

Unit 6L.4: Teeth and Eating



- Types of teeth
- Preventing tooth decay
- Dentition of other animals
- Digestive system



By the end of this unit you should:

- Know the structure, function and care of the human teeth.
- Know the human organs and identify them.
- Know the anatomy of the digestive system.
- Understand how the food is absorbed and transported to the cells.

6.9.1, 6.9.2, 6.9.3

Types of teeth

During our lives we have two sets of teeth. The first set of teeth we have as children are called **milk teeth**. There are 20 teeth that fall out as we grow and they are replaced by another set of teeth called permanent teeth, or **adult teeth**.

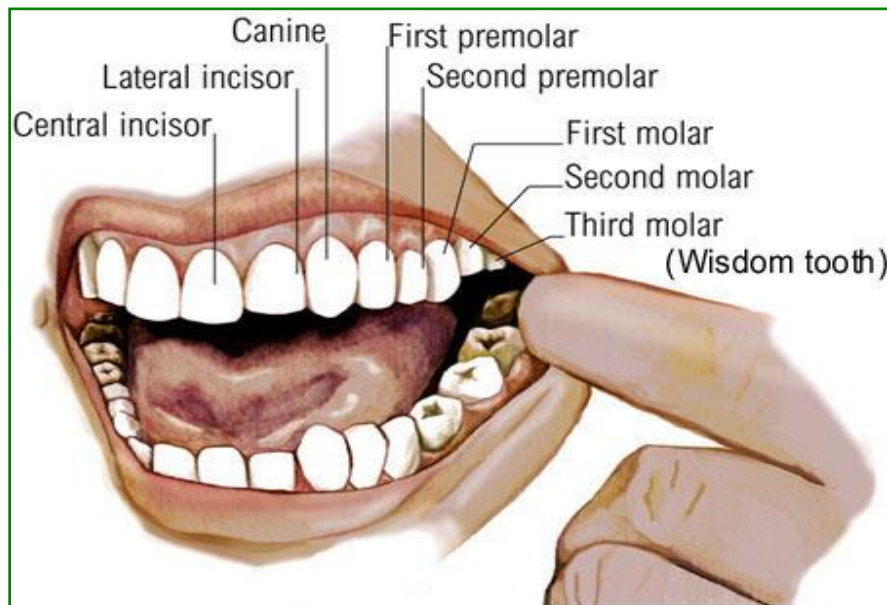


Milk teeth





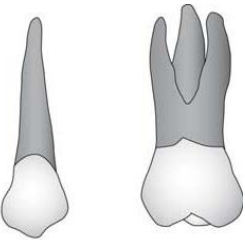
Permanent teeth

Most adults have 32 teeth. The permanent teeth are all different shapes, sizes and have different purposes for processing food.



Types of teeth:

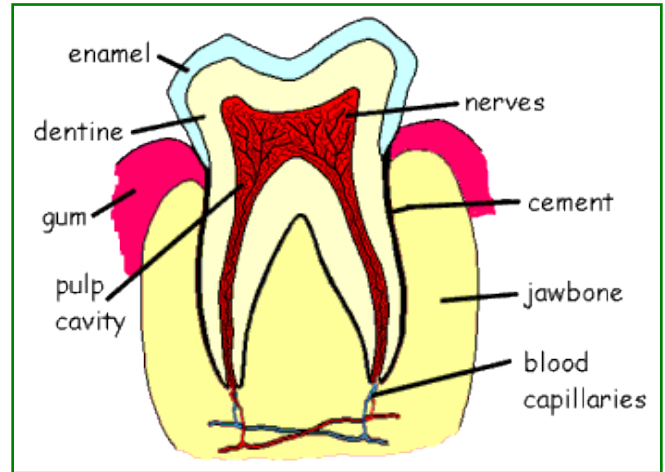
The following table shows the different types of teeth:

Tooth	Function	Shape	Number	Position
Incisors 	Cut and bite food	Straight Sharp	8 (4 in each jaw)	Front of the mouth
Canines 	Hold and tear the food	Sharp , pointed	4 (2 in each jaw)	Between the incisors and the premolars
Premolar and molars 	Crush and grind the food	Large flat with ridges	<u>Premolar</u> 8 (4 in each jaw) <u>Molars:</u> 12 (6 in each jaw)	The back of the mouth

Tooth structure:

The healthy tooth is made of three intact layers:

- **Enamel:** is the hard white outer layer of the tooth.
- **Dentine:** is the second layer of the tooth, and it is made of tiny tubes that conduct the heat and pressure to the inner layer of the tooth.
- **Pulp:** is the inner layer of the tooth. It is a soft layer that has blood vessels and nerves. With this layer the tooth is connected to the circulatory system through the blood vessels and to the nervous system through the nerves.



