

Name: _____

Hour: _____ Date: _____

Chemistry: *Development of the Atomic Theory*

Directions: Fill in the blanks on the right with the information in the chart below.

Word List

atom	mass number
atomic number	multiple proportions
Bohr	neutron
Chadwick	nucleus
conservation of matter	Planck
Dalton	proton
definite proportions	Proust
electron	quantum
energy level	Rutherford
isotopes	subatomic particle
Lavoisier	Thomson

More than 2000 years ago, Greek philosophers proposed the existence of very small, indivisible particles, each of which was called a(n) __ (1) __. The theory that such particles existed was supported, much later, by __ (2) __, who proposed, in his law of __ (3) __, that matter cannot be created or destroyed. Then __ (4) __ proposed, in his law of __ (5) __, that the ratio of the masses of elements in any given compound is always the same. The law of __ (6) __, proposed soon after, states that the masses of one element that combine with a fixed mass of another element in different compounds are in simple, whole-number ratios. An atomic theory based on these laws was developed by __ (7) __.

It was later proposed that the atom was not indivisible, but is made up of smaller particles, each of which is called a(n) __ (8) __. These particles include the negatively-charged __ (9) __, discovered by __ (10) __; the positively-charged __ (11) __; and the uncharged __ (12) __, discovered by __ (13) __. The latter two particles are present in the __ (14) __, or center, of the atom, which was discovered by __ (15) __ in his gold foil experiment.

The number of positively-charged particles in an atom is called its __ (16) __. The sum of the positively-charged particles and the uncharged particles is called the __ (17) __ of the atom. Atoms that have the same number of positively-charged particles but different numbers of uncharged particles are called __ (18) __.

The Danish physicist __ (19) __ proposed a model of the atom in which the electrons orbit the nucleus without losing energy. He called each possible orbit a(n) __ (20) __. He based his theory, to some extent, on the work of __ (21) __, who proposed that light is made up of units of energy of a definite amount, each of which is called a(n) __ (22) __ of energy.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____