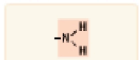
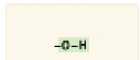
Table 2 Functional Groups

Suffix	Type of Compound	Functional Group	Examples
-ol	alcohol		
-oic	carboxylic acid		
-amine	amine		

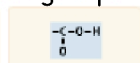
Use these as functional groups



Amino group

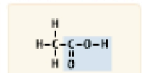


Hydroxyl group

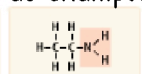


Carboxyl group

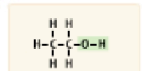
Use these as examples



Ethanoic acid



Ethamine



Ethanol

Place the number of the word in front of its correct definition

1	Amino acid	a member of a class of organic compounds that are the basic building blocks of proteins
2	Nucleic acid	the total mass of all living matter
3	Biomass	a large organic molecule found in living organisms, which includes lipids, proteins, carbohydrates, and nucleic acids
4	Organic compound	an organic compound used by cells to store and release energy
5	Hydrocarbons	a group of atoms that replaces a hydrogen atom in organic compounds
6	Biomolecule	molecules that contain only carbon and hydrogen atoms
7	Functional group	a biological compound, including fats and oils, which is not soluble in water and it contains carbon, hydrogen, and oxygen
8	Carbohydrate	a molecule that shares electrons equally and does not have oppositely charged ends
9	Lipid	a biomolecule, such as RNA and DNA that stores cellular information in cells in all plants and animals
10	Nonpolar molecule	a large number of compounds that contain the element carbon

Draw a line to match the term with its correct definition:

Saturated Hydrocarbon	Each carbon atom in the molecule shares a single bond with each of 4 other atoms. Also called alkanes
Unsaturated Hydrocarbon	Based on benzene and often have strong odors
Aromatic Hydrocarbon	Contains at least 2 carbon atoms that share a double or triple bond. Also called alkenes or alkynes

Science number

Chp16 Chemical Compounds

Organic Chemistry (Use your Holt Book & the on-line reading)

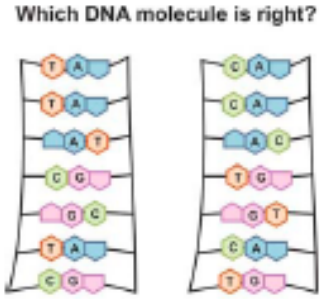


Figure 11.13: *Only one of the DNA molecules shown is correct. Which one is it (question 8)?*

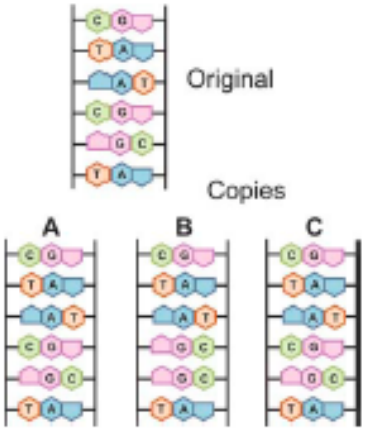


Figure 11.14: *A DNA molecule and three copies of the same molecule.*

One of the DNA sequences in Figure 11.13 is impossible. Whi one is wrong and why is it wrong?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Which of the DNA sequences i Figure 11.14 contains a mutati

_____
_____
_____
_____
_____

Name: _____ ***pd***__

Parent Signature of completion: _____

Section 3: Organic Compounds Pg 407-413 (& pg 2/3 in additional reading)

How many bonds does the carbon atom form? _____

Why is this important?_____

Copy the 3 different types of carbon chains from Figure 18

Straight	Branched	Ringed

Use pgs 408-411 & pg3 in the additional reading to complete the table below

Draw the functional group	Definition	Additional info	examples
Carbohydrates	_____ _____ _____ _____ _____ _____ _____		
Lipids (Fats)	_____ _____ _____ _____ _____ _____ _____		
Proteins	_____ _____ _____ _____ _____ _____ _____		
Nucleic Acids	_____ _____ _____ _____ _____ _____ _____		

pg2

Teach a parent: This unit's concepts :

Teach your parents about Carbon and the special bonds producing Lipids, Carbohydrates and Proteins. Review your Carbon Book with them. Be sure they write what they have learned from your teaching

Parent Response

1. _____ I'm not sure my child really understands, therefore, I don't either. Please work with him/her and let's try again.
2. _____ The concept was explained thoroughly with effective examples he/she created. "By golly, I think they've got it!"
3. _____ WOW! My child did an exceptional job!

Parent Signature:_____ Date: _____

Mom or Dad Comments: Please explain how your student taught you this concept and * <u>what you learned in 3-5 sentences!</u> * This is critical for them to receive full points

_____
_____
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Additional Chapter Notes:_____

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Draw the Structure!

