

# Welcome to Chemistry!

**Chemistry is the study of matter and how matter changes.**

**Using your glossary, define these words:**

1. Matter:
2. Elements:
3. Atoms:

Remember that we cannot see atoms with our eyes!

Basic parts of an atom:

- A. Nucleus:
- B. Protons:
- C. Neutrons:
- D. Electrons:

- ♦ In an uncharged atom, the number of electrons **EQUALS** the number of protons. If an atom has 8 electrons it also has 8 protons.

- ♦ Go to P. 322 Scientists believe it is impossible to know both the \_\_\_\_\_ and the exact location of an electron at any given moment. The electron cloud is mostly \_\_\_\_\_.
- ♦ Electrons are arranged in the electron cloud in \_\_\_\_\_. *Level 1* can hold up to 2 electrons, *Level 2* can hold up to 8 electrons, and *Level 3* can hold up to 18 electrons.

Also on p.322: The modern model of the atom shows a nucleus which contains both protons and neutrons and that nucleus surrounded by the electron \_\_\_\_\_. Electrons are more likely to be found closer to the \_\_\_\_\_ than farther away. Electrons \_\_\_\_\_ move around the nucleus.  
Draw the modern model here:

BUT.... How did we get here?

Atomic Theory Timeline (start on p. 312)

1. Early ideas about matter (about 2000 years ago)

A. What did the Greek philosophers think all matter was made from?

B. Usually those ideas proposed by the philosophers with the greatest \_\_\_\_\_ were accepted by the public (and other philosophers)

- C. \_\_\_\_\_ (460 – 370 BC) challenged the popular idea of matter.
- a. believed that matter was made of small \_\_\_\_\_ objects that cannot be divided
  - b. called the objects \_\_\_\_\_ (where we get atom from)
  - c. also said different types of matter are made from different types of \_\_\_\_\_
  - d. also said that nothing is between the atoms but \_\_\_\_\_ space
  - e. No way to \_\_\_\_\_ his ideas, but they were very similar descriptions we use today
  - f. ideas did not conform to \_\_\_\_\_ opinion, could not be tested, so they were open to debate