Activity 1:

You will need:

A small mirror (make sure there are no sharp edges)

Steps: Find a partner and together record the number of teeth for each person in the table below. Compare with the class.

	Milk Teeth	Permanent Teeth		
		Incisors	Canines	Molars
Person 1				
Person 2				
TOTAL				

Key words:

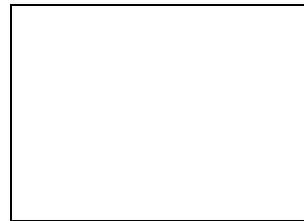
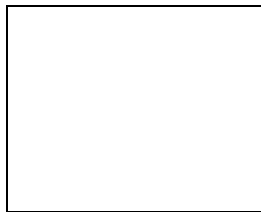
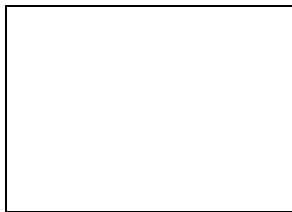
Milk teeth, permanent teeth, incisors, canines, premolars, molars, dentine, enamel and pulp.

Key ideas:

- Humans have two sets of teeth, milk teeth and permanent teeth.
- Adults have 32 teeth. There are three different types: incisors, canines and molars.
- There are three parts of the tooth: enamel, dentine and pulp.

Key questions:

- Draw the three types of permanent teeth.



- Which teeth are responsible for the following processes:
 1. Grinding up food.....
 2. Cutting and tearing food.....
- What is the outside layer of the tooth called?
 What does it do?.....

Preventing tooth decay:

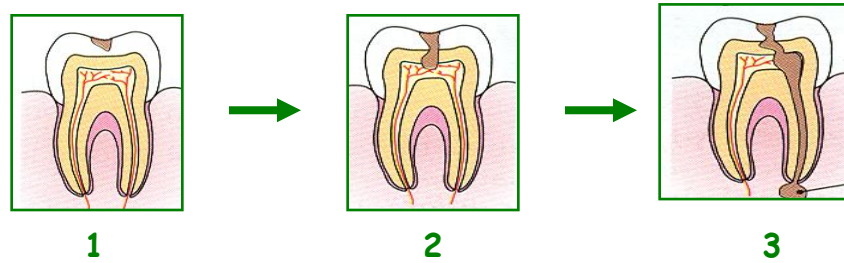
Tooth decay begins when bacteria in our mouth mixes with saliva and forms what is called **plaque**. If the plaque is left on the teeth for a long time it begins to erode the enamel and eventually causes a hole (cavity) in the tooth.

Tooth decay is caused by bacteria in your mouth.

Bacteria and the saliva in our mouths change sugary food to **acid**. The more sweets you eat, the more **acid** is made and, if left, the **acid** eats through the tooth enamel making a **hole**.



Tooth Decay:



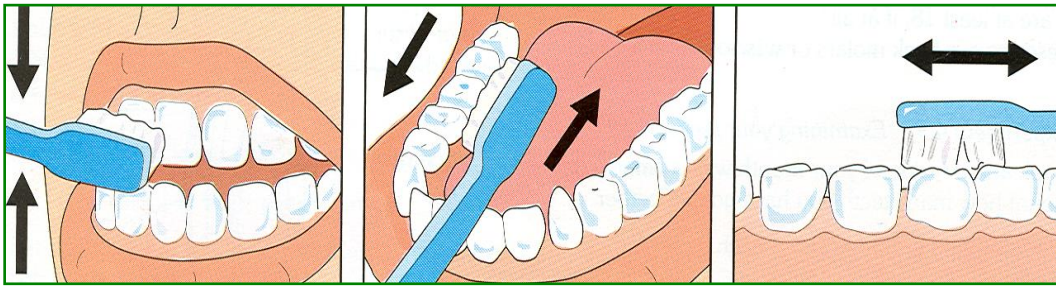
1. Decay begins in enamel - slight pain
2. Decay penetrates dentine and reaches the pulp - severe toothache.
3. Bacteria infect the pulp, it reaches the base of tooth - acute pain.



