

Part 2: Chemistry of Living Systems

Chemistry of Living Systems (Life Sciences)

6. Principles of chemistry underlie the functioning of biological systems. As a basis for understanding this concept:
- Students know* that carbon, because of its ability to combine in many ways with itself and other elements, has a central role in the chemistry of living organisms.
 - Students know* that living organisms are made of molecules consisting largely of carbon, hydrogen, nitrogen, oxygen, phosphorus, and sulfur.
 - Students know* that living organisms have many different kinds of molecules, including small ones, such as water and salt, and very large ones, such as carbohydrates, fats, proteins, and DNA.

Turn to page 407. Read all 3 paragraphs on the page and answer the questions

1. What are organic compounds?

2. Why is carbon such an important element?

Fill out the table below, using pages 408-411.

Biochemicals: The Compounds of Life

	What is it?	Examples	Picture
Carbohydrates "Carbs"		<ul style="list-style-type: none">•••	
Lipids "Fats"		<ul style="list-style-type: none">•••	
Proteins		<ul style="list-style-type: none">•••	
Nucleic Acid "DNA"		<ul style="list-style-type: none">•••	

Composition of the Human Body

Did you know that your body is made out of the following (minus water)?

- 53% Carbon
- 21% Oxygen
- 9% Nitrogen
- 8% Hydrogen
- 4% Calcium
- 3% Phosphorous
- 2% Sulfur, Sodium, and all other elements



Time to figure out what this is in pounds! First, how much do you weigh?

Total Weight: _____ pounds.

Fill out the table below:

Element	In Body	Decimal	Pounds Decimal x your weight
Carbon	53%	.53	.53 x _____ = _____
Oxygen	21%		
Nitrogen	9%	.09	
Hydrogen	8%		
Calcium	4%		
Phosphorous	3%		
Other Elements	2%		
Total:	100%	1.0	

Below, make a bar graph of pounds on the y-axis and the 7 elements on the x-axis. Color each element/bar a different shade.

