

Biology S2
9-9-10
Schy

The Breakdown of Food

By the end of class **SWBAT**:

Content:

(1) explain the difference between mechanical and chemical digestion, **(2) determine** which parts of the digestive tract perform mechanical and which parts perform chemical digestion, **(3) explain** what happens to the three major macromolecules (carbohydrates, lipids, proteins) during digestion

Language:

By **(1) taking notes** on the powerpoint presentation, **(2) discussing** the question w/ a neighbor, **(3) taking notes** on the powerpoint

(1) explain the difference between mechanical and chemical digestion

The two main types of digestion are:

1.

2.

(2) determine which parts of the digestive tract perform mechanical and which parts perform chemical digestion

1. Mechanical digestion occurs in the _____

2. Chemical digestion occurs in the _____ and _____

(3) explain what happens to the three major macromolecules (carbohydrates, lipids, proteins) during digestion

Type of macromolecule (elements it is made of)	Broken Into (elements it is made of)	Mechanical or Chemical
Carbohydrate: starch (simple sugars)	Simple sugars (carbon, hydrogen, oxygen)	Chemical

Do Now (2 min.)

Yesterday we looked at the path food travels during digestion, but we did not talk about what actually happens to that food.

Answer the question below.

What do you think happens to your food during digestion?

Agenda

1. Do Now (2 min.)
2. Objectives (3 min.)
3. Quick review (5 min.)
4. Types of digestion (15 min.)
5. What happens to Carbohydrates? (10 min.)
6. What happens to Proteins? (10 min.)
7. What happens to Lipids? (10 min.)
8. Closing (5 min.)

Carbs?
Protein?
Lipids?

What happens to food during digestion?

9/8/10

Objectives (3 min.)

By the end of class **SWBAT**:

Content:

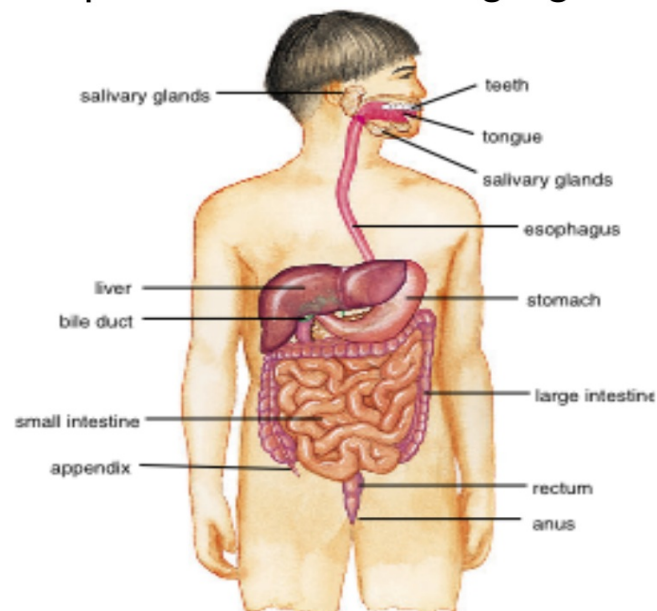
- (1) **explain** the difference between mechanical and chemical digestion,
- (2) **determine** which parts of the digestive tract perform mechanical and which parts perform chemical digestion,
- (3) **explain** what happens to the three major macromolecules (carbohydrates, lipids, proteins) during digestion

Language:

- By (1) **taking notes** on the powerpoint presentation,
- (2) **discussing** the question w/ a neighbor,
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Quick Review (5 min.)

What is the path food travels during digestion?



Today's focus: What happens to the food during digestion?

Two Types of Digestion (15 min.)

1. Mechanical Digestion:

the physical breakdown of groups of macromolecules

(macro → macro)

2. Chemical Digestion:

the breakdown of macromolecules into its subunit parts

(micro → micro)

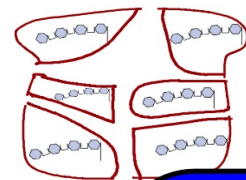
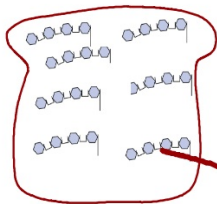
Macromolecule: a molecule made of many smaller molecules

Two Types of Digestion cont.

1. Mechanical Digestion:

the physical breakdown of groups of macromolecules

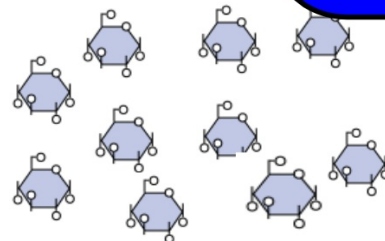
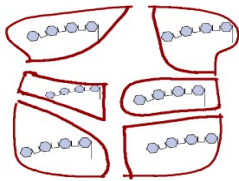
Bread



*starch
macromolecules*

2. Chemical Digestion:

*the breakdown of macromolecules into its subunit parts or
sometimes molecules*



Two Types of Digestion cont. (15 min.)

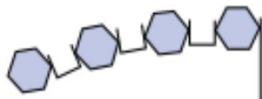
Our body does both types of digestion.

Turn and talk to your partner about the following questions

1. What part(s) of the digestive tract does mechanical digestion?
2. What part(s) of the digestive tract does mechanical digestion?