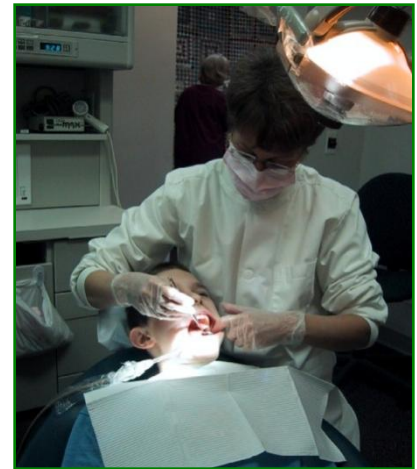
Looking after your teeth (oral hygiene):

- Clean your teeth at least twice a day using:
 - A tooth brush (to remove the plaque).
 - Tooth paste to remove the acid formed by bacteria.





- Brush your teeth in the correct way shown above.
- Visit your dentist regularly, every 6 months. The dentist will clean and remove any plaque and give advice on how you can keep your teeth healthy and maintain your oral hygiene.



- Avoid sugary food and drinks between meals.



- Drink plenty of water during the day, this helps to neutralise the acid in the mouth

Activity 2: What affect do drinks have on our teeth?

You will need the following:

Hard-boiled egg shells, cups, sweet soda drink, fruit juice and water.

Steps:

1-Predict (P) What do you predict will happen to each egg shell when you leave it in the 3 different drink types for 1 week?

Drink 1 (soda).....
.....
.....

Drink 2 (fruit juice).....
.....
.....

Drink 3 (water).....
.....
.....

2. Fill 3 cups half full; 1 with sweet soda, 1 with fruit juice and 1 with water.

3. Place a piece of hardboiled egg shell into each cup and place somewhere safe and leave for one week.

4. After one week carefully pour out the drinks and set aside the egg shells. Record your Observations (O) in the table below. Use pictures and colour to show the results.

	Drink	Observation
1-	Sweet Soda	
2-	Fruit Juice	
3-	Water	

Explain (E): What happened to the egg shells? How might this be similar to our teeth?

.....

.....

.....

.....

.....

.....

Activity 3: Making toothpaste**You will need the following:**

Crushed hardboiled egg shell (calcium carbonate), sodium bicarbonate, water, commercial tooth paste, 2 toothbrushes and permanent marker.

**Steps:**

1. Mix 1 teaspoon of crushed eggs shells and 1 teaspoon of sodium bicarbonate with a little water to make a paste. This is your own toothpaste, give it a brand name and label it.
2. Find a tile to mark 2 marks with the permanent marker. Apply some of your new toothpaste to one toothbrush and some commercial toothpaste to the other. Compare how the two toothpastes perform in removing the permanent marker from the tile. *Remember the fair test method.

	Type of Toothpaste	Observation
1-		
2-		

Key words:

Plaque, tooth decay, oral hygiene, cavity, dentist.

Field trip:

Visit a dentist to find out about what they do.

Key Ideas:

- Bacteria in your mouth and saliva forms plaque on our teeth.
- Bacteria turn the sugar from your food into acids. The acid if left on your teeth starts to decay the enamel.
- You can prevent tooth decay by keeping a good oral hygiene.

Key Questions:

