

Unit 4 – Worksheet 3 – Atoms from Democritus to Dalton

Reading: “Matter: Atoms from Democritus to Dalton

Empedocles Time _____

1. Empedocles argued that all matter is composed of what four elements?
2. What was one of the problems with Empedocles’ theory?

Democritus Time _____

3. If you continued to cut a stone into smaller and smaller pieces, at some point you would reach a piece so tiny that it _____.
4. Democritus called these small pieces of matter *atomos*, meaning _____.
5. *Atomos* were _____ and could not be _____.
6. *Atomos* were _____ to the material that they made up.

Torricelli Time _____

7. Torricelli showed that air had _____ and so must be made of something physical.

Bernoulli Time _____

8. Air and other gases consist of _____ loosely packed in an empty volume of space.
9. Gas particles are continuously _____ and _____ off one another.

Priestly Time _____

10. Heated mercury calx breaks down into liquid mercury and a gas that he called _____ air.
11. Substances can _____ or _____ to form new substances with different properties.

Lavoisier **Time** _____

12. Renamed Priestley's gas _____, which means _____.
13. Conservation of _____ says that _____ is not _____ or _____ during a chemical reaction.

Dalton **Time** _____

Four main concepts:

14. All matter is composed of _____ particles called _____.
15. All atoms of a given element are _____; atoms of different elements have different _____.
16. Chemical reactions involve the _____ of atoms, not the _____ of atoms.
17. When elements react to form _____, they react in defined, whole-number _____.