Science

Animals Including Humans

Digestive System Functions

Aim

- I can explain the functions of the digestive system.
- I can use scientific evidence to answer questions.

Success Criteria

- I can add functions to the parts of the digestive system.
- I can match the parts of the digestive system with their functions.
- I can explain the functions of the digestive system.
- I can use scientific evidence I have been given to answer questions.
- I can distinguish between scientific and non-scientific evidence when answering questions.

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Digestive System - Parts

Label the parts of the digestive system

mouth

pancreas

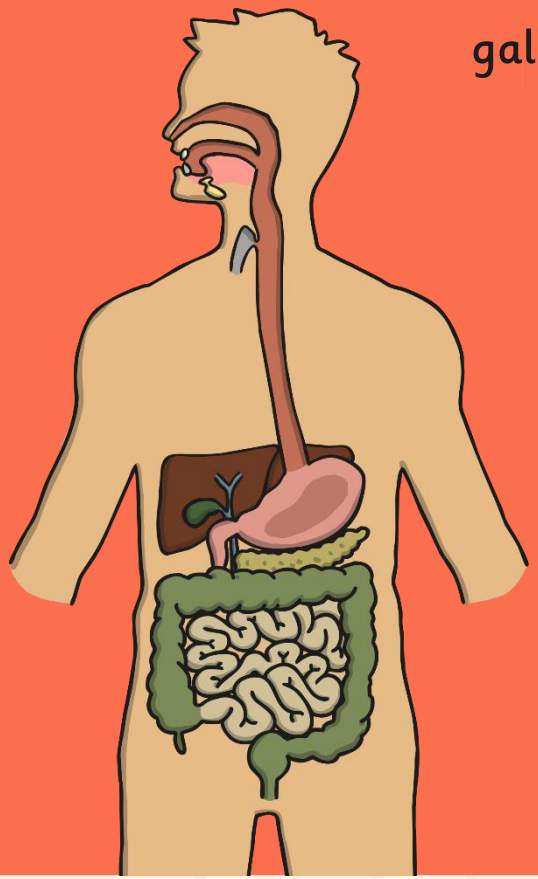
oesophagus

liver

duodenum

anus

salivary glands



gallbladder

teeth

large intestine

stomach

rectum

small intestine

tongue

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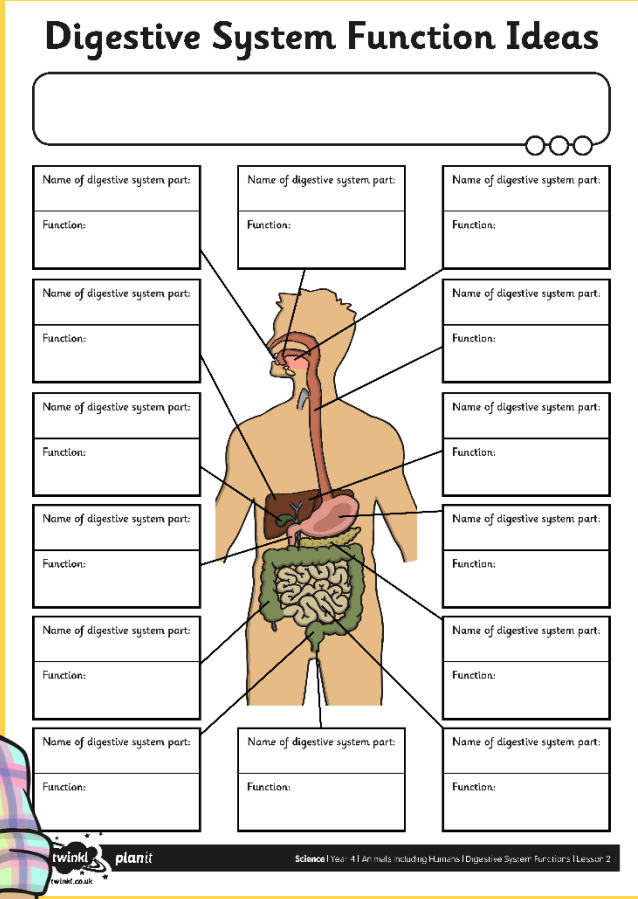
Digestive System - Functions

How do the different parts of the digestive system work?

How do they help humans to digest food?

Discuss with your group and write down ideas next to the part on your sheet.



Digestive System Function Ideas

Name of digestive system part:
Function:

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Glands

You will come across the word **glands** in this lesson so we should find out what they are!

Glands are organs that release fluids to be used in the body.

Tear glands produce tears.

Sweat glands produce sweat.

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Enzymes

Similarly, you will come across the term enzymes.

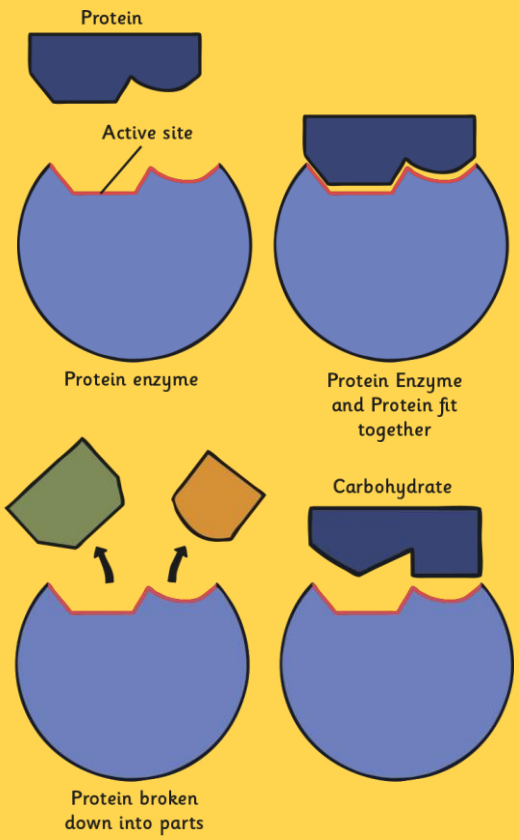
Enzymes are special molecules in the body (molecules make up cells, which make up tissue, glands, organs, etc).

They act to create a chemical reaction.

In the digestive system the reaction they produce breaks down food.

There are lots of **different types of enzymes** as a type of enzyme can only do one thing – so **enzymes** that break down protein can not also break down carbohydrates. You need different enzyme for that!

They are often thought of as a lock – only the right key will fit!