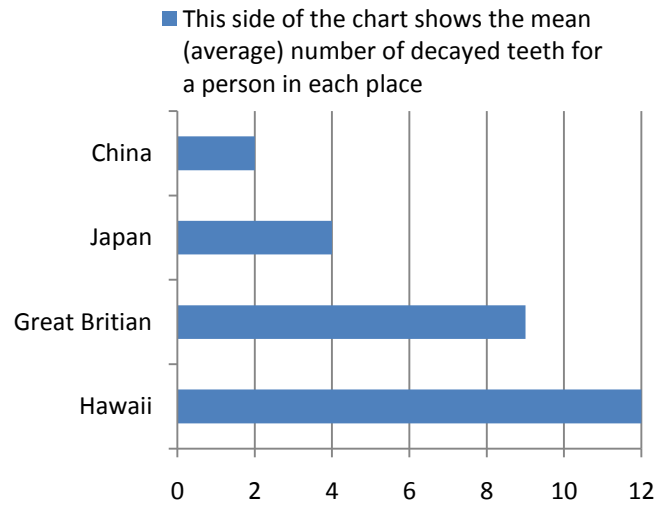
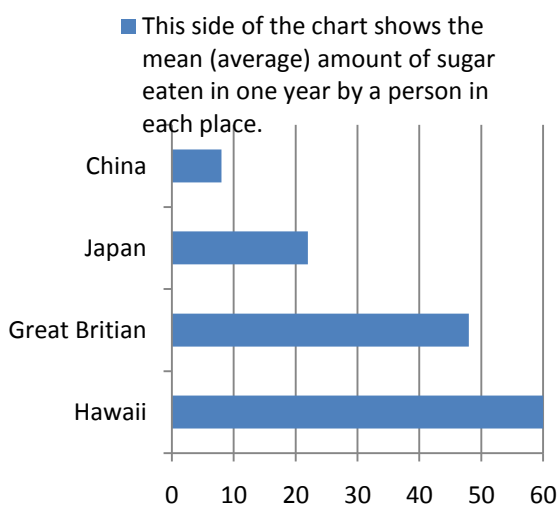
List two ways to protect your teeth from tooth decay.

1.----- 2.-----

Use the information in the chart below to answer these questions:

1. Which place has the least tooth decay?.....
2. What evidence is there in the chart that eating sugar causes tooth decay?

.....



Dentition of other animals

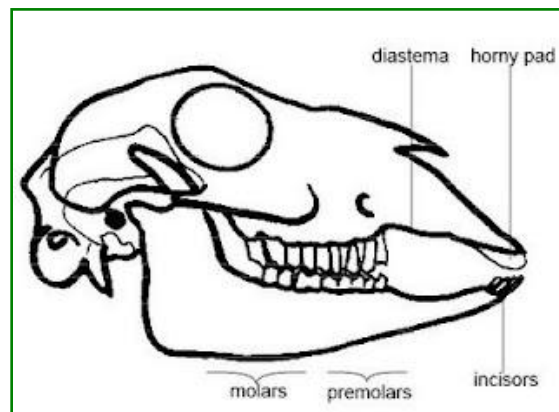
Animals differ according to their feeding habits. Look at the following animals, what are some of the foods they eat?



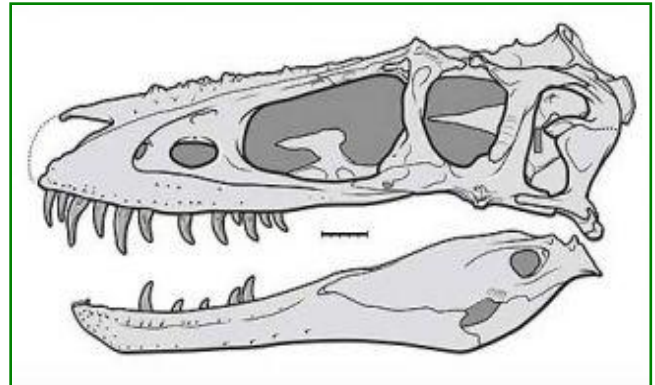
Some animals eat other animals (**carnivores**), like a cat and shark. Other animals eat plants (**herbivores**), like rabbits, and sheep. Some animals eat both plants and animals (**omnivores**), like bears.

When you compare the skulls of these animals you will notice that they have different teeth:

- **Herbivores**, animals that eat plants have more incisors to cut the food and molars and pre-molars to crush and grind the food.



- **Carnivores**, animals that eat, meat have more canines to tear the meat.

