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**Importance of Water and Fibre**

Water and fibre are not nutrients that give us energy, but they are still very important for keeping the body healthy. **Water** makes up most of the body and is needed for transporting nutrients, keeping the blood flowing, controlling body temperature, and removing wastes. Without enough water, a person can become **dehydrated**, which causes headaches, tiredness, and dizziness. It is important to drink water every day. Good sources of water include **drinking water**, **juices**, **soups**, and water found in **fruits and vegetables**.

**Fibre**, also called roughage, is the part of plant food that the body cannot digest. Even though it is not digested, fibre helps to keep food moving through the intestines and prevents **constipation**. Fibre also helps to keep the digestive system healthy. Good sources of fibre include **whole grains**, **fruits**, **vegetables**, **peas**, and **beans**.
Both water and fibre help the body stay healthy by supporting digestion, preventing illness, and helping waste move out of the body properly.

## Student's Work

Read the information above on the **Importance of Water and Fibre** and answer thr questions below.

1. **Multiple Choice**: Circle the letter of the correct answers below.

1. Dehydration happens when the body does not have enough:
A) Fibre
B) Fat
C) Water
D) Protein

2. Fibre is mainly found in:
A) Meat
B) Plant foods
C) Cheese
D) Eggs

3. A good source of water is:
A) Soup
B) Bread
C) Butter
D) Oil

4. Fibre helps to prevent:
A) Fever
B) Diabetes
C) Dehydration
D) Constipation



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**2. Fill in the Blanks.** Use the words in the box below to complete the sentences.

| | | | | |
|---|---|---|---|---|
| **blood** | **constipation** | **dehydrated** | **digest** | **fibre** |
| **roughage** | **soups** | **temperature** | **wastes** | **water** |

a. Water helps the body remove _____.

b. Without enough water, a person can become _____.

c. Good sources of water include juices and _____.

d. Fibre is also called _____.

e. Fibre helps to prevent _____.

f. Whole grains and vegetables are good sources of _____.

g. Water helps to keep the _____ flowing.

h. Fibre is the part of plant food that the body cannot _____.

i. Water helps control the body's _____.

j. Fruits and vegetables contain _____ as well as vitamins.

**3. True and False.** Write TRUE if the statement is true and FALSE if it is false.

a. Fibre gives the body energy. _____

b. Water helps transport nutrients around the body. _____

c. Fibre helps food move through the intestines. _____



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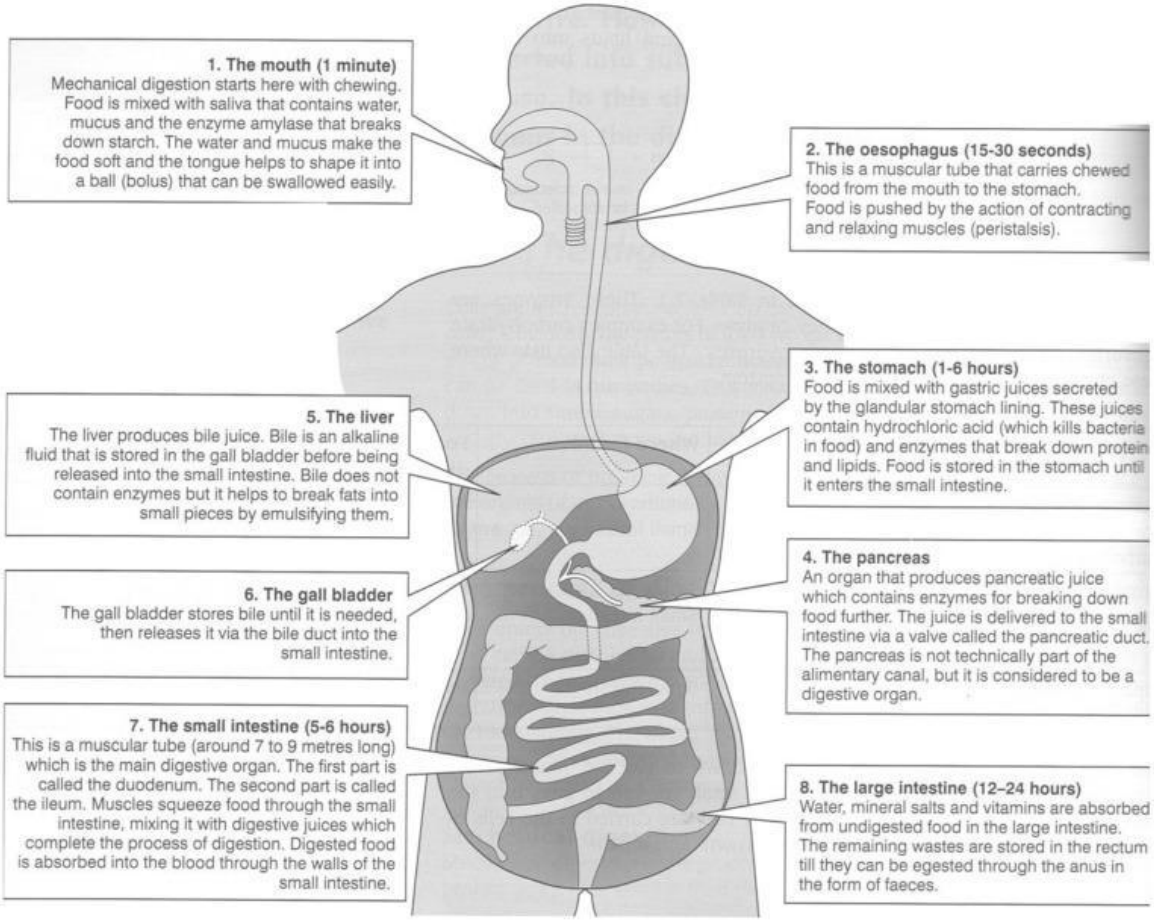
**Digestive System and the Alimentary Canal**

