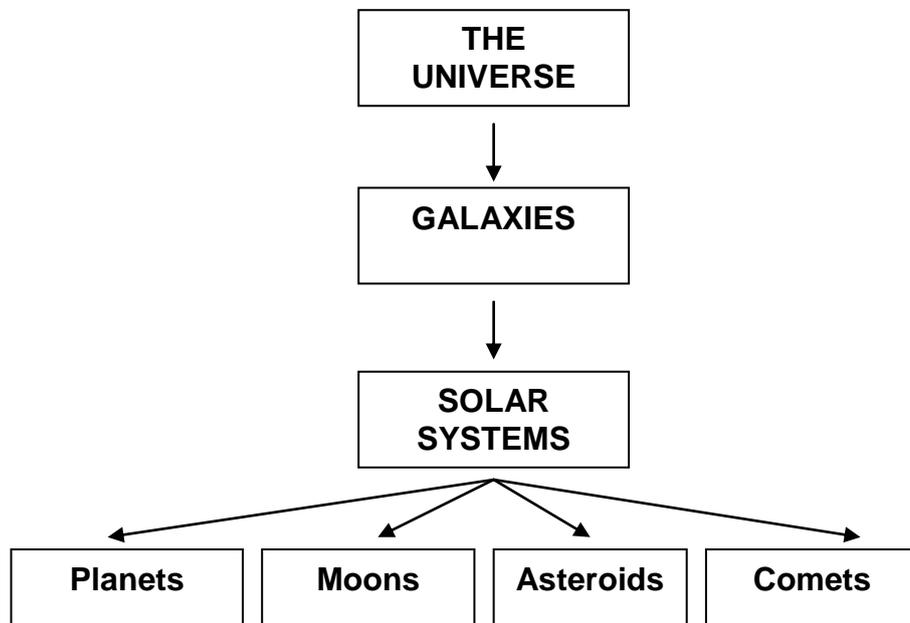


# The Universe



- ◆ Universe – The universe is all the heavenly bodies such as stars and \_\_\_\_\_ and the enormous space between them.
- ◆ Galaxy – Galaxies are collections of hundreds of \_\_\_\_\_ around a common centre.
- ◆ 3 Shapes of Galaxies
  1. I \_\_\_\_\_ Galaxy – overall globular shape
  2. E \_\_\_\_\_ Galaxy – egg- or oval-shaped
  3. S \_\_\_\_\_ Galaxy – spiral shape; most common form of galaxy; examples are our M \_\_\_\_\_ W \_\_\_\_\_ Galaxy and the A \_\_\_\_\_ Galaxy
- ◆ Solar System – A solar system is any star orbited by \_\_\_\_\_. Our solar system is our Sun orbited by the \_\_\_\_\_ planets from Mercury to Neptune.
- ◆ Planet - A planet is any body that does \_\_\_\_\_ produce its own light and revolves around a \_\_\_\_\_.

- ◆ Moon - A moon is a natural satellite that \_\_\_\_\_ around a planet.
- ◆ Asteroid - An asteroid is a celestial body made of rock that orbits the sun between Mars and J\_\_\_\_\_.
- ◆ Comet - A comet is a celestial body made of frozen rock and gas that revolves in an orbit around the sun. Its orbit is not the same as the \_\_\_\_\_. It has a nucleus and a hazy tail which always points away from the \_\_\_\_\_ because the tail is composed of evaporated gases heated by the sun.
- ◆ Light Year – A light year is a unit of astronomical measurement. It is the \_\_\_\_\_ light travels in one \_\_\_\_\_. A light year is equal to 9,461, 000,000,000 km.

### **THEORIES OF THE ORIGIN OF THE UNIVERSE**

- ◆ The universe is estimated to be between 7 and 20 billion years old. There are 2 main scientific theories about how the universe formed.
- ◆ B B Theory - This is the more widely accepted theory. It explains that the universe was formed from the gigantic explosion of a central large and dense mass. In the first few minutes after the big bang, many elements such as hydrogen and helium were formed. Other heavier elements were formed later in the nuclear fusion processes of the stars. The universe is expanding, as is shown by the Red Shift of many stars.  
(Red Shift is the spectrum showing longer wavelengths that form when stars are receding away from us.)
- ◆ S S Theory – This theory states that matter is continually being created at the outer parts of the universe, and is condensing into galaxies. It is not generally accepted now.