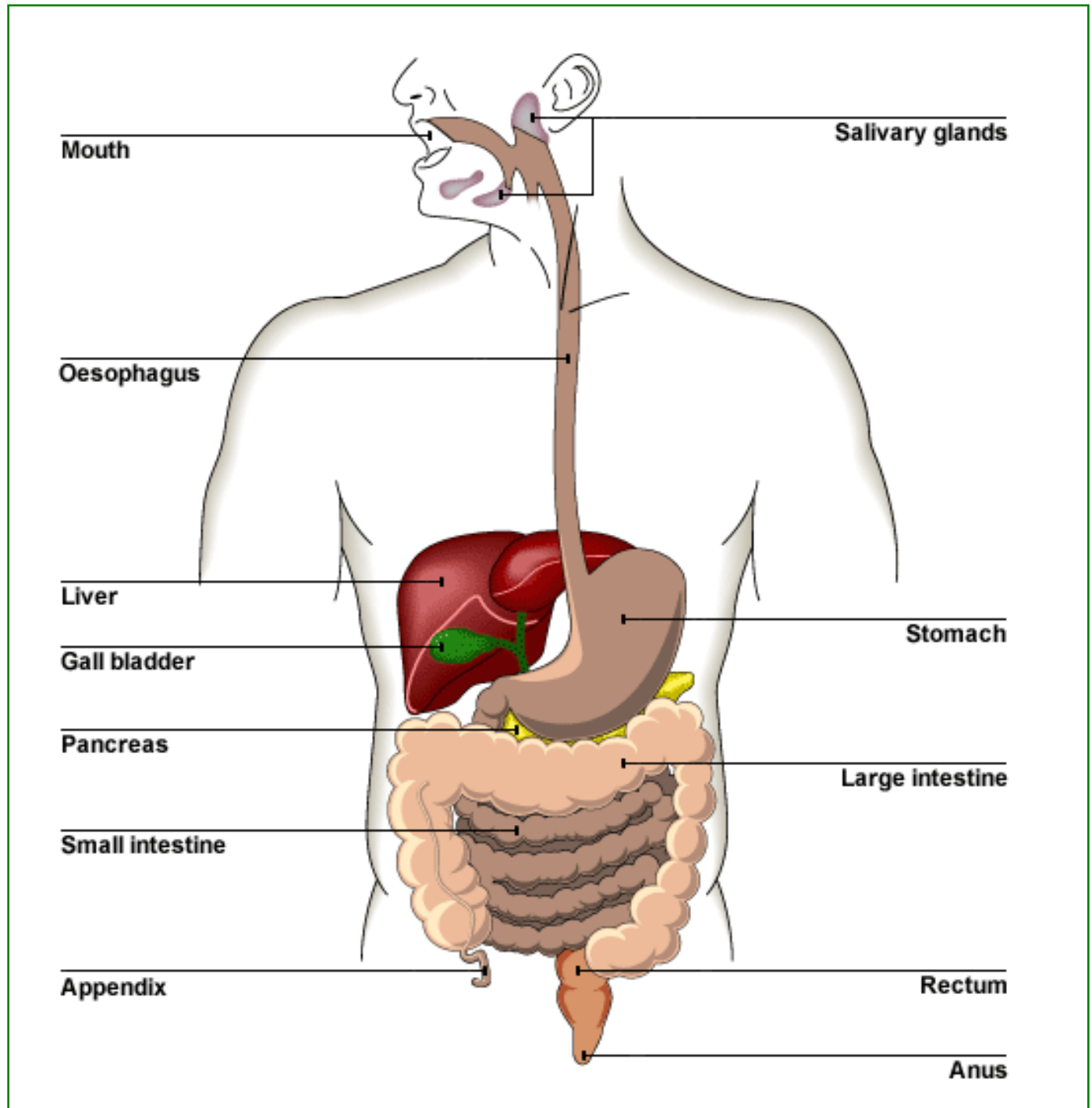


- **Omnivores**, animals that eat both plants and animals have both canines and incisors and molars.

- **Humans** are omnivores they eat plants and animals. They have incisors, canines and molars to tear, cut and grind their food.