The alimentary canal differs from the digestive system in that whereas the digestive system takes into account all the organs that are required to break down our food, the alimentary canal is the 8 to 9 metre long tube that starts at the mouth and ends at the anus.

Let is look at the organs that help to make use of our food.



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## Student's Work

**Read page 16 and answer the questions below.**

**1. Multiple Choice**: Circle the letter of the correct answers below.

1. Which organ produces bile?
a) Stomach
b) Pancreas
c) Liver
d) Gall bladder

2. Which part of the digestive system uses **peristalsis** to push food toward the stomach?
a) Mouth
b) Oesophagus
c) Large intestine
d) Pancreas

3. Where is most digested food **absorbed into the bloodstream**?
a) Small intestines
b) Large intestine
c) Stomach
d) Mouth

4. What is the main function of the large intestine?
a) Stores bile
b) Produce bile
c) Mix food with enzymes
d) Absorb water and minerals

**2. Fill in the blanks.** Use the words in the box below to complete the sentences.

| | | | | |
|---|---|---|---|---|
| **absorption** | **bile** | **chewing** | **gall bladder** | **large intestine** |
| **oesophagus** | **pancreas** | **peristalsis** | **small intestine** | **stomach** |

5. Mechanical digestion begins in the mouth with _____.
6. Food travels down the _____ to reach the stomach.
7. The movement that pushes food along the digestive tract is called _____.
8. The _____ mixes food with gastric juices and acid.
9. The liver produces _____ to help break down fats.
10. The _____ stores bile until it is needed.
11. The _____ releases enzymes that help break down food.
12. Most digestion and _____ take place in the small intestine.
13. The _____ absorbs water and forms faeces.
14. The _____ is where soluble nutrients move into the bloodstream.



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**3. True and False.** Write TRUE if the statement is true and FALSE if it is false.

15. The stomach uses both acid and enzymes to digest food. _____

16. Bile breaks down carbohydrates into sugars. _____

17. The pancreas produces digestive enzymes. _____

18. The oesophagus is responsible for nutrient absorption. _____

19. The large intestine stores undigested waste before it leaves the body.

_____

**4. Short Answer**. Answer the questions below.

(a) Define **mechanical digestion** and give one example from the diagram. (**2 marks**)

_____

_____

(b) Explain the role of the stomach in digestion. (**2 marks**)

_____

_____

(c) Why does food need to be mixed with enzymes? **(1 mark)**

_____

(d) State the function of the **gall bladder**. **(1 mark)**

_____

(e) Describe **two functions** of the small intestine. **(2 marks)**

_____

_____



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(f) Explain why the pancreas is considered part of digestion even though food does not pass through it. **(2 marks)**

_____

_____

(g) Explain what happens to digested food once it reaches the small intestine. **(2 marks)**

_____

_____

(h) Describe the role of the large intestine in forming faeces. **(2 marks)**

_____

_____

_____

_____

(i). What is the difference between the alimentary canal and digestive system? **(3 marks)**

_____

_____

_____

_____



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**Balanced Diet and Malnutrition**

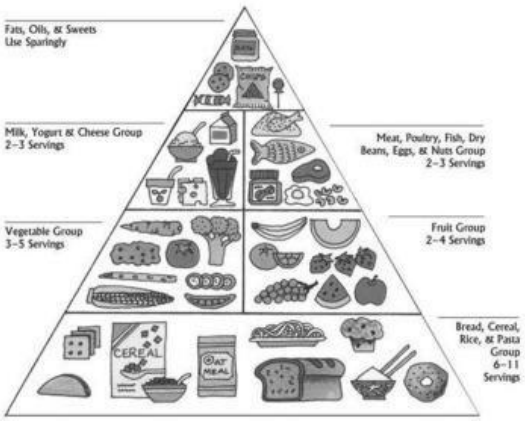


**DIAGRAM SHOWING A FOOD PYRAMID**

A balanced diet is one in which all the seven nutrients above are eaten in the correct amounts. This means water, fibre, carbohydrates and proteins are taken in in large quantities, while fats, vitamins and minerals are eaten sparingly.

