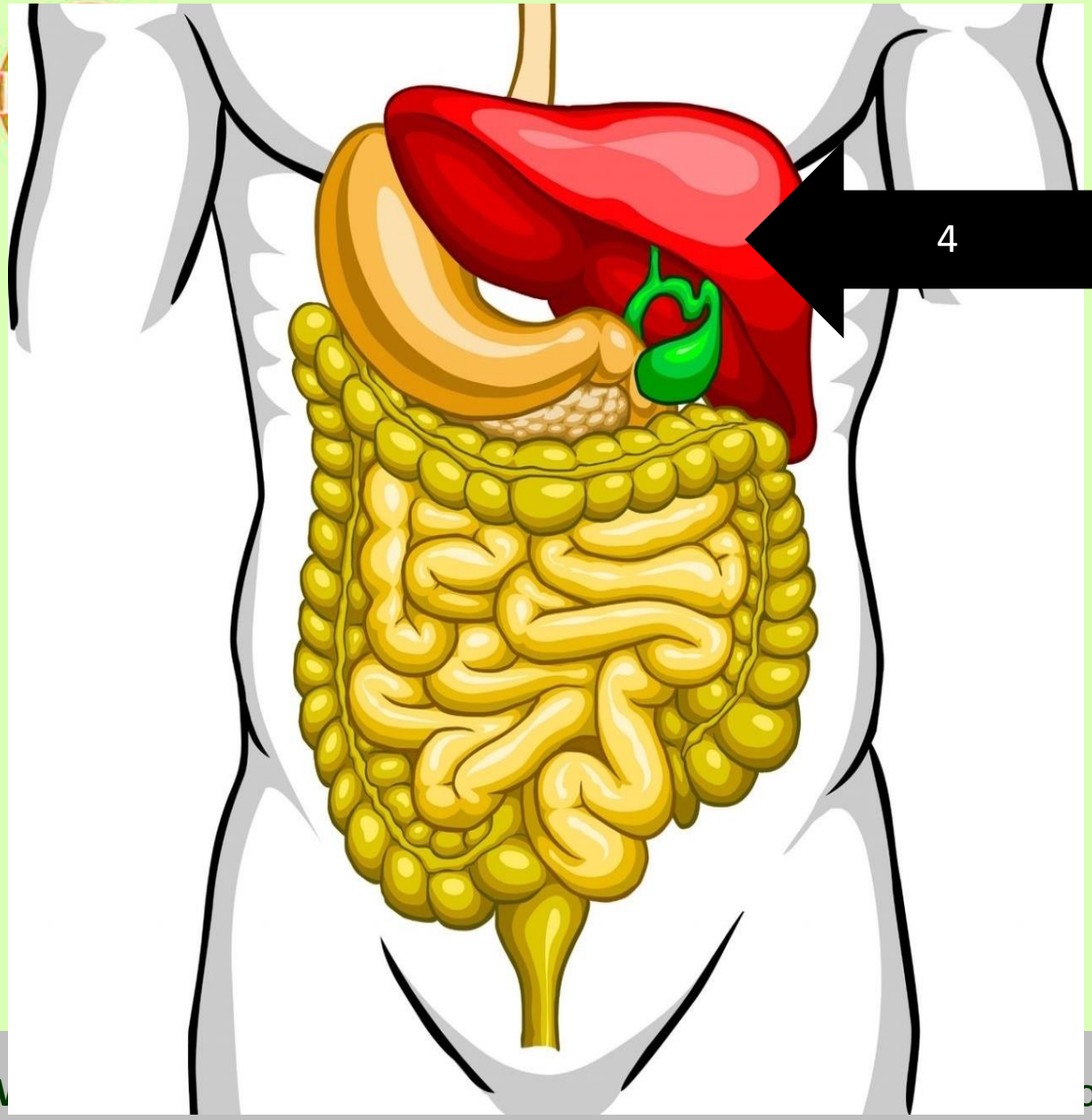
From memory, label parts 1-3 and explain their function.