Digestive System



Anatomy of digestive system

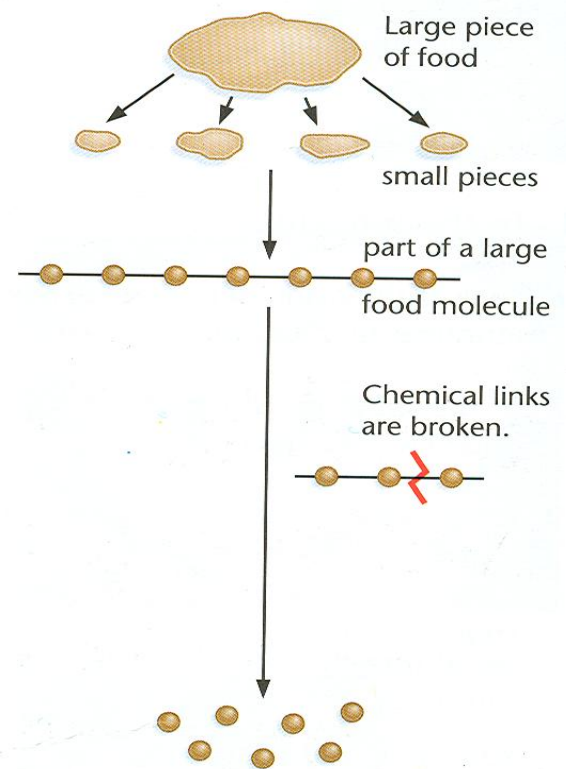
We need the **food** for energy, to stay healthy and for our body to grow and repair.

In the **food** we eat, we can find **carbohydrates, fats, protein** and most importantly **water**. **Food** particles we eat needs to be **broken down** until they are **small** enough to **pass** into the body's **cells**.

Food processing happens in two ways:

1. **Physically**; teeth and muscles in the stomach.
2. **Chemically**; enzymes and acids produced by the digestive system.

The process of breaking down food so it can be **absorbed** is called **digestion**.



Digestion is the breaking down of large food particles into small molecules so that they can be absorbed by cells in the blood.

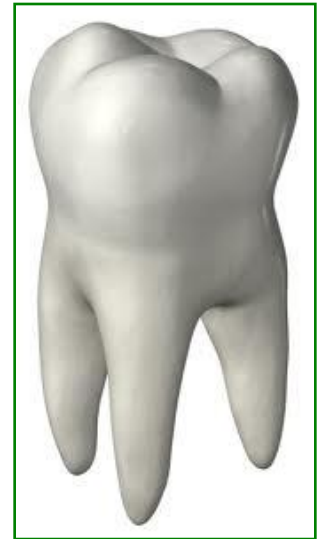
Where does the food go after we eat it?

The digestive system is made of a long tube of organs connected to each other called the gut. Digestion starts with the **mouth** and ends with the **anus**.

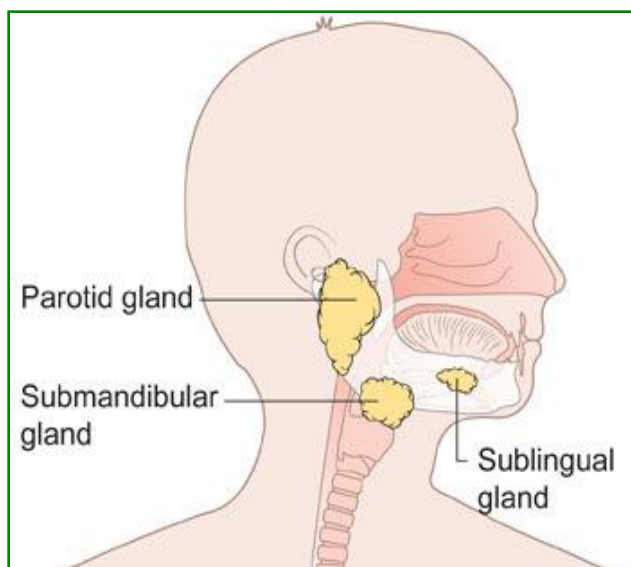
1. The Mouth

a. Teeth:

Our teeth are not just there to give us a nice smile; they have a very important role in **digestion**. By chewing the food, we break it down into smaller pieces that can be swallowed.



Teeth break down food into smaller pieces that we can swallow.



b. Salivary glands:

Once the food enters the mouth, it is mixed with saliva. Saliva is a digestive juice that is produced by the salivary glands. It helps to moisten and break down the food so it is easier to swallow.