Malnutrition means "bad nutrition" and may be because of undereating (starvation) or overeating (obesity). Below are notes on the nutrients that we should be eating for healthy living.

## Student's Work

Answer the questions below based on the **Food Pyramid Diagram** above and the information to the right of it.

**1.** Define the terms balanced diet. **(2 marks)**

_____

_____

_____

2. Define the term malnutrition. **(2 marks)**

_____

_____

_____

_____



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**3. Short Answer**. Answer the following questions based on the Food Pyramid Diagram:

(a). Which food group is found at the bottom of the food pyramid? **(1 mark)**

_____

(b). How many servings of vegetables are recommended each day? **(1 mark)**

_____

(c). Which group inclides milk, yoghurt and cheese? **( 1mark)**

_____

(d). Which group should be eaten sparingly? **(1 mark)**

_____

(e). Name two foods from the fruit group. **(1 mark)**

_____

(f). How many serving of bread, cereal, rice and pasta are recommened each day? **(1)**

_____

(g). Name one protein-rich food. **(1 mark)**

_____

(h). Which two groups recommend 2–3 servings per day? **(2 marks)**

_____



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**Digestion and the Teeth**

Digestion involves a mechanical and chemical component.

1. Mechanical digestion: carried out by the teeth and stomach and involves the actual breaking up of food into smaller pieces so that there are more of them for chemicals to act more quickly upon.
2. Chemical digestion: involves the splitting of the insoluble pieces from mechanical digestion into much smaller soluble particles using chemcals such as acids and enzymes.

**The Teeth**

The teeth are necessary for the initial nibbling, grinding and crushing of food before they pass through the digestive system. Humans have four types of teeth that each have a specific function because humans are omnivores:

1. Incisors are found towards the front of the mouth (e.g. bunny teeth); used for nibbling
2. Canines are found next to the incisors and are used for tearing especially of flesh.
3. Pre-molars are found next to the canines and are used to crush and grind food.
4. Molars are found beside these and are also used to crush and grind food.

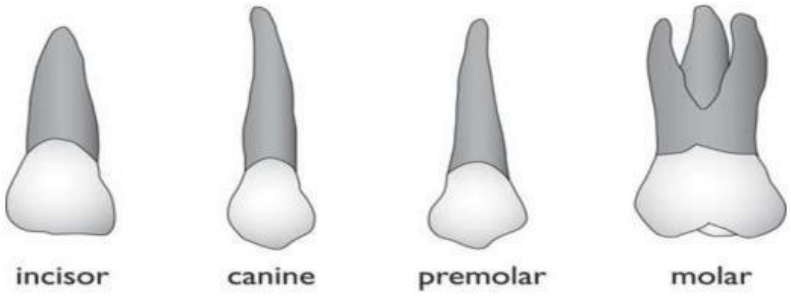


**DIAGRAM SHOWING THE FOUR TYPES OF TEETH**



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The two main regions of the tooth are:

1. The crown (seen part above gum)
2. The root (part embedded in the gum)

The layers of the tooth are:

1. Enamel- outer layer; hardest substance.
2. Dentine- bone-like layer; hard
3. Pulp cavity- living region containing the nerves and blood vessels
4. Cement and fibres- anchors tooth firmly in the jawbone.

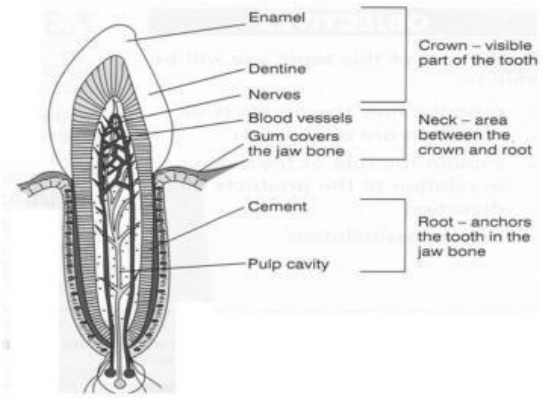


DIAGRAM SHOWING THE STRUCTURE OF A HUMAN TOOTH (INCISOR)

**Child Vs. Adult Teeth**

Children and adults do not have the same number of teeth. Children have 20 teeth (incisors, canines and pre-molars) called milk teeth which appear from about 6 month to 2-3 years old. Milk teeth start falling out after about 6 years old. The process continues graudally, with different teeth falling out at different times. By about **age 12–13**, most children have lost all their milk teeth and their **permanent (adult) teeth** have mostly come in.