Wh

Carbohydrate (starch)

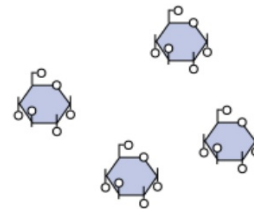


made of _____

Mechanical or Chemical



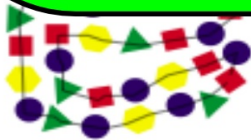
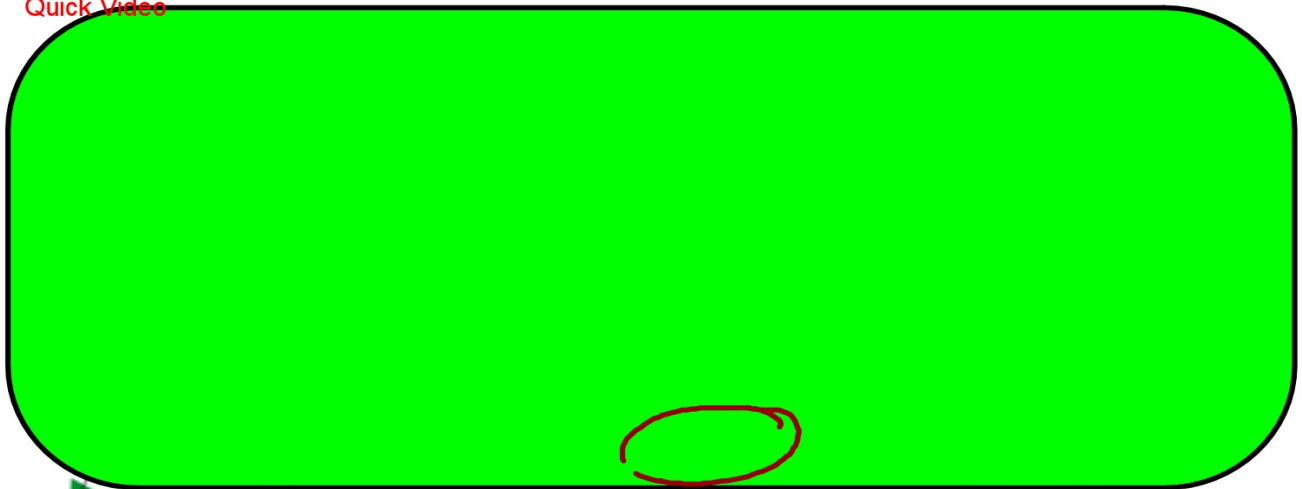
Simple Sugar



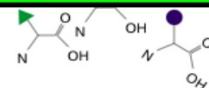
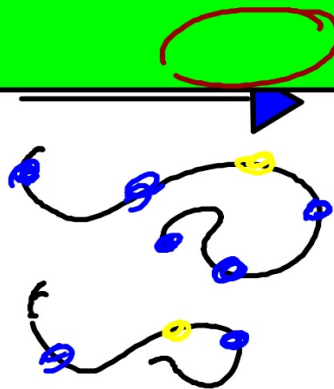
made of carbon,
hydrogen, oxygen

What happens to Proteins?(10 min.)

Quick Video



made of _____



made of carbon, nitrogen,
hydrogen, oxygen

-lipids are the same things as fats/oils

Lipid

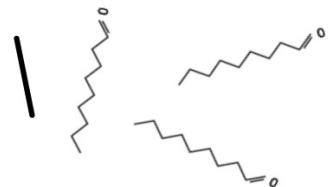


made of 3 fatty acids, joined by
a molecule of glycerol

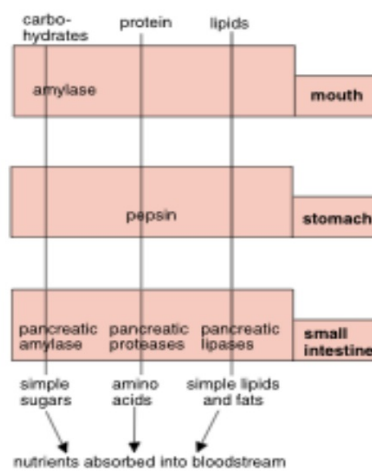
Mechanical or Chemical



Fatty Acid



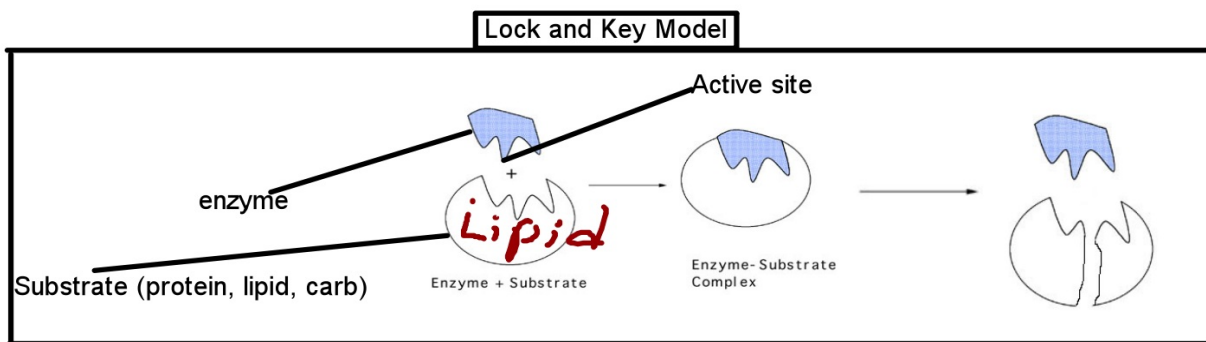
made of carbon, hydrogen, oxygen



diffusion

Closing (5 min.)

How do macromolecules get chemically digested?



-macromolecules get chemically digested by the help of **enzymes**

enzymes: a protein made by a living organism which speeds up chemical reactions

- enzymes are not destroyed during the process
- enzymes must have the substrate connect at its **active site** to a in order to speed up the reaction

substrate: the substance an enzyme acts on (in digestion it will be a carb, protein, or lipid)

Enzyme or Substrate?