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Salivary Glands

Function:

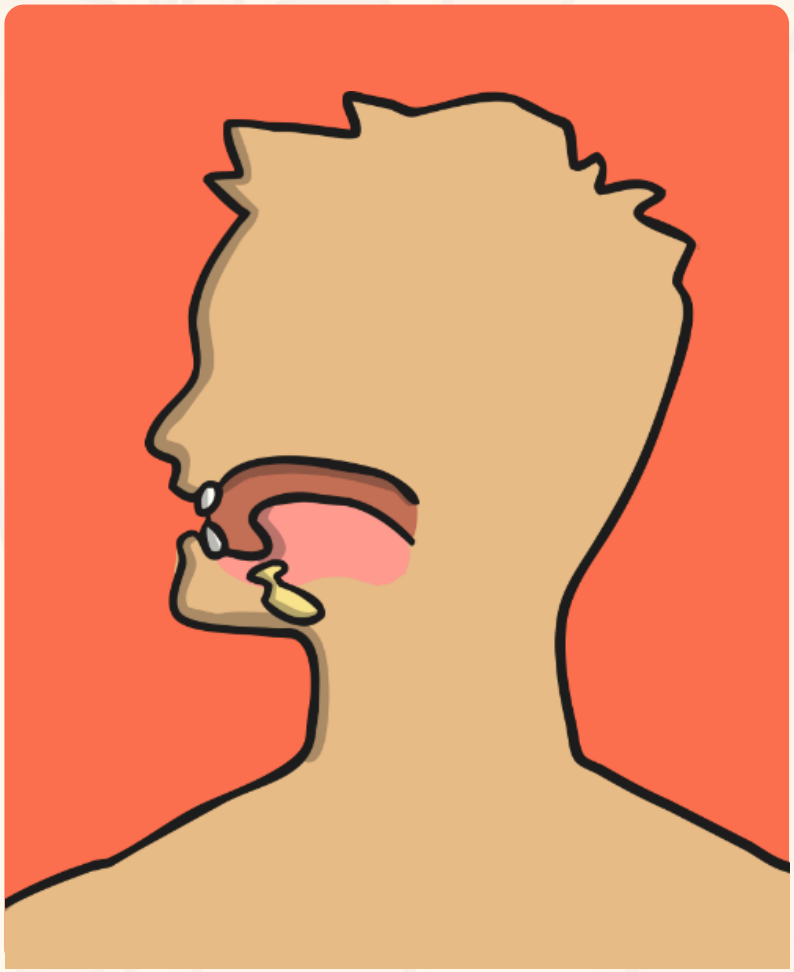
First part of the digestion process starts without you even eating!

The smell of food triggers the salivary glands to produce saliva (some call it your mouth watering).

The amount of saliva increases as you taste the food.

Saliva is mostly made of water and it helps you to chew, taste and swallow food.

Contains enzymes which start to break down the food we eat.



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Mouth

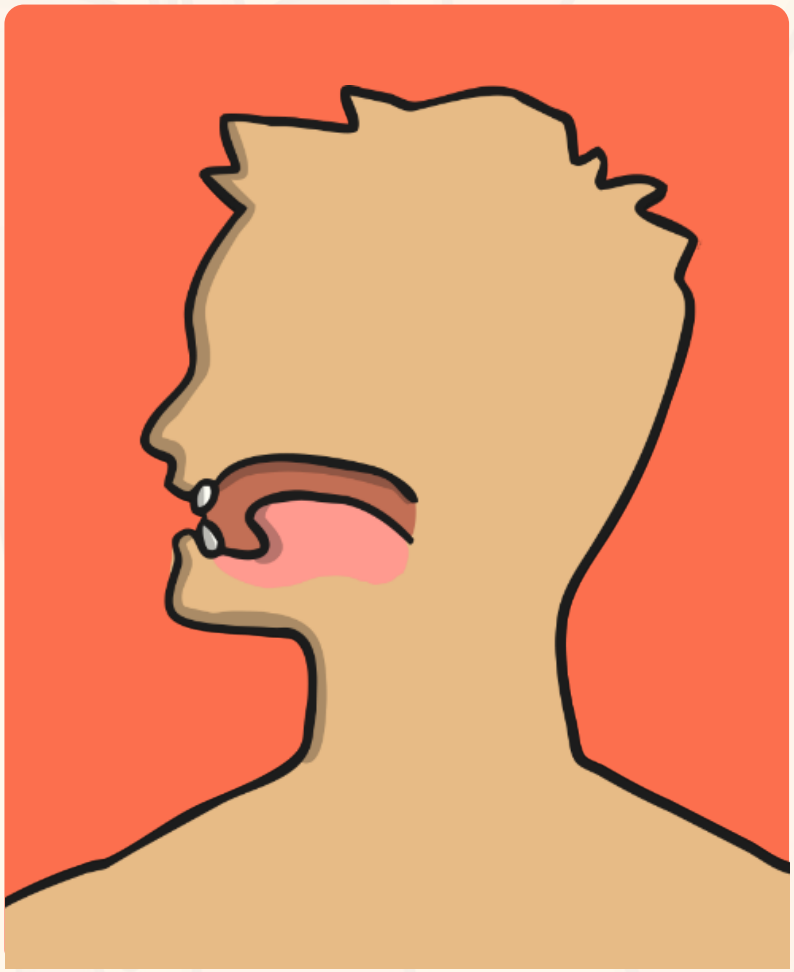
Function:

Entry point for food.

Where saliva mixes with food.

Location of tongue and teeth.

Top part of the mouth (soft palate) helps move food along to the oesophagus.



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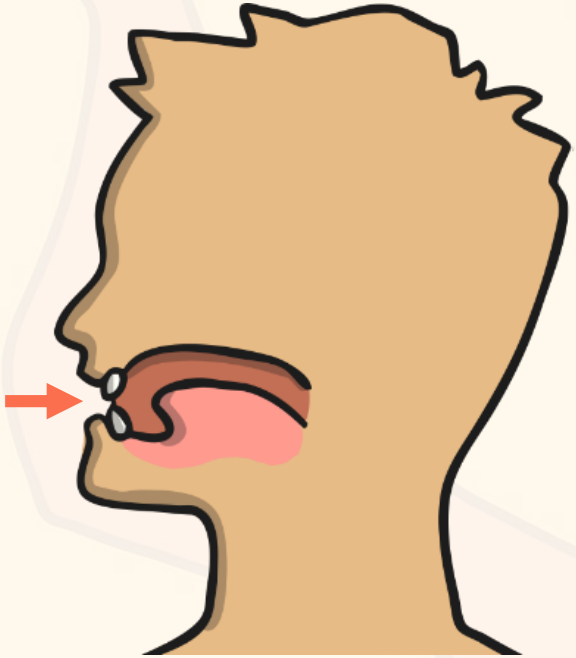
Teeth

Function:

Tear, cut and grind food into smaller pieces.



