

Name _____ Period _____ Date _____

Food: Our Body's Source of Energy and Structural Materials (pages 328-332) BSCS

Define food: _____

In extreme situations, food is whatever will _____

Most food substances consist largely of _____

We need enormous amounts of _____ as compared to other nutrients.

How much water does the average American diet include daily? _____

How much protein? _____

What are the three major nutrients that make up most of our food? _____

_____ and _____

The remainder consists of _____ and _____

What is an important function of the digestive system? _____

➤ Complex carbohydrates such as starch are broken down into a simple _____
such as _____

➤ Proteins are broken down into _____

➤ Fats are broken down into an array of _____

What does good nutrition mean?

- _____
- _____

Who determines what constitutes a level of good nutrition? _____

_____ and other _____

1000 calories = _____

Define calorie: _____

Define diet: _____

What are 3 things that influence a person's diet?

- _____
- _____
- _____

What is protein needed for? _____

How many of the 20 amino acids can the body make (synthesize)? _____

How many amino acids is the body unable to make? _____

Where do we need to get the amino acids that the body cannot make? _____

What are some high protein foods?

- _____ such as meat, milk and eggs
- The plant source _____
- Other plant derived foods such as _____, _____ and _____

What are some legumes? _____ and _____

Why are fats important nutritionally?

- Making _____ and _____
- _____

Most Americans consume too many _____ and many of these _____ are the wrong type. _____ fats are a particular concern.

Another name for fats is _____

Fats are present in _____ and _____

What problem is linked with the intake of lipids? _____

Fats should take up less than _____ % of daily kcals?

What contains fatty acids that are good for the heart? _____

Fatty acids are required for normal development of the _____ and _____ systems.

Carrots, cabbage and groats provide _____, _____, _____ and _____.

_____ provide the fuel a body can use most readily.

What does fiber come from? _____

Humans cannot digest _____ but it absorbs _____ and _____ and helps ensure regular _____.

Humans need only very small amounts of _____

Partnered with _____, vitamins regulate _____

Vitamins are necessary for normal _____ and _____

What do B-complex vitamins such as thiamine and riboflavin do? _____

Thiamine deficiencies can lead to:

1. _____
2. _____
3. _____
4. _____

What are elements? _____

Essential elements such as _____ and calcium are important to maintaining _____

Use the chart E7.6 page 332 to answer the following:

1. Too much chlorine causes _____
2. Not enough _____ causes muscle and nerve weakness and poor digestion.
3. A source of sulfur includes _____
4. Magnesium can be found in _____ and _____
5. Why does the body need chlorine (3 reasons):

- _____
- _____
- _____

6. Too much _____ causes drowsiness, coma and death.

Copymaster: Dietary Analysis

Use the following procedure to analyze your daily diet:

1. On a sheet of paper, list all of the food that you ate yesterday. Include both meals and snacks.
2. Use the information in the worksheet below to estimate the number of servings you ate from each food group. For example, if your breakfast consisted of a small glass of milk and a piece of toast, you might estimate that you consumed one serving from the milk group and one serving from the grain group for breakfast. Complete such an estimate for each meal or snack.
3. Enter into the worksheet the number of servings that you consumed from each food group at each meal or during your snacks.
4. Add up the numbers across each row to determine the total number of servings you ate from each food group during the day. Enter these totals in the *Personal Profile* column.
5. Copy the information from the composite your teacher constructed for a "typical" student into the column labeled *Class Profile*.