Carboxyl basic structure	Alcohol basic structure	amine basic structure	Amino acid structure
Carboxylic acid structure	Methane	Methonic acid	methanol
Methyl amine	Ethyne	Ethane	Ethonic Acid
Ethanol	Ethyl amine	Ethene	Propane
Propanolic Acid	Propanol	propene	propyne
Butane	Butene	1-butyne	2-butene
isobutane	Pentane	Pentyne	pentene
2-isopentane	Pentanol	Carbohydrate	Lipid structure
Saturated fat		Unsaturated fat	

Questions to know! Use Lecture notes/reading and Some research

Define hydrocarbon: _____

What replaces hydrogen in:1: amines: _____ 2. Alcohol _____

3. Carboxylic acids_____ 4. Amines _____5. Amino acids_____

What is the backbone in organic chem.? _____

What elements do all organic compounds contain: _____

How many covalent bonds does carbon have:_____ What does covalent mean? _____

What does isomer mean?_____

Organic compounds are formed through what kind of bonds? _____

Biochemicals that store information and help build proteins are called: _____acid

What is a monomer? _____

What's the difference between saturated & unsaturated? _____

_____

What is a carbohydrate monomer? _____ (hint: plants make it!)

Name a carbohydrates polymer: _____

These have one or more simple sugars bonded together that are used as a source of energy:_____

Bread is considered this type of organic compound: _____

Butter, bacon and ice cream is this type of organic compound: _____

Meat & fish (and even some beans) are considered this type of organic compound: _____

These organic compounds do NOT dissolve in water: _____

The simplest alkane is: _____ The simplest alcohol is:_____

The simplest carboxylic acid is: _____ Simplest amino acid? _____

Ethane has what kind of bond between carbons? _____

Ethyne has what kind of bond?_____

Ethene's bond?_____

Which provides MORE energy fats or carbohydrates? _____

On Line Reading Questions: use pdf on my web page

Vocabulary Work:
Select the correct term to complete the sentences.

a. nucleic acid	b. fat	c. carbohydrates
d. photosynthesis	e. unsaturated	f. proteins
g. cellular respiration	h. organic chemistry	i. partially hydrogenated
j. catalyst	k. protein synthesis	L. nitrogen bases
m. amino acids	n. mutations	o. enzymes

Section 11.1

1. The branch of chemistry that specializes in carbon and carbon compounds is called _____

2. The chemical energy that supports the food chain on Earth comes from a reaction called _____

3. The reaction that breaks down glucose and releases its stored energy is called _____

4. Sugars and starches are classified as _____

5. DNA is an example of a(n) _____

Section 11.2

6. High-energy _____molecules are used to store energy in reserve.

7. _____ are made up of amino acids.

8. When a fat molecule has two hydrogen atoms bonded to each carbon atom, it is called a _____fat.

9. When a fat molecule has some carbon atoms double bonded to each other, along with hydrogen atoms, it is called a(n) _____fat.

10. _____ are organic molecules that are the building blocks of proteins.

11. _____allow your body to initiate chemical reactions and control the reaction rates.

12. Changes in DNA are called_____.

13. Enzymes are a type of_____for chemical reactions.

14. The process the cells in your body use to build proteins from amino acids is called _____

15. The molecular components within DNA that contain the code for building proteins from amino acids are _____

Section 11.1 & 11.2 Questions to Answer:

1. Classify these carbohydrates as containing mostly (A) sugar, (B) starch, or (C) cellulose:
   a. a stack of firewood__ b. rice__ c. jelly beans __ d. a cotton shirt ___ e. an apple ___

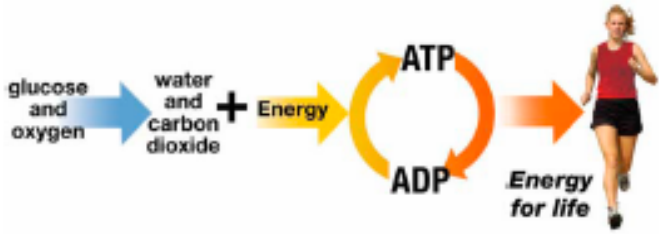
2. The human body is made mostly of:
   a. carbon, oxygen, nitrogen, and hydrogen.
   b. oxygen, calcium, carbon, and hydrogen.
   c. hydrogen, iron, nitrogen, and oxygen.

3. Which of the following compounds are organic?
   a. nucleic acid b. CH_4 c. H_2O d. hydrochloric acid e. table salt f. sugar

4. Identify each of the following as a carbohydrate, fat, protein, or nucleic acid.
   a. glucose b. DNA c. cholesterol d. cellulose e. olive oil

5. About how many different amino acids are found in animal proteins?
   a. 2 b. 4 c. 20

6. What process does the diagram illustrate? _____



7. Which of the following is NOT part of the process for the body to get the essential proteins it needs?
   a. protein synthesis
   b. digestion of food protein into amino acids
   c. the manufacturing of amino acids from fats

8. Of the four nitrogen base pairs, adenine always pairs with:
   a. adenine b. guanine c. thymine d. cytosine

9. The diagram shows an enzyme and three different molecules.
   Which of the three molecules would this enzyme target for a reaction?