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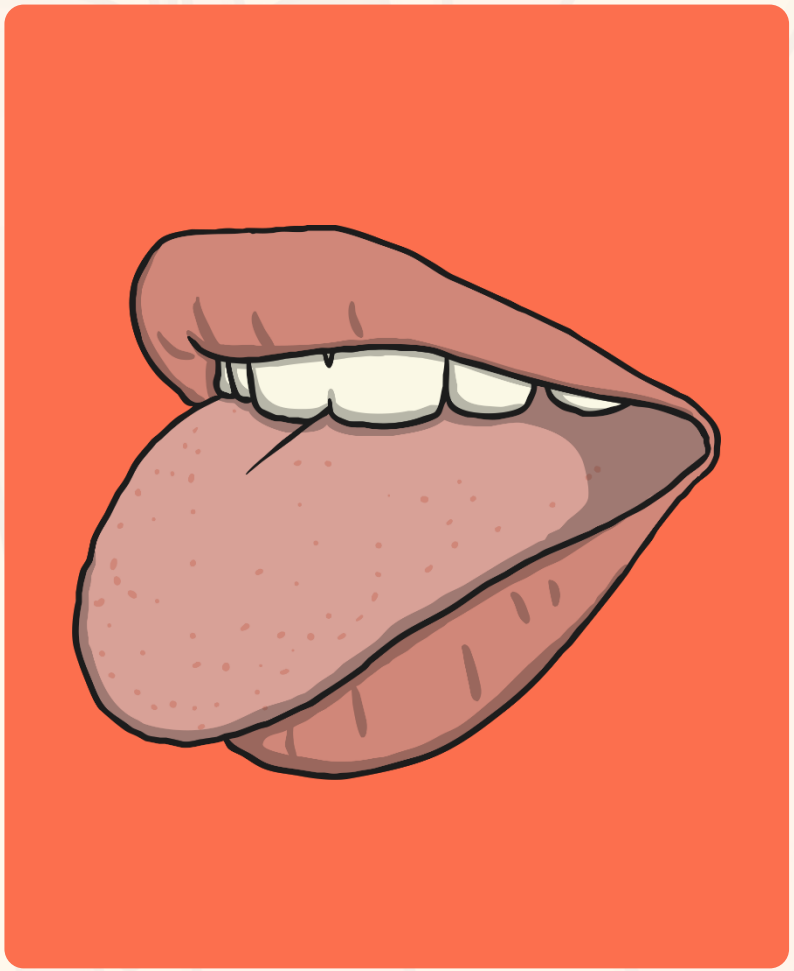
Tongue

Function:

Helps mix the food and saliva.



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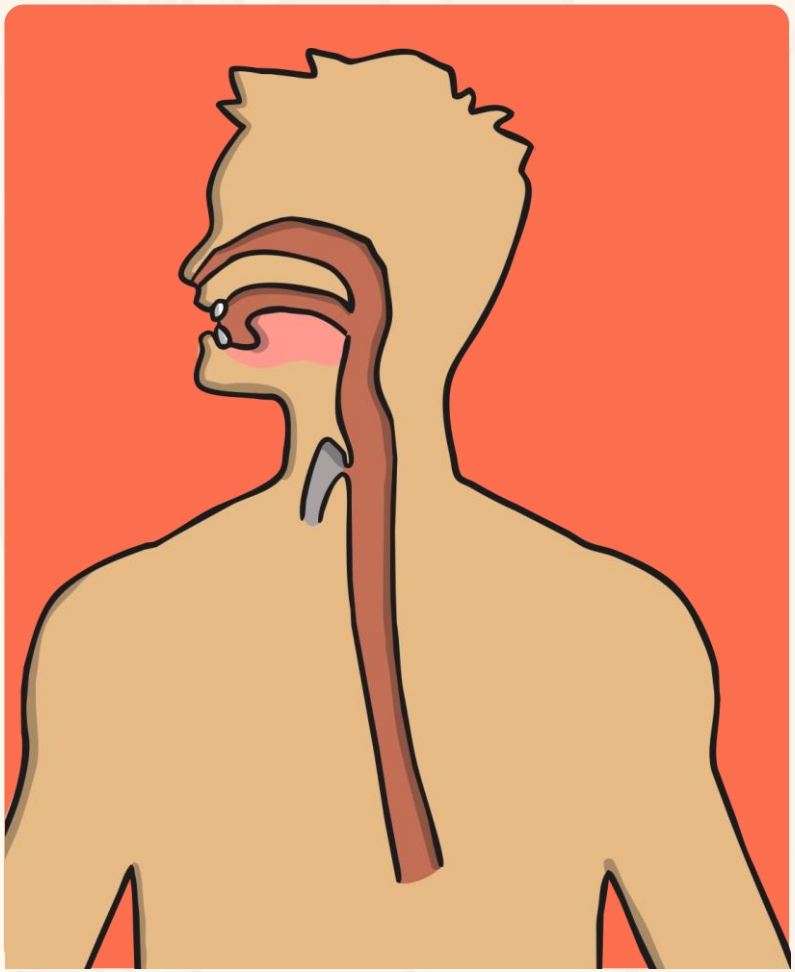
Oesophagus

Function:

A muscular tube which forms the path from the mouth to the stomach.

Muscles contract and relax to move food down the oesophagus to the stomach.



