

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

Chemistry Guided Reading Chapter 4 Section 1 and 2 pgs 102-114

### Section 1

1. Early scientists lacked the tools and technology to devise controlled experiments about matter, what did they think matter was made up of?
2. What did Democritus propose about matter?
3. Why are the ideas of Democritus and Aristotle not considered “science”?
4. John Dalton largely agreed with Democritus’s ideas, what was Dalton able to do to support his ideas?
5. Examine Figure 3, what does this illustration tell us? Which law does it support?
6. Which parts of Dalton’s theory were incorrect?

### Section Review

7. Define atom in your own words.
8. Summarize Dalton’s atomic theory.

## Section 2

9. Define atom.
  
10. What do scientists today use to “see” and study atoms?
  
11. What two things did scientists learn about the rays produced by a cathode ray tube?
  
12. Which subatomic particle is J.J. Thomson given credit for discovering?
  
13. What important discovery was made by Robert Millikan?
  
14. Describe the model J.J Thomson proposed, include a sketch with your explanation.
  
15. Describe Rutherford’s model for the atom, include a sketch with your explanation.
  
16. What two conclusions did Rutherford make after his gold foil experiment?
  
17. Which subatomic particle did Rutherford define? What is the charge on this particle?
  
18. Who is given credit for discovery of the neutron? How does this particle compare to a proton?

19. Although we now know the existence of even smaller particles that make up protons and neutrons, which subatomic particle is really the most important and controls the behavior of matter?

#### Section Review

20. Summarize our modern day understanding of atomic structure. (describe what an atom is made of)