**Guided Reading Chapter 16 Section 3**

1. How is it that substances can have the same chemical formulas but make different types of matter?
2. An element that is organic, unique and has a branch of chemistry which specializes in it, is called
3. oxygen b) silicon c) carbon
4. Carbon molecules are found in three shapes, straight chains, rings, and
5. triangles b) branched chains c) broken chains
6. A polymer is a molecule that is composed of long chains of smaller molecules. One common polymer is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. Name the four groups in which scientists classify organic molecules.
8. Carbohydrates are composed of carbon, hydrogen, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_, and make up sugars and starches.
9. Use colored pencils to sketch the glucose molecule in figure 16.20 on page 371.
10. What is the difference between a starch polymer and a cellulose polymer since they are both made of glucose?
11. Lipids are oils, fats, and waxes that are made from carbon, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and oxygen.
12. silicon b) hydrogen c)sulfur
13. Using colored pencils, sketch the lipid molecule in figure 16.21 on page 372.
14. What is the difference between a saturated and an unsaturated fat?
15. Proteins are large molecules made of carbon, oxygen, hydrogen, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and sometimes sulfur.
16. nitrogen b) silicon c)phosphorous
17. Nucleic acids are long, repeating \_\_\_\_\_\_\_\_\_\_\_\_\_\_ called nucleotides.
18. Nucleic acids are made from \_\_\_\_\_\_\_\_\_\_\_\_, oxygen, hydrogen, nitrogen, and phosphorus.
19. silicon b) sulfur c) carbon
20. A special nucleic acid called \_\_\_\_\_\_\_\_\_\_\_\_\_\_ contains all the information cells need to make their proteins and the genetic code for organisms.