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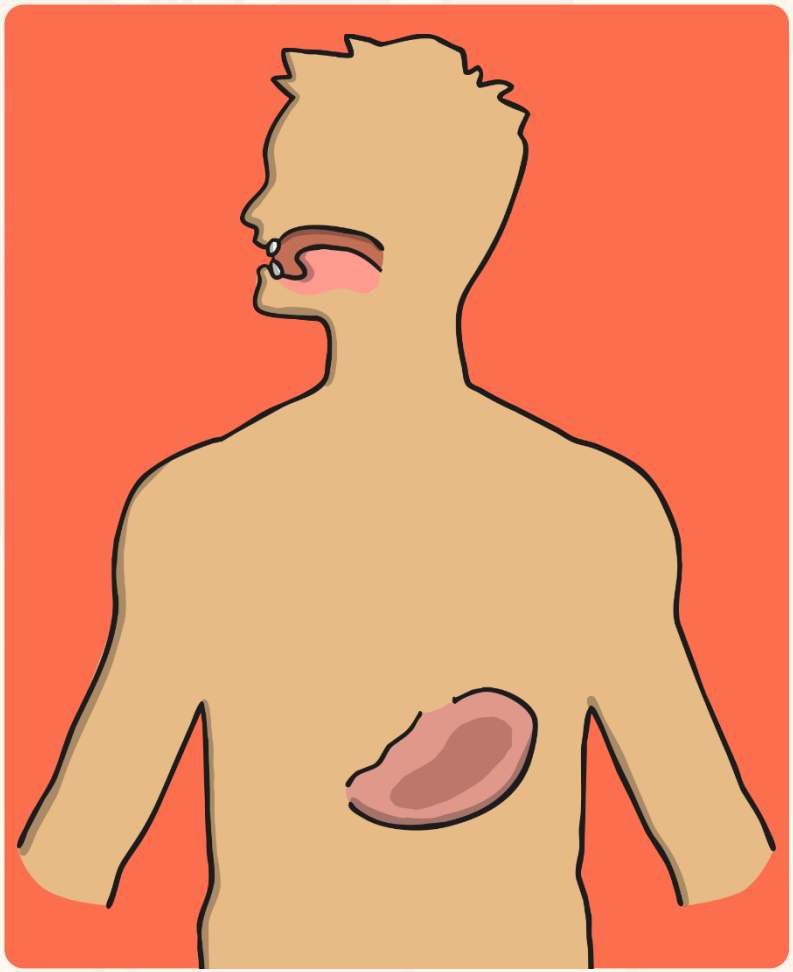
Stomach

Function:

Glands line the stomach produce acid and **enzymes** which breaks the food down further.

Muscles in the stomach mix the food.



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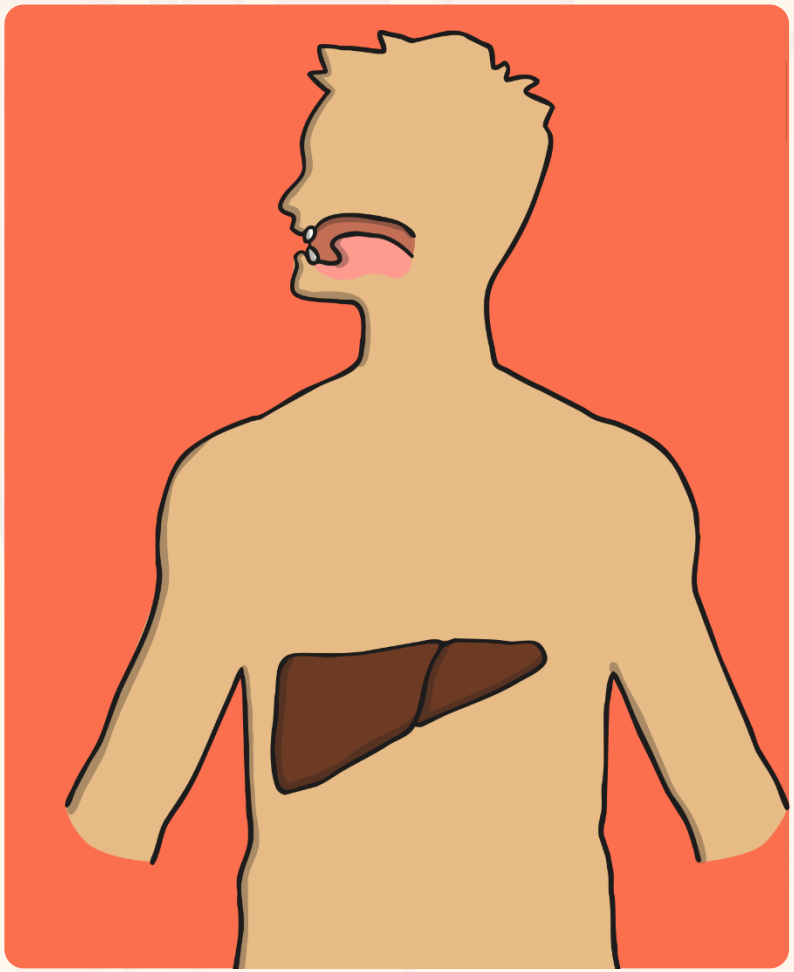
Liver

Function:

Produces bile which helps to absorb fats.

Bile is sent to the gallbladder to be stored.



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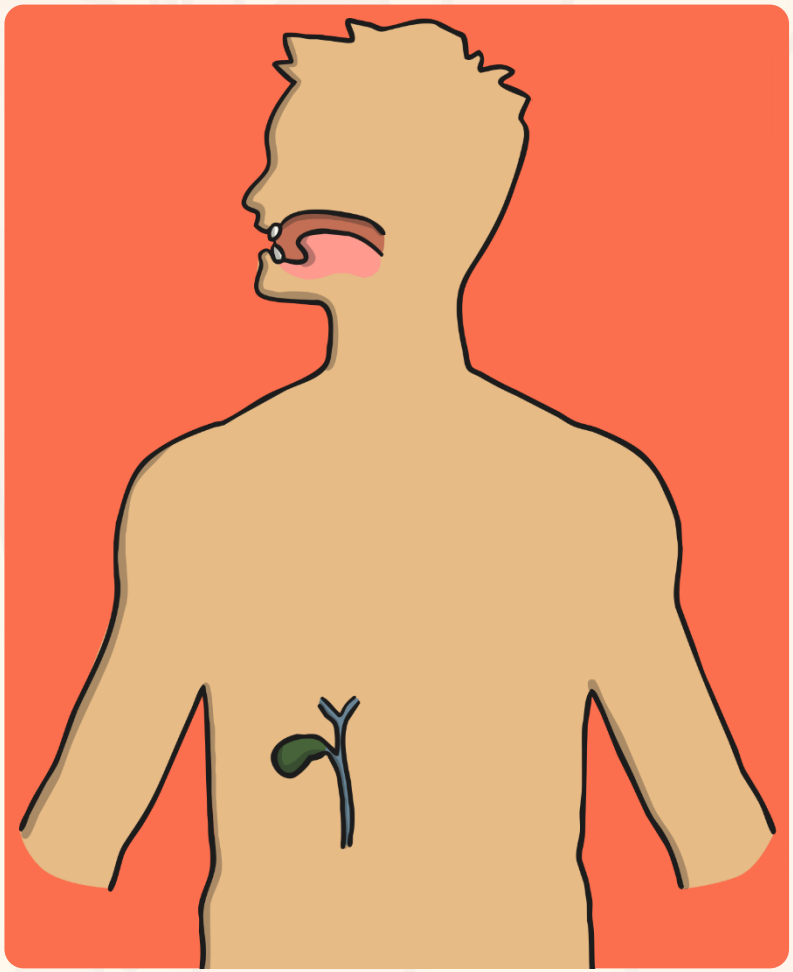
Gallbladder

Function:

Releases bile into the duodenum when needed.



