

Name _____ Pd. _____ Date: _____

Chemistry Webquest #1: Introduction to Atoms and Atomic Scientists

You must complete all 3 Parts !!

Directions - Part I– What is an Atom?

Click the following link: <http://www.qrg.northwestern.edu/projects/vss/docs/Propulsion/1-what-is-an-atom.html>

Read the top paragraph (only) and answer the following questions:


1. Everything in the universe (except energy) is made up of _____ .
2. Therefore everything in the universe is made up of _____ .
3. An atom itself is made up of three tiny kinds of particles called subatomic particles: _____ , _____ and _____ .
4. The protons and the neutrons make up the _____ called the nucleus.
5. The _____ fly around above the nucleus in a small cloud.
6. The electrons carry a _____ charge and the protons carry a _____ charge.
7. In a normal (neutral) atom the number of protons _____ the number of electrons.

Directions - Part II – A BRIEF History of the Atom

Click the following link: <http://www.timetoast.com/timelines/atomic-scientist>

Use the information in this web page to fill in your History of the Atom Timeline. *There are many additional scientists that contributed to the atomic model. I only expect you to know about six of them.*

History of the Atom Timeline

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Date:	400 BC		1897	1911		1930
						
Scientist:		John Dalton			Niels Bohr	

Directions - Part III– Models of the Atom

Democritus's model.- Click the following link: <https://the-history-of-the-atom.wikispaces.com/Democritus>

1. State the main idea of Democritus's model.

2. Draw your interpretation of Democritus' model of atoms.

Dalton's model - Click the following link: <http://www.iun.edu/~cpanhd/C101webnotes/composition/dalton.html>

1. What are the four parts to Dalton's Theory

- a. _____
- b. _____
- c. _____
- d. _____

2. Draw your interpretation of Dalton's' model of atoms.

Thomson's model - Click the following link: <https://sites.google.com/site/thomsonsexperiment/jj-thomson-s-atomic-model-and-theory> and https://www.youtube.com/watch?v=IdTxGJjA4Jw&feature=player_detailpage

1. What did JJ Thomson discover? _____
2. What was the name of the equipment (experiment) Thomson did? _____
3. What "name" is given his model _____ .
4. Describe his model in the space below.

5. Draw your interpretation of Thomson's model of atoms.

Rutherford's model - Click the following link: <http://physics.tutorvista.com/modern-physics/rutherford-s-gold-foil-experiment.html> and https://www.youtube.com/watch?v=kHaR2rsFNhg&feature=player_detailpage

1. What did Rutherford discover? _____
2. What experiment did Rutherford do? _____
3. Rutherford's Gold Foil Experiment showed:

- e. Most of the alpha particles passed straight through the gold foil without any deflection indicating that atom is mostly _____.
 - f. Some of the alpha particles were deflected by small angles indicating that atoms have a center called _____ that is _____ charged.
 - g. Occasionally, an alpha particle travels back from the foil indicating that nucleus has most of the atom's _____.
4. Complete this statement. Rutherford claimed that this also shows that the atom consists mostly of _____ and that all the _____ charge is not evenly spread throughout the atom but instead squished into a teeny tiny _____ in the _____ of the atom.
5. Draw your interpretation of Rutherford's model of atoms.

Bohr's model - Click the following link: <http://chemistry.about.com/od/atomicstructure/a/bohr-model.htm>

1. Describe the main points of Bohr's model proposed that electrons:
- a. _____
 - b. _____
 - c. _____
2. Draw your interpretation of Rutherford's model of atoms.

Quantum Mechanic, Electron Cloud, or Current Model - Click the following link: <http://www.regentsprep.org/regents/physics/phys05/catomodel/cloud.htm>

1. How is Quantum Mechanic model DIFFERENT from Bohr's? _____
- _____
3. Draw your interpretation of Quantum Mechanic model of atoms.

Note: This activity is a modification of Chemistry Webquest #1: Introduction to Atoms Worksheet retrieved at www.iroquoiscsd.org/cms/lib/NY19000365/.../Collage%20webquest.doc