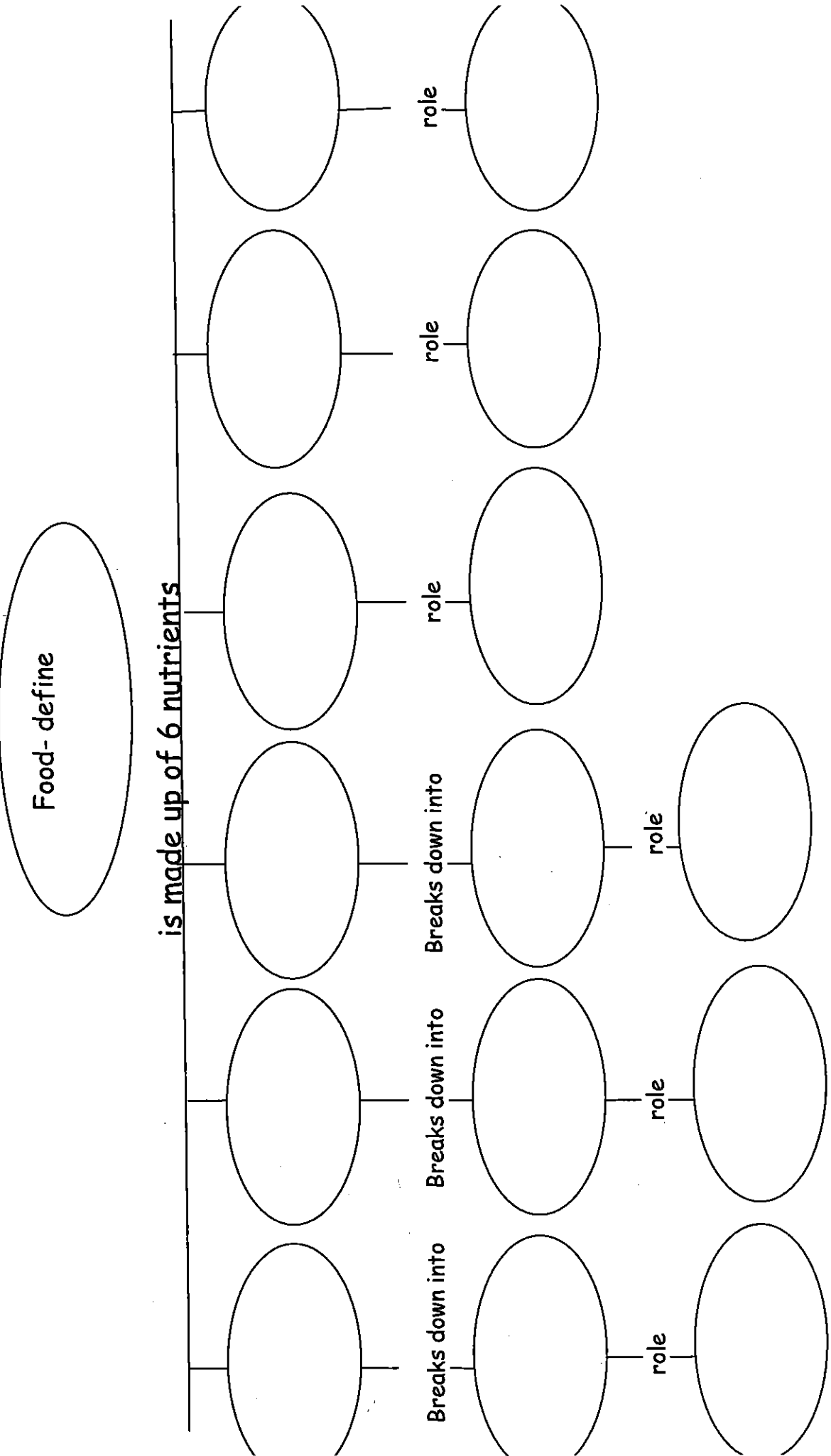
Worksheet

Food Groups	Breakfast	Lunch	Dinner	Snacks	Personal Profile	Class Profile
Milk group milk (1 cup), cheese (1 slice), milk shake (10 oz), yogurt (1 cup), ice cream (½ cup), cheese pizza* (½ of 12" pie)						
Meat group beef, pork, chicken, fish (3 oz), eggs (1), luncheon meats (1 slice), nuts, seeds (¼ cup), meat pizza* (½ of 12" pie)						
Fruit group apples, bananas, pears (1 med.), grapes, strawberries (½ cup), grapefruit (½ med.)						
Vegetable group broccoli, cauliflower, green beans (½ cup), potatoes—mashed (½ cup), baked (1 lg.), fries (10 strips), peas (½ cup), tossed salad without dressing (½ cup)						
Grain (bread/cereal) group bread (1 slice), cereal (1 oz), muffin (1 small), rice (½ cup), pancake (4"), tortilla (corn 6", flour 8"), pizza* (½ of 12" pie), beans (½ cup)						
Fats, oils, and sweets chips, pretzels, etc. (1 oz), salad dressing (1 tbsp), soft drinks (12 oz), pie (½ of 9" pie), cake (¼), candy (1 oz), cookies (2 small)						

*Count cheese pizza as both a milk and a grain group. Count meat pizza as one serving in the milk, grain, meat, and fat groups.

Food: Our Body's Source of Energy & Structural Materials (pgs. 328-332)

Directions: Add Definition, terms & information as you read.



Name: _____ Period: _____

What Happens to the Food You Eat? Page 334

- > Decreases in nutrient levels in your _____ send a message to the hunger center in the brain's _____
- > The _____ responds by the release of _____ juices to the _____
- > A feeling of _____ motivates you to find food.

What else controls eating?

- Signals from sensory organs about the _____, _____, _____ of food.
- _____ and _____ developed about food

Once the hunger signal begins:

- Initial responses stimulate the secretion of _____ such as _____
- Those hormones stimulate further secretion of _____ to the stomach
- _____ system alerts your body that it needs (or wants) food
- You change behavior to locate food.