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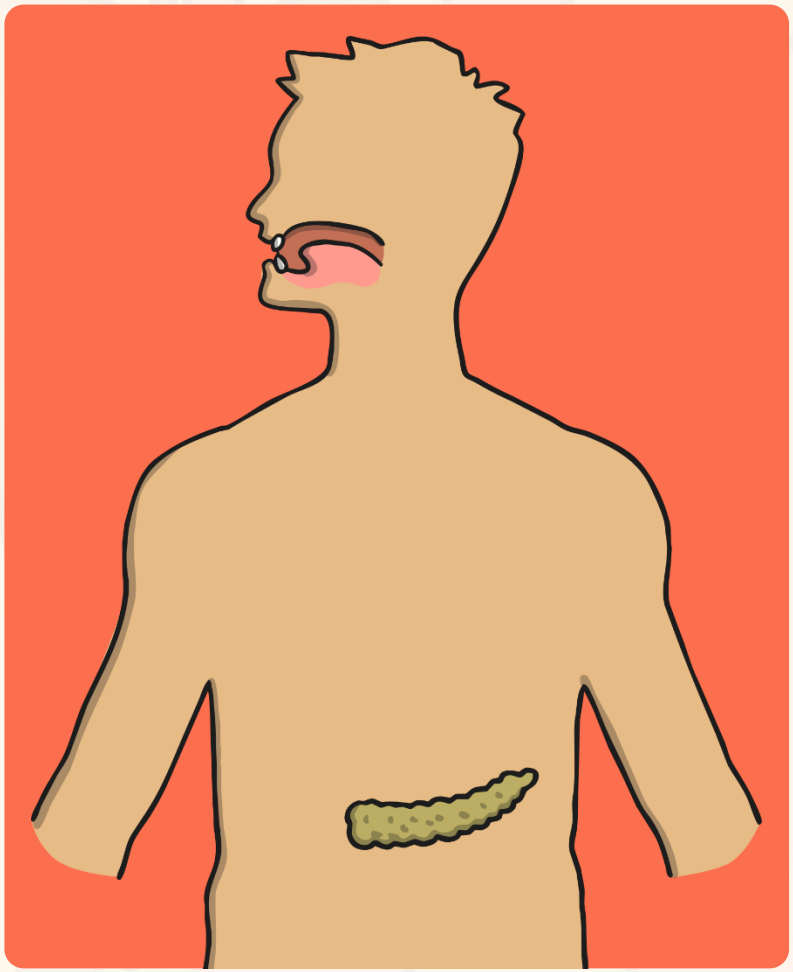
Pancreas

Function:

Produces enzymes to break down fats, proteins and carbohydrates.

Releases them into the duodenum.



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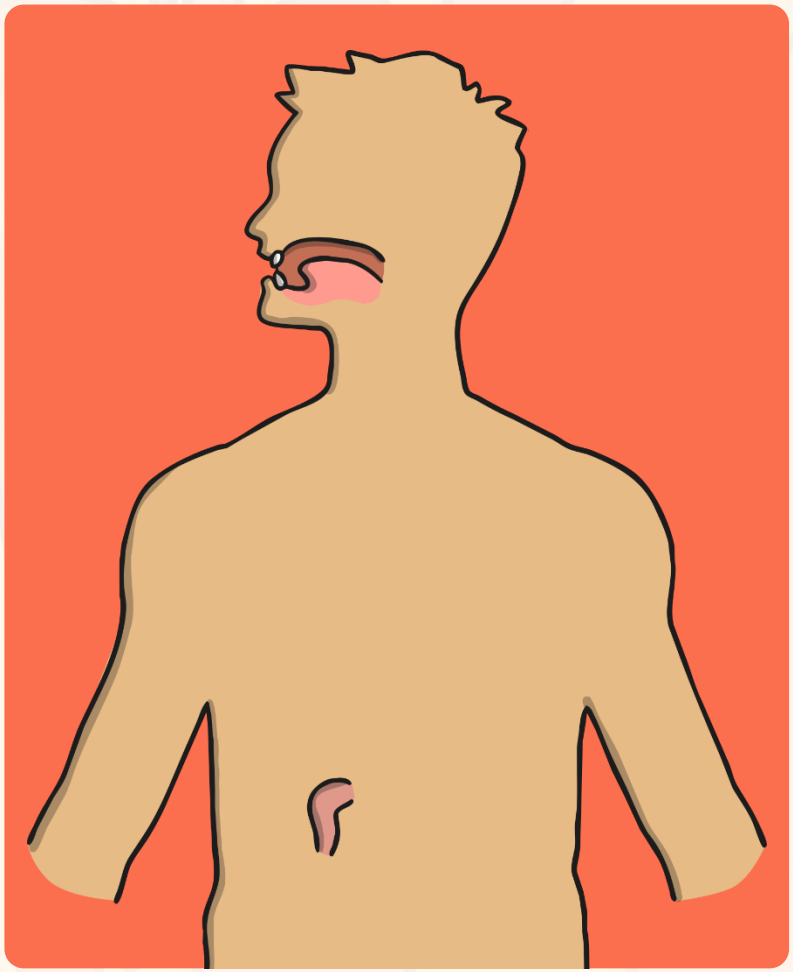
Duodenum

Function:

First part of the small intestine

Food is broken down by bile from the gallbladder and enzymes from the pancreas.



