

1. Define the following terms. Give examples wherever possible.

a. Matter

b. Atom

c. Element

d. Valence Shell

e. Valence Electron

f. Sub-Atomic Particle

2. Who came up with the "Four Element Theory"? What are the four elements?

3. Use the Four Element Theory to explain what makes substances different from one-another.
(ie. What makes wood different from say, gold.)

4. Who was the first person (hint: he's a Greek Philosopher) to come up with the idea of the atom? Why was his idea not accepted?

5. How are the Greek Philosophers and modern scientists different in the way they studied matter?

6. The alchemists were looking for 3 things. What were they?

7. We often think the Alchemists had crazy goals. So why are they important?

8. Fill in the table with respect to the models of the atom.

Model	Scientist	Main Points	Diagram
Billiard Ball			
Blueberry Muffin			
Nuclear			
Planetary			

9. Rows on the periodic table are called _____. The row number tells us the number of _____. Columns on the periodic table are called _____. The column number tells us the number of _____.

10. What is a sub-atomic particle?

11. Fill in the table:

	Proton	Electron	Neutron
Charge ((+, -, 0)			
Mass (heavy or light)			
Location			

12. Fill in the table with respect to the different families on the periodic table.

Column Number	Family Name	Number of Valence Electrons	Reactivity? (Very, Fairly, Not at all)
I (1)			
II (2)			
VI (6)			
VII (7)			
VIII (8)			

13. Which element is in a family of its own? Why do you think this is?

14. Fill in the table for the following elements:

Element	Number of Protons	Number of Electrons	Number of Neutrons
Cobalt (Co)			
Arsenic (As)			
Einsteinium (Es)			
Krypton (Kr)			

15. Draw Bohr diagrams for each of the following elements:

a. Boron

b. Aluminum

c. Beryllium

d. Sulphur