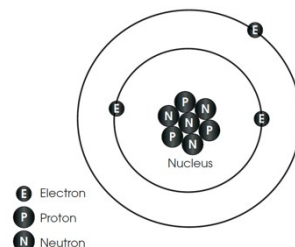
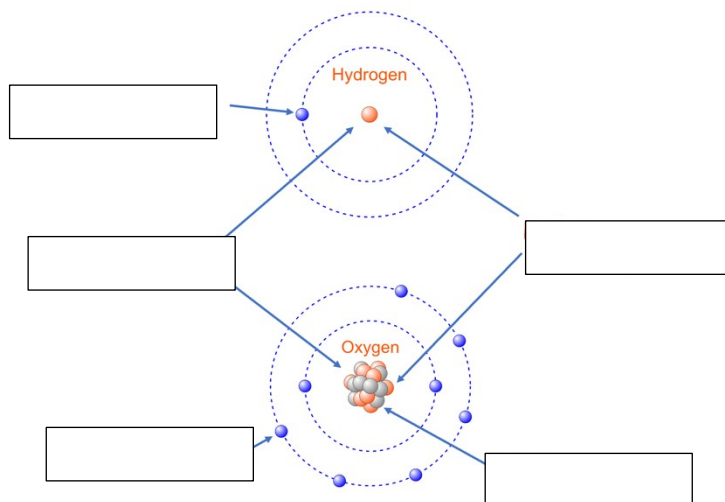


## Lesson 1.1 – Composition of Matter

- Matter is made of \_\_\_\_\_ that cannot be broken apart.
- Atoms are mostly \_\_\_\_\_ space, but inside atoms there are three kinds of particles:
  - \_\_\_\_\_ and \_\_\_\_\_ are in the nucleus of the atom.
  - \_\_\_\_\_ are outside the nucleus.

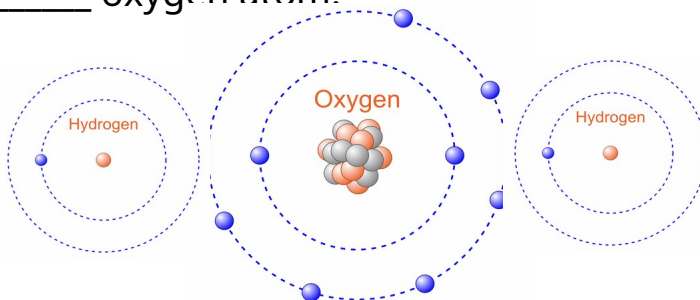


- Examples of atoms
  - Hydrogen
    - 1 proton
    - 0 neutrons
    - 1 electron
  - Oxygen
    - 8 protons
    - 8 neutrons
    - 8 electrons



- The \_\_\_\_\_ of an atom is almost all in the protons and neutrons in the nucleus.
- Electrons have a very \_\_\_\_\_ mass.
- The unit of mass is the \_\_\_\_\_.
- Protons have a \_\_\_\_\_ electric charge and electrons have a \_\_\_\_\_ electric charge.

- Neutrons have a \_\_\_\_\_ charge
- Two or more atoms attached together are a \_\_\_\_\_.
- The connections between atoms in a molecule are called \_\_\_\_\_.
- Example – a molecule of water ( $\text{H}_2\text{O}$ ) has \_\_\_\_\_ hydrogen atoms and \_\_\_\_\_ oxygen atom.



- The dimensions of matter are described as \_\_\_\_\_.
- The unit of length is the \_\_\_\_\_ (m).
- The flat surfaces of matter are described as surface \_\_\_\_\_.
- The unit of surface area is \_\_\_\_\_ ( $\text{m}^2$ ).
- The space matter occupies is described by its \_\_\_\_\_.
- The unit of volume is \_\_\_\_\_ ( $\text{m}^3$ ).
- 1 meter (m) = \_\_\_\_\_ centimeters (cm)
- 1 centimeter (cm) = \_\_\_\_\_ millimeters (mm)
- 1 meter (m) = \_\_\_\_\_ millimeters (mm)

- 1 kilometer (km) = \_\_\_\_\_ meters (m)
- 1 meter cubed ( $\text{m}^3$ ) = \_\_\_\_\_ liters (L)
- 1 liter (L) = \_\_\_\_\_ centimeters cubed ( $\text{cm}^3$ )
- 1 centimeter cubed ( $\text{cm}^3$ ) = \_\_\_\_\_ milliliter (mL)
- 1 liter (L) = \_\_\_\_\_ milliliters (mL)