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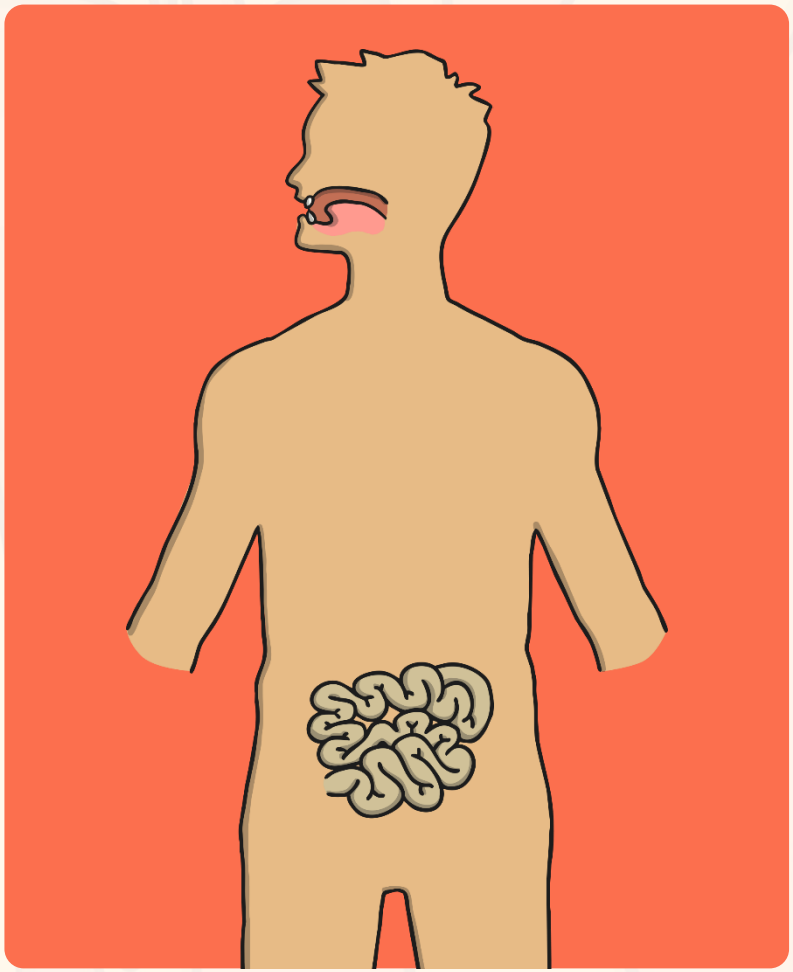
Small Intestine

Function:

The other parts of the small intestine – (jejunum and ileum) absorb nutrients from the food.

Pass any leftover broken down food to the large intestine.



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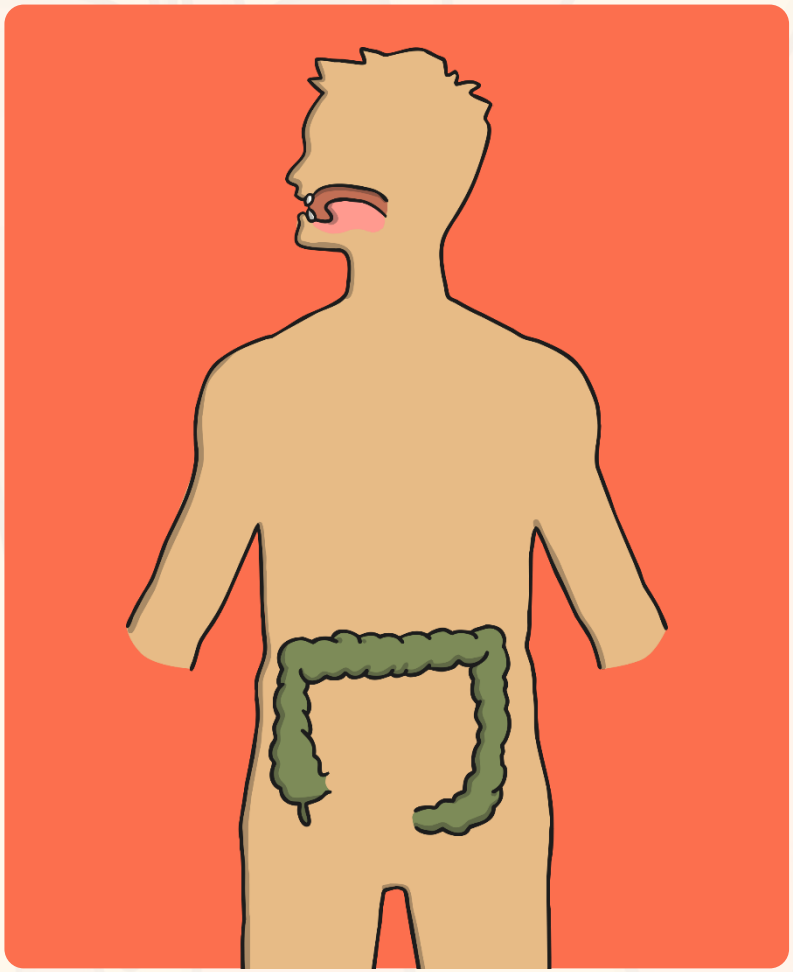
Large Intestine

Function:

Connects the small intestine to the rectum.

Absorbs water from waste food.

Forms stool from waste food.



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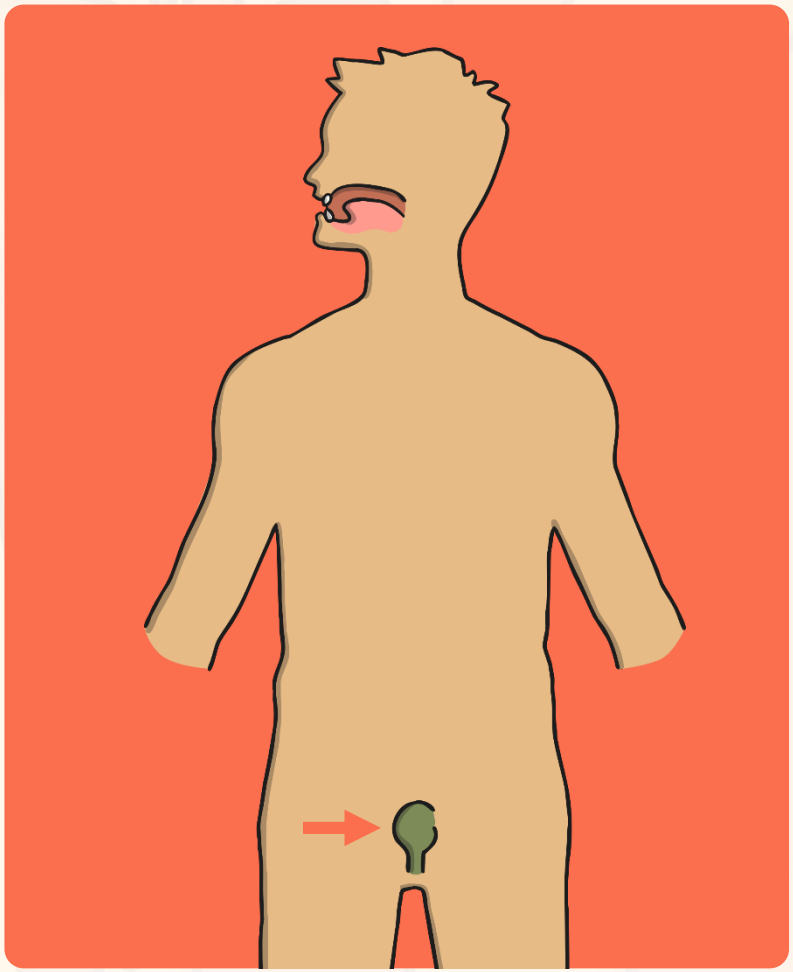
Rectum

Function:

Stores stool passed to it from the large intestine.

