

## WEBQUEST: Chemistry of Life Review

Go to the following web address <http://www.chem4kids.com/> .

Click on the **Atoms link**. Read the information and answer the following questions.

1. What are considered the alphabet in the "language of molecules?" \_\_\_\_\_

2. What are the 3 parts that make up all atoms?

\_\_\_\_\_

3. What are two ways that atoms are different?

4. Fill in the blanks below.

Particles of matter -> \_\_\_\_\_ -> Molecules -> \_\_\_\_\_ ->

Cell organelles -> \_\_\_\_\_

Click on the **Structure link** on the right hand side of the page.

5. Draw the structure of the atom below, labeling the charges on each particle.

6. Where are the electrons found? \_\_\_\_\_

7. a. Where is the nucleus of an atom? \_\_\_\_\_

b. What's found inside of it? \_\_\_\_\_

8. What is an ion? \_\_\_\_\_

9. Compare cations and anions.

Click on the **Ions link**.

10. a. What is the charge of an atom if it is missing an electron? \_\_\_\_\_

b. What is the charge of an atom if it has an additional electron? \_\_\_\_\_

11. What are the two kinds of bonds?

12. Draw a diagram of an electrovalent (ionic) bond and explain what is happening.



13 Draw a diagram of a covalent bond and explain what is happening.

**Click on Next.**

14. a. What is an isotope? \_\_\_\_\_  
b. TRUE or FALSE (circle one). An atom is the same element if it has an extra neutron.

15. Draw a picture of the two types of carbon isotopes.

Click on the Compounds link. (In the right margin.)

16. An element is a substance made of only one kind of atom. What is a compound?

17. **At the bottom of the page, click on Elements & the Periodic Table.** The major elements in all cells are carbon, hydrogen, nitrogen, oxygen, and phosphorous. Click on the link for each of these elements and complete the chart below with an interesting fact about each.

Element	Interesting Fact
carbon	
hydrogen	
nitrogen	
oxygen	
phosphorous	
Sulphur	

**At the bottom of the page, click on Reactions.**

18. What are the three key points regarding reactions?

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

**Click on Next Page on Reactions.**

19. What is the rate of a reaction?

20. What 3 factors affects the rate of a reaction?

\_\_\_\_\_

**Click on Catalysts and Inhibitors. (In the right margin.)**

21. What is a catalyst?

22. What is the activation energy?

23. TRUE or FALSE. When the activation energy is lowered in a chemical reaction, the products can combine more easily.

**Click on Acids and Bases. (In the right margin.)**

24. a. What is a pH scale? \_\_\_\_\_

b. The 2 ions the pH focuses concentration on are \_\_\_\_\_ and \_\_\_\_\_

25. a. What pH does distilled water have? \_\_\_\_\_

b. Where are acids found on the pH scale? \_\_\_\_\_

c. Where are bases found on the pH scale? \_\_\_\_\_

**At the bottom of the page, click on Biochemistry. Then click on Enzymes. (In the right margin.)**

26. What is an enzyme?

27. What is a substrate?

28. Draw a picture showing how an enzyme works.

29. What are the 4 steps for enzyme activity?

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

**Click on Enzyme Regulators.**

30. What are 4 facts that can control enzyme activity?

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_