Adults have 32 teeth (incisors, canines, pre-molars and molars) and these are now permanent teeth that last a lifetime if they are taken good care of. The back four molars in the mouth are called the wisdom teeth.

**Causes of Tooth Decay**

Tooth decay happens when **bacteria in the mouth feed on sugars** from food and drinks. These bacteria produce **acids** that attack the enamel of the tooth.

**Process of Tooth Decay**

The following are the steps that happen when tooth decay occurs.

1. Sugary food sticks to the teeth.
2. Bacteria in the mouth break down sugar and produce acid.
3. Acid breaks down the enamel and dentine creating a hole (cavity).
4. If untreated, the decaying hole reaches the **pulp cavity**, causing **pain and infection**.



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**Care for the Teeth**

To prevent tooth decay and keep teeth healthy:

1. **Brush twice daily** with fluoride toothpaste.
2. **Floss** to remove food stuck between teeth.
3. **Limit sugary foods and drinks**.
4. **Visit the dentist regularly** for check-ups.
5. **Use mouthwash** to reduce bacteria.

## Student's Work

**Read pages 22-24 about Digestion and the Teeth and answer the following questions.**

1. The baby or milk teeth of a human are:

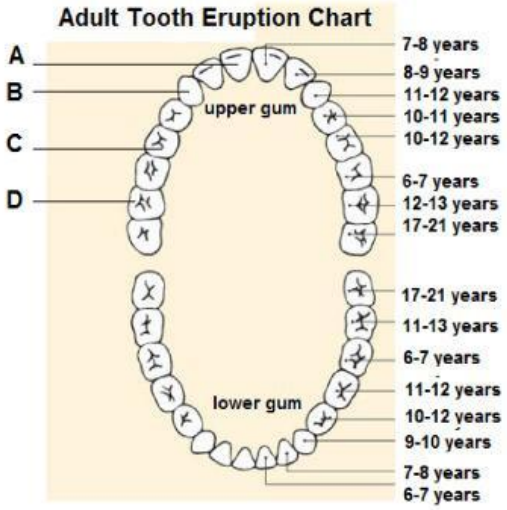
_____ _____ _____

2. The adult teeth consist of these four teeth:

_____ _____

_____ _____

3. Look at the set of adult teeth below and answer the following questions.



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a. Which word on the chart do you think means “to come out or emerge from the gum”?

_____

b. Label teeth A-D.

A._____ B._____

C. _____ D.___ _____

c. Complete the table below by looking at the diagram of the teeth above.

| | # INCISORS | # CANINES | PRE-MOLARS | MOLARS |
|---|---|---|---|---|
| UPPER GUM | | | | |
| LOWER GUM | | | | |
| TOTAL | | | | |

d. Based on the information in the table above, how many teeth should be in a full set of adult teeth?_____



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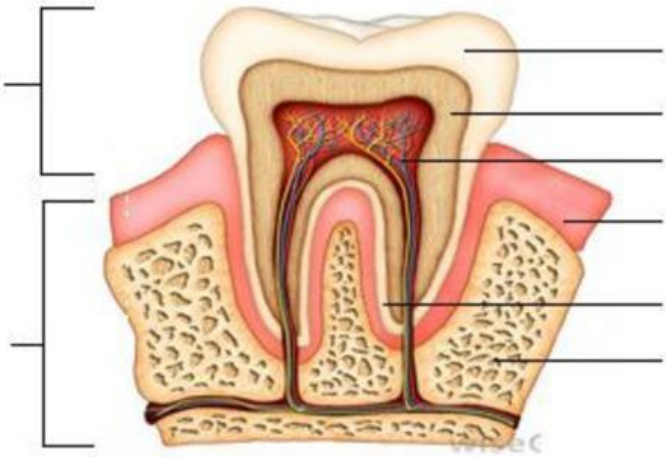
e. What type of tooth is shown below?_____

**i. LABEL** the crown and root on the tooth.

ii. **LABEL** the following parts on the tooth: PULP CAVITY, CEMENT, GUM, ENAMEL, DENTINE, JAWBONE.



f. What is a cavity?

_____

g. A cavity can be caused in the way described below. Place the steps in the correct order from 1-6.

_____ The acids destroy the enamel and create a cavity.

_____ Sweet sticky food are eaten and not removed from teeth by brushing.

_____More food is eaten and sticks in the cavity.

_____ Bacteria in the mouth feed on the food and produce acids as waste.

_____ The cycle continues until the cavity reaches the pulp and causes pain where the nerves are located.

_____ Bacteria produce more acids that make the cavity larger.



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h. The following pictures show ways to care for the teeth. Describe what is happening in each picture.

| | | | |
|---|---|---|---|
| | | | |
| | | | |



LIVEWORKSHEETS