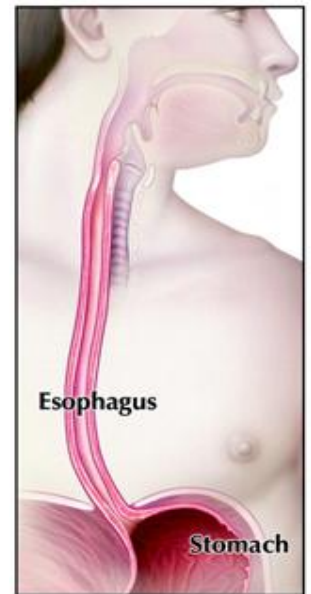
c. Tongue:

The tongue is a muscular organ that mixes the food with the saliva in the mouth and helps in the swallowing of food.

Swallowing happens without you thinking about it.

2. Oesophagus:

The oesophagus is a muscular tube. Its job is to pass the food from the mouth to the stomach.

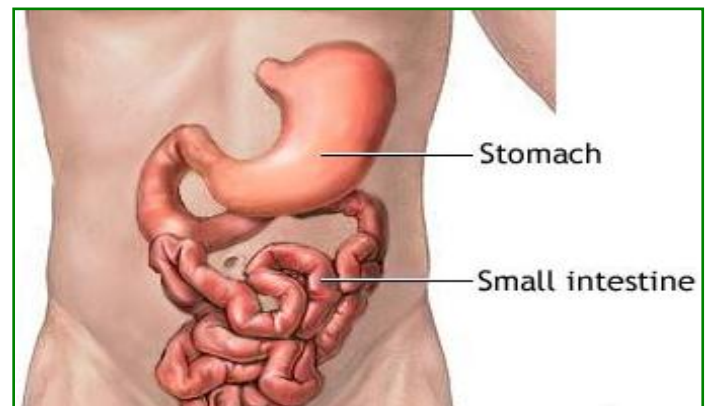


3. Stomach:

When the food particles reach the stomach;

- a. The stomach makes digestive juices.
- b. The muscular wall of the stomach mixes the food with the digestive juices.

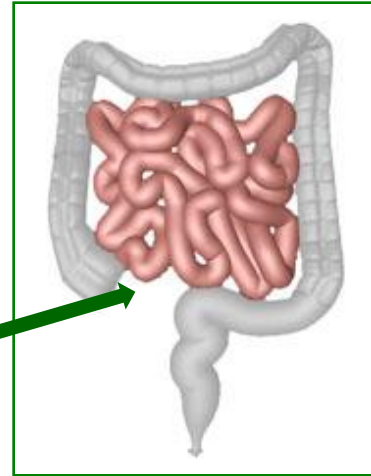
After around 2-4 hours the food has turned to a liquid. It is then passed slowly to the small intestine.



4. Small Intestine:

The small intestine is approximately 6 meters long. In the small intestines three important enzymes are added:

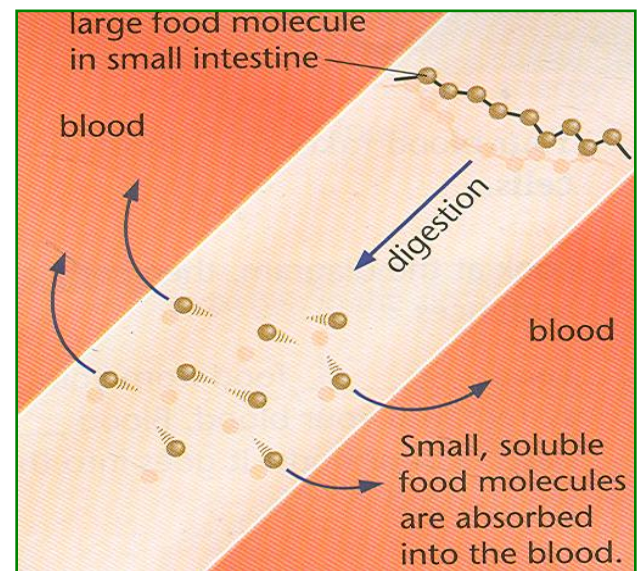
- Enzymes called bile from the **liver**, excreted by the **gall bladder**.
- Enzymes from the **pancreas**.
- Enzymes from the wall of the **small intestine**



All these enzymes complete the digestion of food into small molecules ready for absorption by the blood.