Makes brain aware of need to go to the toilet.



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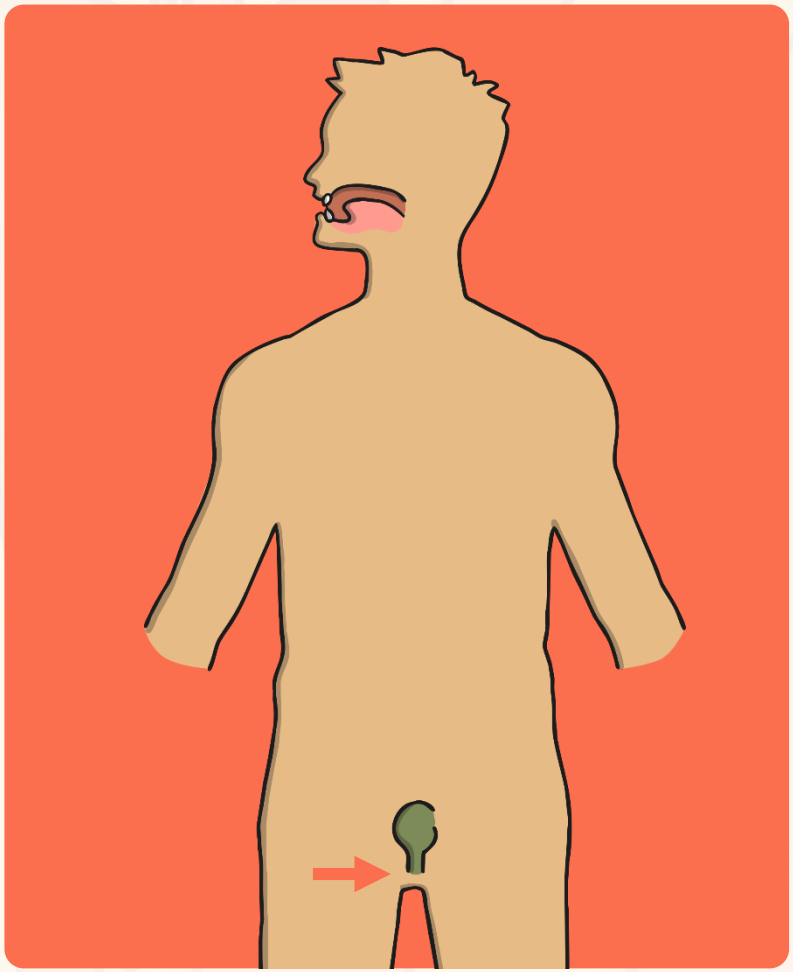
Anus

Function:

Releases the stool.

End of the digestive process.



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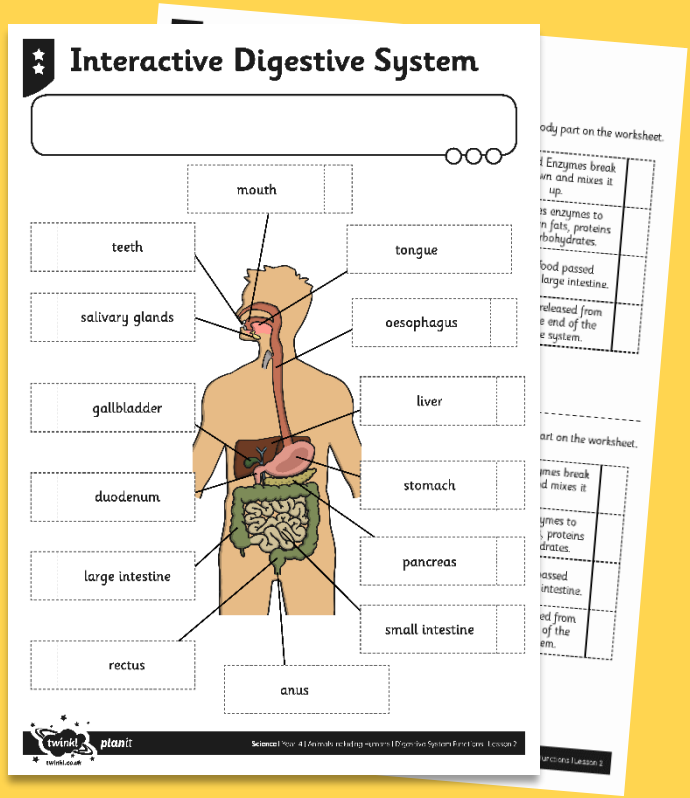
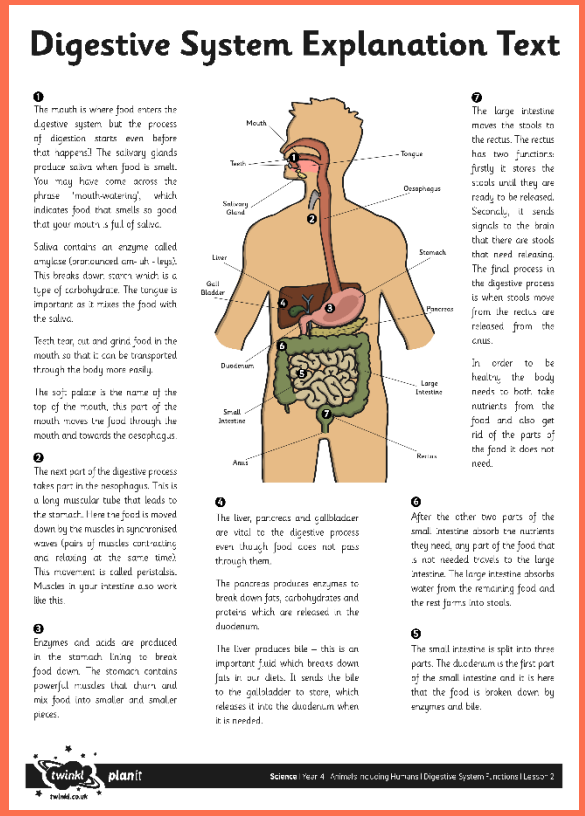
The Functions Of The Digestive System





Digestive System Explanation Text

❶ The mouth is where food enters the digestive system but the process of digestion starts even before that happens! The salivary glands produce saliva when food is smelt. You may have come across the phrase 'mouth-watering', which indicates food that smells so good that your mouth is full of saliva.