odies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

3. Liver



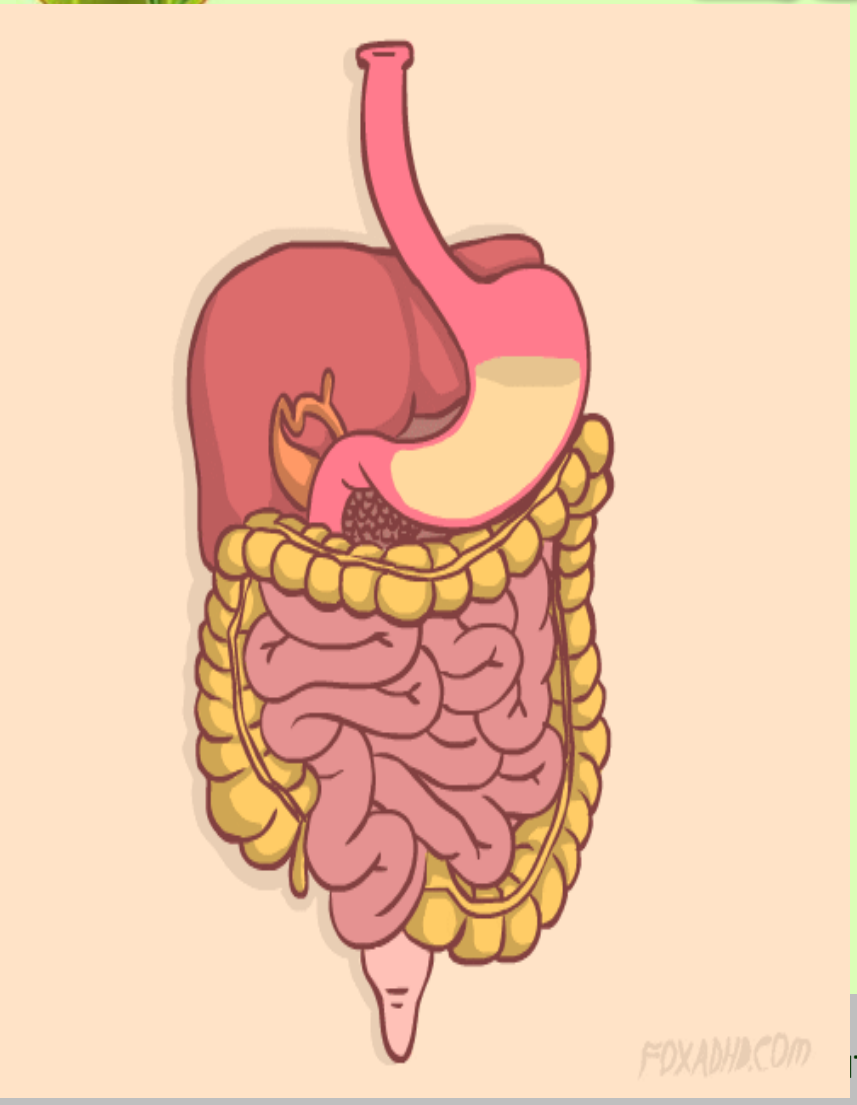
odies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Liver & bile

25/09/2025



Fats are hard to digest. Here's why:

- Fats form large globules with a large volume but small surface area.
- Fats and water do not mix well and our digestive system is water-based.
- Collectively this makes it hard for enzymes to digest food. So what do we do?

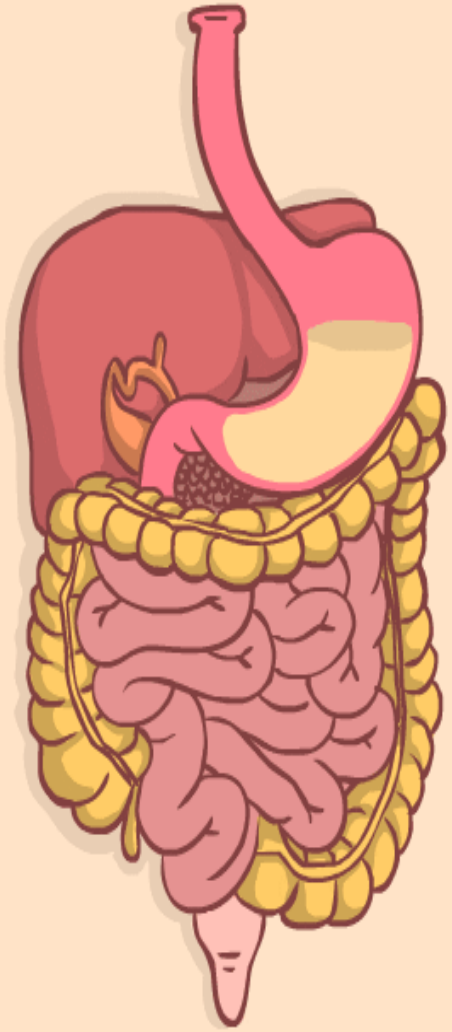
trients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Liver & bile

25/09/2025



Bile is produced by the liver and stored in the gallbladder.