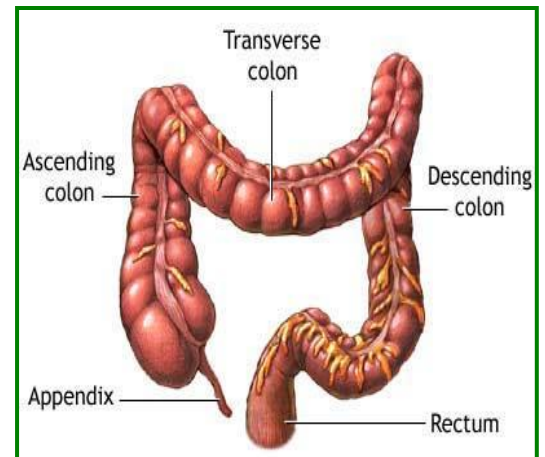
Absorption of food:

In addition to digestion; the small intestine has another important job. **Digested food passes** through the wall of the **small intestine** to the **blood** so that it can be **transported to the cells**.



5. Large Intestine:

All the nutrients from the **food** have been used by the body by the time it reaches the **large intestine**. In the large intestine the last of any water is **absorbed** into the blood. Any remaining solid waste slowly moves to the **anus (rectum)** where it is excreted from the body.



Key words:

Mouth, teeth, tongue, salivary glands, oesophagus, stomach, small and large intestine, bile, pancreas, liver, gall bladder, anus.

Project:

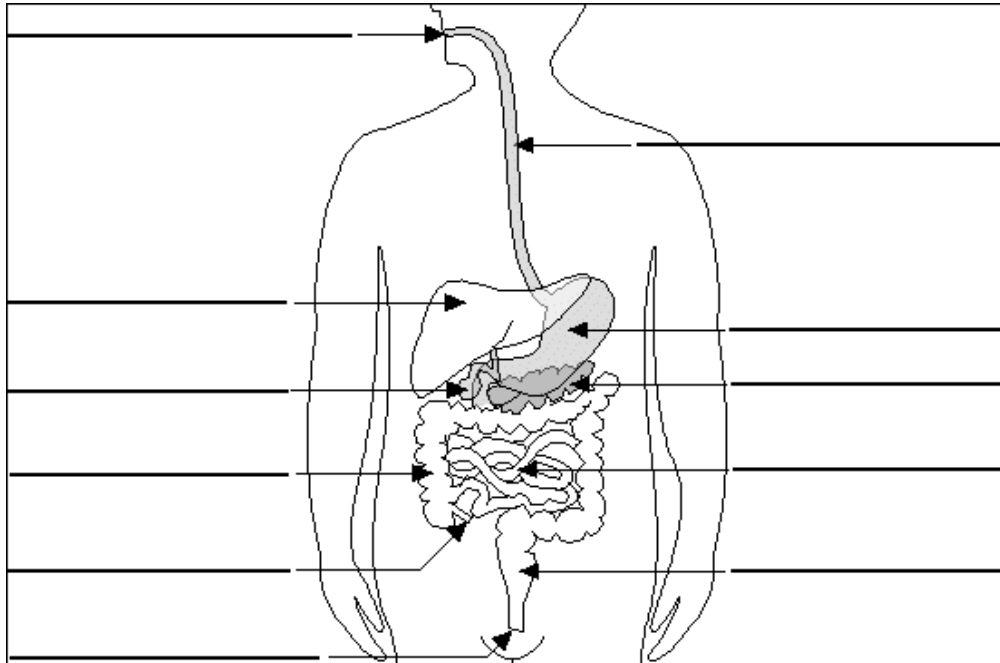
Make a model of a digestive system with the major organs. Use a range of craft items i.e. balloons, string

Key Ideas:

- Digestion is breaking down large food particles into small molecules so that they can be absorbed by the blood.
- The human digestive system is made of organs that are connected together.
- The main parts of the digestive system including; mouth, tongue, oesophagus, stomach, small and large intestine, salivary glands, pancreas, liver, gall bladder and anus.

Key Questions:

1. Label the parts of the digestive system below;



2. Choose four organs of the digestive system and write their functions in the table below;

	Digestive Organ	FUNCTION
1	ie. Tongue	Mixes food with saliva so it can be swallowed
2		
3		
4		