

## Guided Reading Chapter 16

1. \_\_\_\_\_ is anything that has mass and takes up space.
2. Who were the first philosophers to propose that atoms existed? What time period was this?
3. Who were some other scientists who contributed to the idea that atoms existed and what did they believe?
4. A(n) \_\_\_\_\_ is the smallest bit of matter that is pure and can't be broken down into any other smaller substance by physical or chemical means.  
  
a) atom                      b) element                      c) compound                      d) particle
5. A(n) \_\_\_\_\_ is the single smallest particle of an element that retains the chemical identity of that element.  
  
a) atom                      b) element                      c) compound                      d) particle
6. A compound is a substance that contains \_\_\_\_\_ or more different elements joined chemically, and has the same composition throughout.
7. What is a molecule?
8. Sketch the pictures of an element, compound, and mixture.
9. How is matter classified?
10. What is the difference between a heterogeneous and a homogeneous mixture?
11. What are the "phases of matter?"
12. Draw the molecular diagram of a solid. What is a solid?
13. Draw the molecular diagram of a liquid. What is a liquid?

14. Draw the molecular diagram of a gas. What is a gas?

15. When a solid changes directly to a gas it is called \_\_\_\_\_.

- a) condensation      b) evaporation      c) sublimation      d) freezing

16. At what temperature does matter break apart and change into plasma?

17. Complete the following table to demonstrate your knowledge of the different phases of matter.

Phase	Energy	Characteristics	Temperature	Intermolecular Force
Solid		Holds shape and doesn't flow		weakest
	Molecules move around			
Gas			high	strong
	Atoms break apart		highest	