Bile can:

1. **Emulsify fats – break down large fat droplet to smaller ones**
2. **Neutralise stomach acid**

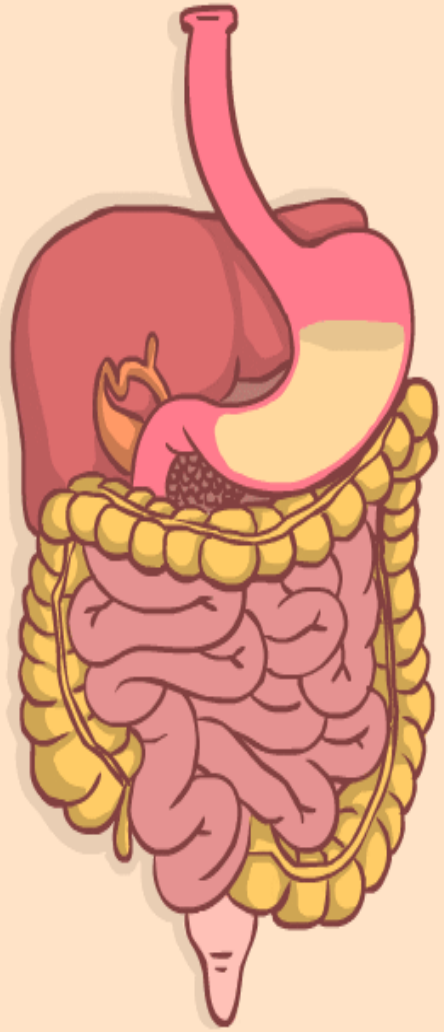
trients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Liver & bile

25/09/2025



So how do we digest the large globules of fat?

- The liver produces bile which is stored in the gallbladder.
- Bile is an emulsifier meaning it breaks the fat down, increasing the surface area and allowing lipase enzymes to break fat down easily.

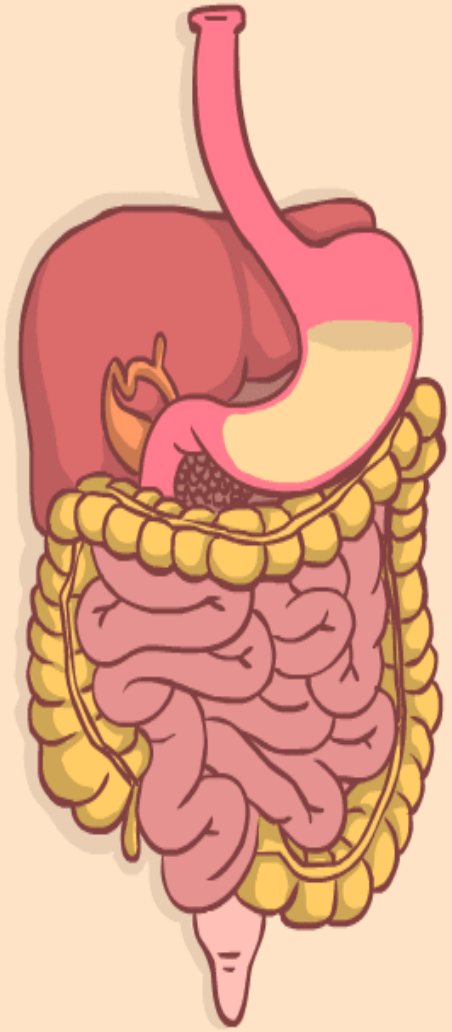
trients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Liver & bile