Saliva contains an enzyme called amylase (pronounced am-uh-lays). This breaks down starch which is a type of carbohydrate. The tongue is important as it mixes the food with the saliva.

Teeth tear, cut and grind food in the mouth so that it can be transported through the body more easily.

The soft palate is the name of the top of the mouth, this part of the mouth moves the food through the mouth and towards the oesophagus.

❷ The next part of the digestive process takes part in the oesophagus. This is a long muscular tube that leads to the stomach. Here the food is moved down by the muscles in synchronised waves (pairs of muscles contracting and relaxing at the same time). This movement is called peristalsis. Muscles in your intestine also work like this.

❸ Enzymes and acids are produced in the stomach lining to break food down. The stomach contains powerful muscles that churn and mix food into smaller and smaller pieces.

Mouth
Teeth
Tongue
Oesophagus
Salivary Gland
Stomach
Liver
Gall Bladder
Pancreas
Duodenum
Large Intestine
Small Intestine
Anus
Rectum

❹ The liver, pancreas and gallbladder are vital to the digestive process even though food does not pass through them.

The pancreas produces enzymes to break down fats, carbohydrates and proteins which are released in the duodenum.

The liver produces bile – this is an important fluid which breaks down fats in our diets. It sends the bile to the gallbladder to store, which releases it into the duodenum when it is needed.

❺ The small intestine is split into three parts. The duodenum is the first part of the small intestine and it is here that the food is broken down by enzymes and bile.

❻ After the other two parts of the small intestine absorb the nutrients they need, any part of the food that is not needed moves to the large intestine. The large intestine absorbs water from the remaining food and the rest forms into stools.

❼ The large intestine moves the stools to the rectus. The rectus has two functions: firstly it stores the stools until they are ready to be released. Secondly, it sends signals to the brain that there are stools that need releasing. The final process in the digestive process is when stools move from the rectus are released from the anus.

In order to be healthy, the body needs to both take nutrients from the food and also get rid of the parts of the food it does not need.

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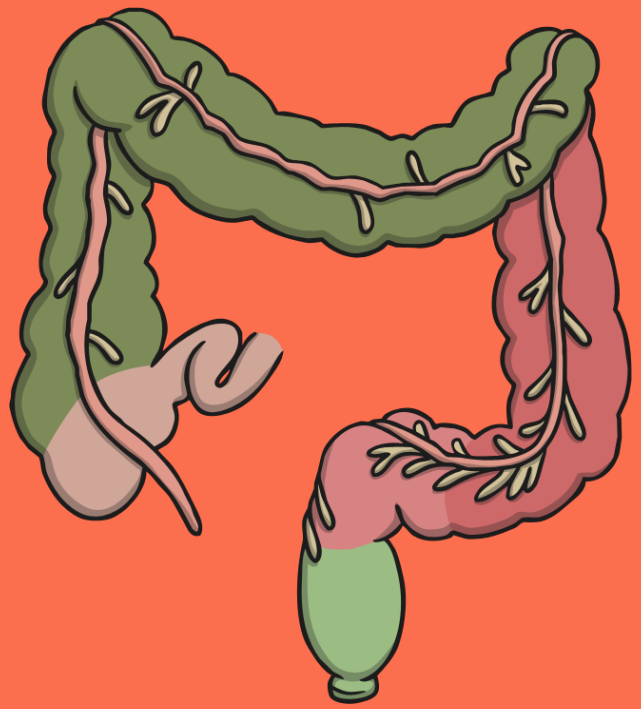
Digestive System Quiz

Whole Class

Click on the answer boxes.



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Digestive System Quiz

Whole Class

? What part of the digestive system tears, cuts and grinds food?

Well done!

stomach

teeth

salivary glands

pancreas

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Digestive System Quiz

Whole Class

?

Which part of the body produces saliva?

Well done!

mouth

gallbladder

salivary glands

liver

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Digestive System Quiz

Whole Class

?

What is the function of the tongue?

Well done!

mixes food with saliva

cuts food

produces saliva

breaks down food

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Digestive System Quiz

Whole Class

?

Which part of the digestive system forms stools?

Well done!

rectum

oesophagus

small intestine

large intestine

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Digestive System Quiz

?

Which is the only part of the digestive system which needs to send a signal to the brain?

Well done!

- rectum
- gallbladder
- pancreas
- anus

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Digestive System Quiz

Whole Class

?

Which of these is the function of the stomach?

Well done!

- produces saliva
- produces bile
- produces acid
- produces stools

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Digestive System Quiz

Whole Class

?

Where is bile stored?

Well done!

stomach

liver

pancreas

gallbladder

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Digestive System Quiz

? How many parts of the small intestine are used to digest food?

Well done!

- two
- one
- three
- none

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Digestive System Quiz

Whole Class

?

Which part moves the food to the stomach?

Well done!

- small intestine
- oesophagus
- large intestine
- mouth

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Digestive System Quiz

Whole Class

?

What do glands do?

Well done!

- break down food
- keep the pancreas healthy
- produce fluids
- send signals to the brain

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Digestive System Quiz

Whole Class

?

How many different parts of the digestive system does food enter?

- eight
- ten
- thirteen
- three

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Digestive System Quiz

Whole Class

?

What are enzymes?

Well done!

cells that break down food

molecules that break down food

glands that break down food

organs that break down food

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Digestive System Quiz

Whole Class

?

What is the name of the top part of the mouth?

Well done!

hard palate

soft pilates

soft palate

hard pilates

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Digestive System Quiz

Whole Class

?

What two substances break down food in the duodenum?

Well done!

acid and enzymes

bile and saliva

acid and bile

enzymes and bile

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Digestive System Quiz

Whole Class

?

The name of the wave movement of the muscles in the oesophagus is called…

Well done!

- periscope
- perisic
- peristalsis
- periodic

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