Two animals that do not need to bring food inside their bodies for digestion are:

_____ and _____.

Food is digested:

- ✓ Obtain food, _____ and _____
- ✓ Chewing increases the surface area of food so _____ can take place more quickly.
- ✓ Chewing _____ food with saliva from _____ located under the _____
- ✓ Proteins remain intact but must be broken down into their subunits called _____
- ✓ _____ must be broken down into sugars. _____ help make this happen. Enzymes "catalyze" (_____) molecular reactions. Enzymes act on _____.

- ✓ Enzymes that help break down food are present in your _____, _____, and _____.
- ✓ Saliva contains the enzyme _____ which breaks down _____ into _____ molecules.
- ✓ The stomach contains the enzyme _____ which binds to protein molecules.
- ✓ Pepsin in the _____ and digestive enzymes in the _____ break down protein into _____.

From the chart:

Amylase → _____ → _____ (maltose)

Proteases → _____ → _____

Lipases → _____ → _____ + _____

✚ **DIGESTION WORKSHEET** will be handed out for the path food takes through the digestive system and what foods are digested in each organ.

Liver cells monitor _____ in the blood and adjust them as necessary:

Substances present in excess amount are removed and _____.
 Substances lacking are _____.

Liver releases stored forms or stimulates _____.

Process followed by the body during heavy exercise:

- _____ levels in blood drop.
- Sensors signal liver to release _____ stored as _____
- Glycogen is broken down into _____

Other Liver Jobs:

- Liver cells also remove and collect _____ such as alcohol and drugs from blood.

Final Elimination:

- _____ remains can't pass through the wall of the _____
- These remains go into the _____ which absorbs _____ and returns it to blood
- The body eliminates compacted _____

Name: _____ Date: _____

Log onto

<http://science.nationalgeographic.com/science/health-and-human-body/human-body/digestive-system-article.html>

Digestive System Anatomy

Read each section carefully

1. What is the GI tract? _____

In the **mouth** click on the following and tell what they do:

a. Salivary glands _____

b. Teeth _____

c. Tongue _____

d. Epiglottis _____

e. Esophagus _____

In the **esophagus**:

What is a sphincter? _____

What does it do? _____

In the **stomach**:

2. What is chyme? _____

3. What do the following do?

a. Muscular walls _____

b. Liver _____

c. Gallbladder _____

d. Pancreas _____

In the **Intestines**

4. Why is the small intestine made up of folds? _____

5. How many nutrients are absorbed in the small intestines? _____

6. What is the main job of the large intestine? _____

Feed The System:

Bread

1. Where does the carbohydrate turn into glucose? _____

2. Where is glucose absorbed? _____
3. Where is glucose stored? _____
4. Why do we need to break down carbohydrates into glucose? _____

Steak

1. What happens to protein in the mouth? _____
2. What is protein broken down into? _____
3. Where it is absorbed? _____
4. Where does extra protein go? _____

Broccoli

1. What happens in the mouth? _____
2. What happens in the stomach? _____
3. What is absorbed? _____
 - a. Where? _____
4. What happens to bulky fibers? _____

Ice cream

1. What happens in the mouth? _____
5. What happens to sugar? _____
 - a. Where? _____
6. What happens to the fat? _____
 - a. Where? _____

What is the transport mechanism for all nutrients? _____

Name _____

Date _____

Class _____

The Chemistry of Life

Reinforcement and Study Guide

For each of the following statements about carbon, write true or false.

- _____ 1. Carbon atoms can bond together in straight chains, branched chains, or rings.
- _____ 2. Large molecules containing carbon atoms are called micromolecules.
- _____ 3. Polymers are formed by hydrolysis.
- _____ 4. Cells use carbohydrates for energy.

Write each item below under the correct heading.

sucrose

glucose

starch

 $C_6H_{12}O_6$

cellulose

glycogen

fructose

 $C_{12}H_{22}O_{11}$

Monosaccharide
5.
6.
7.

Dissaccharide
8.
9.

Polysaccharide
10.
11.
12.

Complete the table by checking the correct column for each description.