25/09/2025



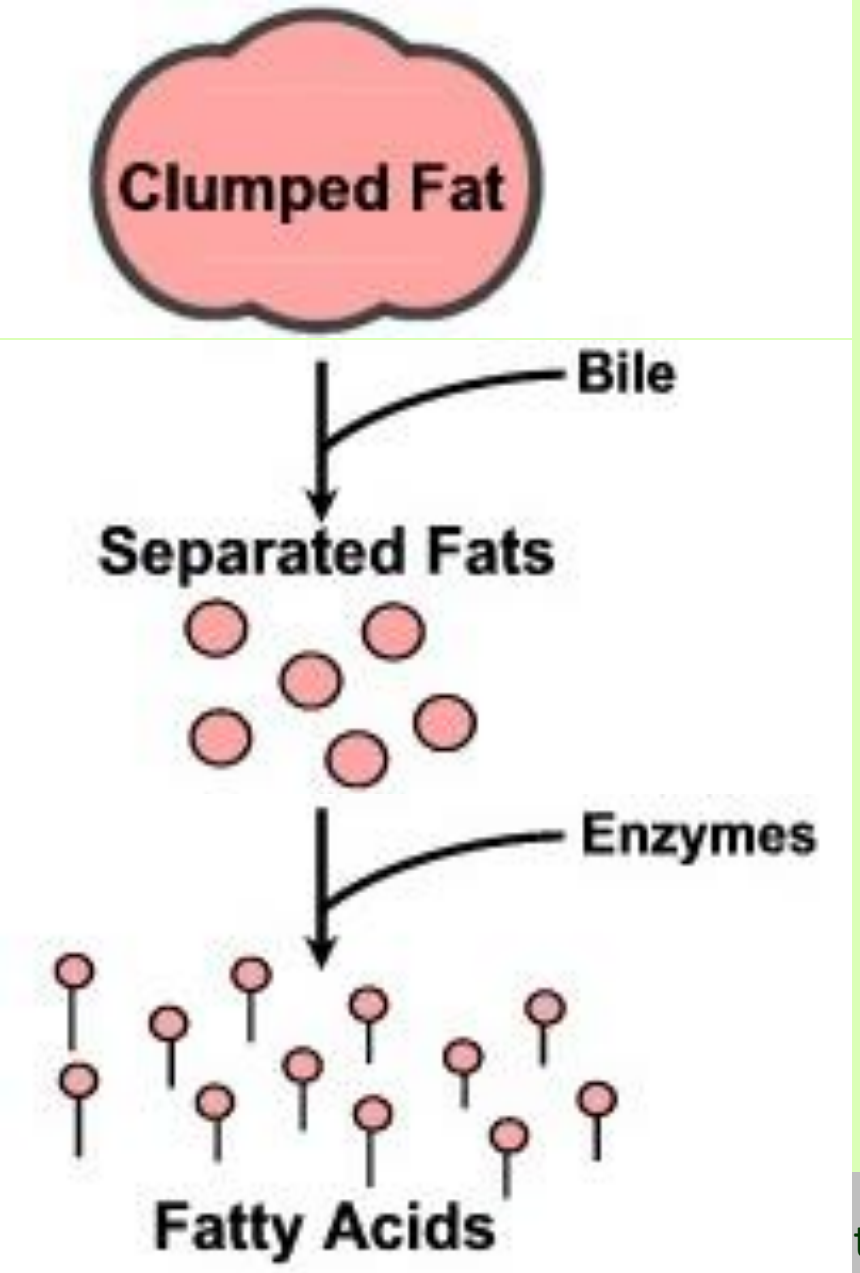
So how do we digest the large globules of fat?

- The liver produces _____ which is stored in the gallbladder.
- Bile is an _____ meaning it breaks the fat down, increasing the _____ _____ and allowing _____ enzymes to break fat down easily.

trients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.



Fat is in a big clump (a globule) and it doesn't mix with water. This makes it hard to digest.

Bile is used as an emulsifier – meaning it breaks the fat into smaller parts

This makes it easier for enzymes to break it down

trients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Practical Time!

25/09/2025

DO NOW:

1. Put books/pens/iPad out of the way

2. Stand and push in stools

3. Tie up long hair

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Practical Time!

25/09/2025

Collect:

1. Test tube rack
2. 2 test tubes
3. 2 bungs

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

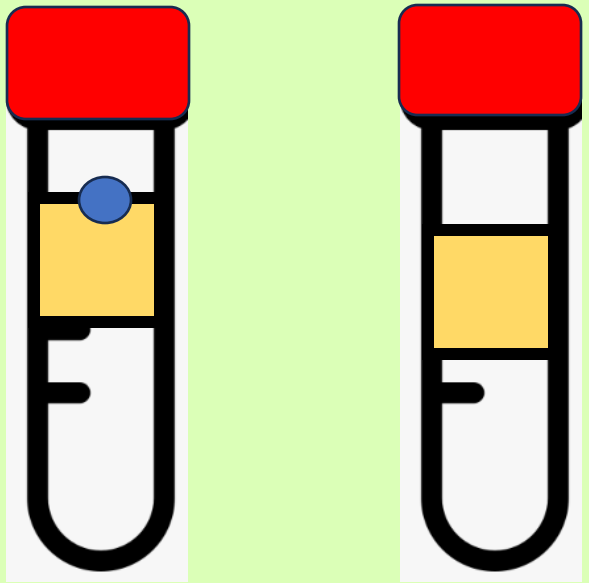
Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Practical Time!

