

Chapter 1 – Atomic theory explains the composition and behaviour of matter.

- **Online resources:** http://www.bcscience.com/bc9/pgs/links_u1.html (Check the fireworks display)
- **Remember** to ask your teacher whether your classroom has the lab equipment necessary to perform the lab Investigations and whether you must do them. If doing the labs isn't possible, you are still required to read and understand the material in those sections.

1. Why is this chapter important?

Section 1.1 - Safety in the Science Classroom.

1. Safe practice in the science lab includes knowing how to _____ and what to do _____.
2. You need to know safety rules _____ you start a science activity.
3. Accident rates for workers in British Columbia are highest for young and newly hired employees because _____.
4. What does WHMIS stand for?
5. Draw and label the 8 warning symbols used in the WHMIS system.

6. What other hazard symbols are used on products? Describe the borders and the hazards.

Section 1.2 - Investigating Matter.

7. Matter is anything that has _____. _____, _____, and _____ are the three states of matter. The _____ describes how changes in the _____ of particles can result in changes in _____. All materials have _____ you can _____. Pure substances can be classified as _____ or _____.
8. _____ is the amount of matter in a substance or object (often measured in _____).
9. _____ is the amount of space a substance or an object occupies (often measured in _____).
10. A _____ in matter occurs when substances combine to form new substances.
11. When physical changes occur, there may be a change in _____, but no new substances form.
12. Solid is the state of matter that has a definite _____ and _____.
13. Liquid is the state of matter that has definite _____, but its shape is determined by its _____.
14. Gas is the state of matter that has its _____ determined by the shape of its _____.
15. What is the difference between a scientific model and a scientific theory?

16. What are the four main points of the Particle Model of Matter?
17. Kinetic energy is the _____. Scientists have used the particle model to develop the _____ to explain what happens to matter when the kinetic energy of particles changes.
18. What are the main points of the Kinetic Molecular Theory?
19. The kinetic molecular theory helps explain _____, as well as the differences between _____.
20. Make your own sketch of Figure 1.10 - Changes of State from p. 21 of your text. **You will be tested on the information in this figure.**

Section 1.3 - Atomic Theory.

21. Atoms are composed of particles including _____, _____, and _____.
22. Atoms have a tiny, _____ charged, dense nucleus made up of _____.
23. Surrounding the nucleus are one or more _____.
24. A _____ atom has the same number of _____ as _____.
25. The number of protons in an atom is called the _____.
26. What are the four main principles of John Dalton's Atomic Theory?

27. What were the contributions to Atomic Theory associated with the following people?

J. J. Thompson

Ernest Rutherford

Niels Bohr

28. An _____ is the smallest particle of an element that retains the properties of the element.
29. All atoms are made up of three kinds of smaller particles called _____. They are called _____, _____, and _____.
30. _____ and _____ have much more mass than _____.

31. Fill in the missing information in the following table about subatomic particles. This is very important information to know!

NAME	SYMBOL	RELATIVE MASS	ELECTRIC CHARGE	LOCATION IN THE ATOM
Proton				
	n			
			-	

Key Terms (Vocabulary) to know in this Chapter.

Write a concise definition of each word or phrase.

Atom

Boiling point

Boiling

Condensation

Conductivity

Density

Deposition

Electric Charge

Element

Hazard symbol

Mass

Melting Point

Melting

Solidification

State

Subatomic particles

Sublimation

Volume

WHMIS