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ملخص وشرح الدرس الثالث Obtaining energy and removing waste المتقدم المسار النفايات وإزالة الطاقة على الحصول

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إعداد: أحمد الحداد

التواصل الاجتماعي بحسب الصف السادس



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المزيد من الملفات بحسب الصف السادس والمادة علوم في الفصل الأول

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Mr. Ahmed Elhddad

0544557773



Mr. Ahmed Elhddad



Body Systems

Obtaining Energy and Removing Waste

Key Word	Cognate	Definition
carbohydrate	carbohidrato	substances found in foods that provide energy
eliminate	eliminar	to remove or get rid of something
neutralize	neutralizar	to cause to be neither an acid nor a base
physical	físico	relating to material things
protein	proteína	a long chain of amino acid molecules
swallow		to move something into your stomach through your mouth using muscles in your throat

eliminate swallow neutralize protein
carbohydrates

- meat and fish are a good source of _____
- Manchester United can _____ Chelsea in the cup final
- You will need a special chemical to _____ the acid
- You can drink water to help you _____ your medicine.
- bread is a great source of _____

Why do organisms eat?

- The amount of energy in food is measure in Calories.
- A Calorie (Cal) is the amount of energy it takes to raise the temperature of 1 kg of water by 1 °C



1060cals

420cals

What does energy from food power?

- Every activity you do, such as riding a bike or even sleeping, needs energy.
- The amount of energy a person needs depends on several factors, such as, weight, age, activity level, and gender.
- The energy you need comes from nutrients.

Which activity do you think need more energy? playing video games or playing football



What nutrients are in food?

- Food provides your body with **nutrients** and **Calories**.
- **Nutrients** are the parts of food used by the body to grow and survive.



How does digestion work?

- **Digestion** is the chemical & mechanical breakdown of food into small particles and molecules that your body can absorb & use.
- There are two types of digestion:
 1. Mechanical digestion
 2. Chemical digestion.





Types of digestion

- In **mechanical digestion**, food is physically broken into smaller pieces.
- Mechanical digestion happens when you chew food with your teeth and tongue.
- In **chemical digestion**, chemical reactions break down pieces of food into small molecules

How does digestion work?

- Your mouth helps you in mechanical digestion by chewing the food into small pieces.
- Your mouth also contains **Saliva**.
- **Saliva** contains chemicals that break down carbohydrates, it also contains substances that **neutralize** acidic foods.
- After you swallow your food, it enters the **esophagus**.
- The **esophagus** is a muscular tube that connects the mouth to the stomach.
- Food moves through the esophagus & the rest of the digestive tract by muscle contractions called **peristalsis**

How does digestion work?

- **Peristalsis** is like squeezing toothpaste, when you squeeze the bottom the toothpaste is forced toward the top. As muscles contract & relax, the food is pushed to the stomach

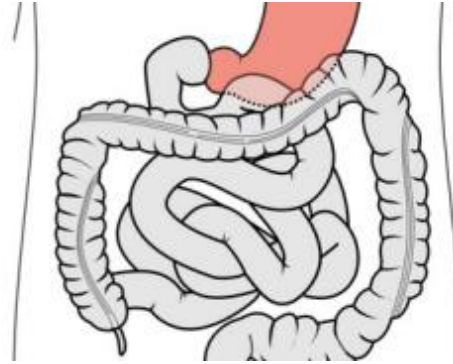


Peristalsis





- Once the food leaves the esophagus, it enters the **stomach**.
- Functions of the stomach are:
 1. It temporarily store food.
 2. It helps in chemical digestion



- The stomach contains an acidic fluid called **gastric juice**.
- Acids helps in breaking down the food you eat.



- Most Chemical digestion happens in the **small intestine**.
- It's where nutrients are absorbed by the body.
- The small intestine contains fingerlike projections called **villi**

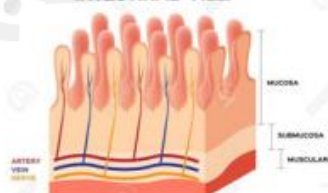


- Each **villus**, contains small blood vessels.
- Nutrients in the small intestine enter the blood through these blood vessels
- Most of the **water** in food and liquid is absorbed by the small intestine.

INTESTINAL VILLI

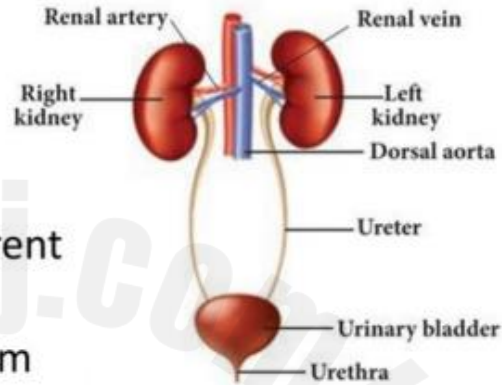


INTESTINAL VILLI

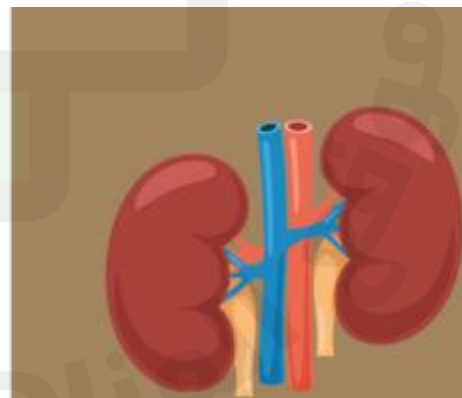




- Water is absorbed by the **large intestine**.
- The materials that pass through the large intestine are the waste products of digestion.
- Your body removes (eliminates) different substances from different body systems.
- The **excretory system** collects and eliminates wastes from the body and regulates the level of fluid in the body.