25/09/2025

Procedure:

1. Fill 1/2 of the test tubes with water
2. Pour a centimetre of oil carefully into both test tubes
3. Add a few drops of dish soap to ONE test tube
4. Put caps on both test tubes
5. Invert the test tubes 10 times
6. Start timer – **Which one separates more quickly?**



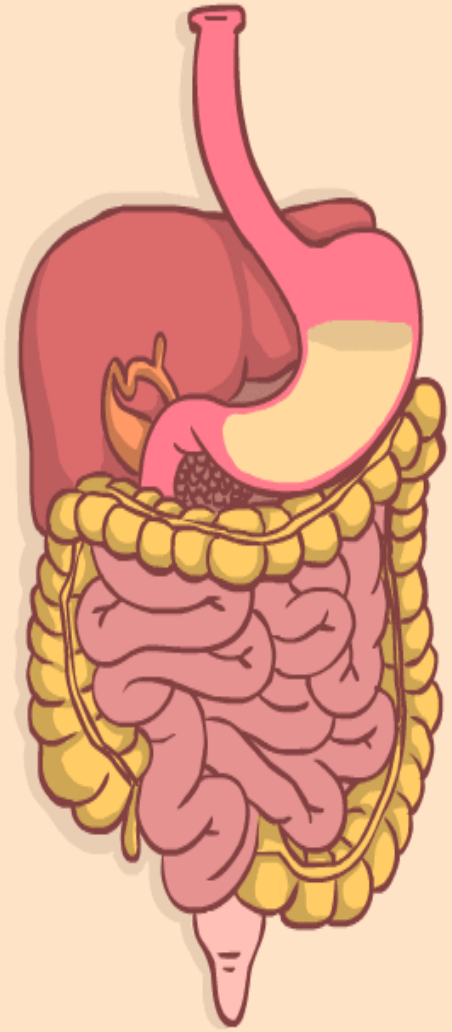
We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Liver & bile

25/09/2025



Bile is produced by the liver and stored in the gallbladder.

Bile can:

1. **Emulsify fats – break down large fat droplet to smaller ones**
2. **Neutralise stomach acid**

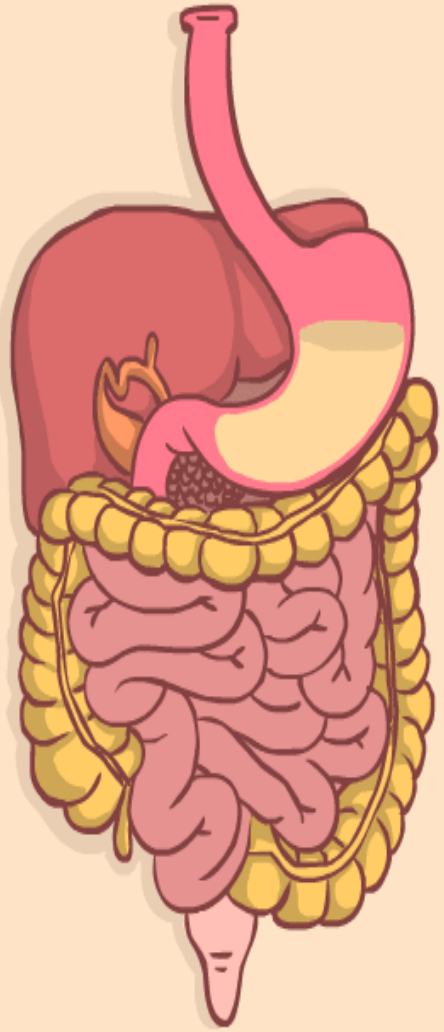
trients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Liver & bile

25/09/2025



1. What organ produces bile?
   Liver
2. Where is bile stored?
   Gallbladder
3. Why is bile useful in the small intestine for enzymes? List two reasons.
   Helps neutralises acidic conditions.
   Provides larger surface area .

trients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

Digestion maze

25/09/2025

How does it work?

It's like pac-man, except your role is to get to the right answer while avoiding the ghosts.

Sometimes there could be more than one answer.

First person to complete the questions wins.

https://wordwall.net/resource/29533204

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.

25/09/2025

Assess time!!!

Complete the Questions and mark them using the mark scheme on Teams.

How did you do!?

We are learning this because absorbing nutrients allows our bodies to function.

Learning Intention: To understand the major components of the digestive system and how they work.

Keywords: cell, tissue, organ, organ system, stomach, intestine, enzyme, digestion, absorption, diffusion.