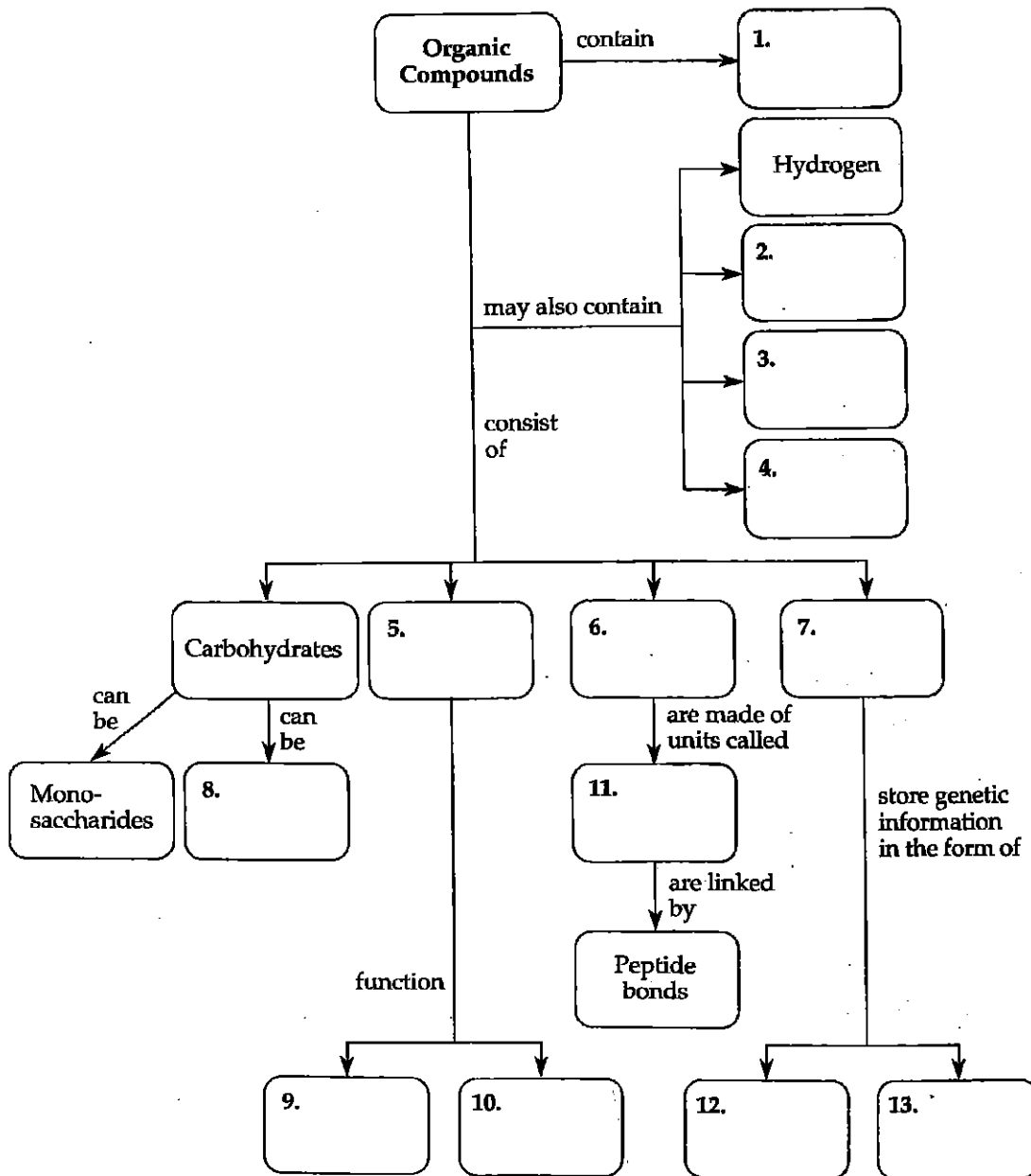
Description	Lipids	Proteins	Nucleic Acids
13. Made up of nucleotides			
14. Most consist of three fatty acids bonded to a glycerol molecule			
15. DNA and RNA			
16. Contain peptide bonds			
17. Produce proteins			
18. Commonly called fats and oils			
19. Made up of amino acids			
20. Used for long-term energy storage, insulation, and protective coatings			
21. Contain carbon, hydrogen, oxygen, and nitrogen			

The Chemistry of Life

Graphic Organizer

Concept Map

Using the information from the chapter, complete the concept map below. If there is not enough room in the concept map to write your answers, write them on a separate sheet of paper.



Chapter 7- ESSAY #1
Human Performance: A Function of Fitness

Directions: Read pages 326-328 and answer the following questions.

1. Would a sprinter's fitness be the same as a marathon runner's fitness? EXPLAIN WHY OR WHY NOT.

2. Is it possible for a person who lacks the special skills required for any form of athletics to be fit for life itself?

3. What is the definition of "fitness"?

4. What two basic resources does your body require for all biological activity?

5. Define matter:

6. Define energy:

7. What do the bodies of organisms need energy for?

8. Explain how a trained racer's body is organized more efficiently than a couch potato's.