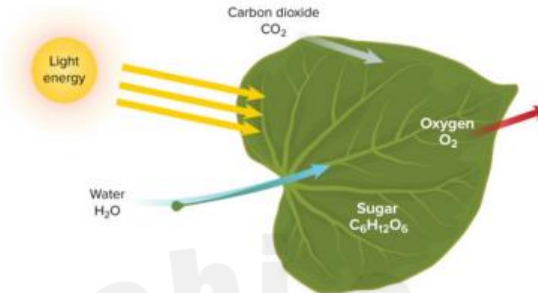
- The **excretory system** is made of different body systems, for example:
- The **urinary system** removes liquid from your body
- The **respiratory system** releases waste as carbon dioxide gas.
- The **skin** removes waste in the form of excess salt and water through the sweat glands
- The **kidneys** are bean-shaped organs that filter, or remove wastes from the blood.
- They remove harmful substances from the body.





How do plants obtain energy and get rid of wastes?

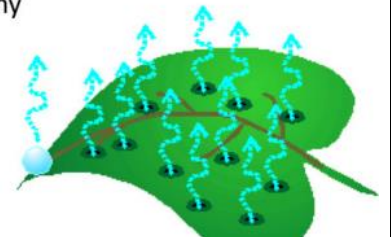
- Like you, plants need food, water, and oxygen.
- **Leaves** are the organs that produce food for the plants.
- **Leaves** is where photosynthesis happens.



- **Photosynthesis** is a series of chemical reactions that converts light, water, and carbon dioxide into food molecule glucose and give off oxygen.
- **Glucose** then enters a tissue called phloem, and flows to all plant cells
- Cells then break down the sugar and release energy.



- Plants also need water.
- After water enters a plant's roots, it moves into a tissue called **xylem**.
- Water then flows inside **xylem** to all parts of the plant.
- Plants produce water vapor as a waste product.
- Carbon dioxide, oxygen, and water vapor pass into and out of a plant through tiny openings in leaves.



Review

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calcium and vitamn D are examples of _____ that the body need

- bone marrow
- red blood cells
- Nutrients
- medicine

A _____ is the amount of energy it takes to raise the temperature of 1 kg of water by 1 °C

- Newton
- Force
- time
- Calorie

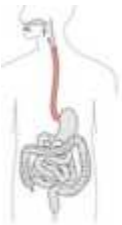
saliva, mouth Mechanical Chemical

1- _____ digestion, is where food is physically broken down into pieces.

2- your _____ helps you in mechanical digestion.

3- your mouth produce _____ which neutralize any acidic substances.

4- _____ digestion, is where chemical reactions breaks down food in smaller pieces.



What is this tube called?

- stomach
- small intestine
- large intestine
- esophagus

The muscle contractions by which the food moves through the digestive tract is called _____

- villi
- esophagus
- peristalsis
- stomach



Your mouth produces _____ to break down carbohydrates

- blood
- bone marrow
- Saliva
- Acid

What connects the mouth with the stomach?

- esophagus
- small intestine
- large intestine
- blood vessels



Where can you find this fingerlike projections?

- Stomach
- small intestine
- esophagus
- tongue



what is the function of this fingerlike projections?

- absorption of blood
- producing gastric juice
- protecting the stomach
- absorption of nutrients

the part where most chemical digestion happen is _____

- the mouth
- the large intestine
- the bladder
- the small intestine



Where can you find the gastric juice?

- The tongue
- the stomach
- the esophagus
- the small intestine



what are these fingerlike projections called?

- cilia
- villi
- hair
- bone marrow

The acid that is found in the stomach is called _____

- Amino acid
- gastric juice
- Sulfuric acid
- Potassium acid

The movement of muscles that allows food to move in the esophegus is called

- relaxation of muscles
- peristalsis
- lungs
- photosynthesis

What does the mouth produce to help neutraliza acidic food?

- Blood
- Urine
- Saliva
- Yellow bone marrow

Which parts of the digestive systems absorbs water?

- The stomach
- the small intestine
- the large intestine
- the small and large intestine



what is the system that removes waste and regulates fluids in the body called?

- the digestive system
- the excretory system
- the muscular system
- the skeleton system

What is the organ that removes wastes from the blood?

- the kidneys
- the liver
- the heart
- the lung

the small intestine contains _____ which absorbs nutrients from the food

- Cilia
- peristalsis
- villi
- hair

The tissue that transports glucose through out the whole body is called _____

- xylem
- phloem
- villi
- peristalsis

the tissue in the plant that transports water through out the whole plant is called _____

- xylem
- phloem
- villi
- peristalsis



2. Peristalsis occurs in the esophagus and helps food travel from the mouth to the stomach. Which of the following explains the cause of peristalsis?



- A The skeletal system presses into the esophagus, moving food downward.
- B When the lungs inhale and exhale, it can force the esophagus to move.
- C Peristalsis is the persistent movement of the esophagus, it is not caused or triggered by any one body system.
- D Waves of muscle contractions help push food down the esophagus toward the stomach.
3. What would be the effect on your body if you did not have kidneys, important organs in the excretory system?
- A My body would not absorb nutrients.
- B Waste would collect in the blood and become toxic.
- C I could not eat gluten.
- D Saliva could not be produced.
