

Webquest: Atomic Theories and Models

Answer these questions on your own, USING COMPLETE SENTENCES where appropriate (most of the questions, except tables and drawings).

Atom Basics: Go to: <http://www.chemtutor.com/struct.htm> and read the “And you thought you were strange” section to answer the following questions (put answers in the table).

1. What are the three subatomic particles that all atoms are made of?
2. Where are each of the three particles located within the atom?
3. What is the electrical charge of each particle?

1. The 3 subatomic particles	2. Location within the Atom	3. Electrical Charge

Early Ideas About Atoms: Go to <http://galileo.phys.virginia.edu/classes/252/atoms.html> and read the section on “Early Greek Ideas” in order to answer the following questions:

4. What was the “basic idea” about matter that Leucippus and Democritus proposed?
5. How did they use atoms to explain different physical properties?
6. How were the ideas of these two men received by Aristotle, and what was the result on the progress of atomic theory for the next 2,000 years?

John Dalton’s Atomic Theory: Go to <http://www.iun.edu/~cpanhd/C101webnotes/composition/dalton.html> and use the information there to answer the following questions:

7. When did Dalton form his Atomic Theory?
8. What are the four components of Dalton’s Atomic Theory?

J.J. Thomson and the Electron:

Go to <https://www.chemheritage.org/historical-profile/joseph-john-%E2%80%9Cj%E2%80%9D-thomson> and use the information there to answer the following questions:

9. What is the year in which J.J. Thomson discovered the electron?

10. What was the evidence for “bodies much smaller than atoms”?

11. What was the model of the atom he proposed in 1904?

Rutherford and Bohr Break the “Plum Pudding” Model: Go to

<http://www.pbs.org/wgbh/aso/databank/entries/dp13at.html> and use the information found there to answer the following questions:

12. What was the “plum pudding” model of the atom and its electrons?

13. How much smaller was the nucleus, than the atom itself, according to Rutherford?

14. How did Bohr modify this model of the atom (i.e. what was his “revolutionary idea” about electrons)?

Chadwick (and Rutherford) and the Neutron

Go to <http://www.pbs.org/wgbh/aso/databank/entries/dp32ne.html> and use the information found there to answer the following questions:

15. What makes up the atomic number?

16. What makes up the atomic mass?

17. What observation led Chadwick (and Rutherford) to conclude there must be something besides just the proton in the nucleus of atoms?

18. What is the something-besides-just-the proton called?