

Name \_\_\_\_\_ Date \_\_\_\_\_ Hour \_\_\_\_\_

Physical Science

Guided Reading 16-1

Structure of the Atom

1. Define the following

a. Atom \_\_\_\_\_

\_\_\_\_\_

b. Nucleus \_\_\_\_\_

\_\_\_\_\_

c. Proton \_\_\_\_\_

\_\_\_\_\_

d. Neutron \_\_\_\_\_

\_\_\_\_\_

e. Electron \_\_\_\_\_

\_\_\_\_\_

f. Electron cloud \_\_\_\_\_

\_\_\_\_\_

2. What are chemical symbols? \_\_\_\_\_

\_\_\_\_\_

3. How do we write a chemical symbol? Look at table 1, give 3 examples of elements and their symbols.

\_\_\_\_\_

4. How are elements named? (3-different ways) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. What are the 3 subatomic particles that compose every atom? \_\_\_\_\_

\_\_\_\_\_

6. Complete the following chart about subatomic particles

	Locations within the atom	Charge
Proton		
Neutron		
Electron		

7. What are quarks? Which subatomic particles are made up of quarks? \_\_\_\_\_

\_\_\_\_\_

8. What did scientists do to study quarks? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

9. What do scientists use models for? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Why must we use a model to study the atom? What do scientist do to the model as new information is learned? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. Who first proposed the existence of atoms? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12. Examine figure 4, sketch each of the models proposed by Democritus, Thomson, Rutherford, and Bohr.

Democritus	Thomson
Rutherford	Bohr

13. By 1926, scientists had learned new information about electrons, explain the difference between the Bohr model and the electron cloud model. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

14. Identify the chemical symbols for the elements carbon, aluminum, hydrogen, oxygen, and sodium.  
\_\_\_\_\_

15. Identify the names, charges, and locations of the 3 subatomic particles that make up the atom.  
\_\_\_\_\_  
\_\_\_\_\_