Notes - Classification and Taxonomy

- Scientists classify in biology for the same reason we stack plates in one cupboard and glasses in another.
  1.) We do it so we know where items are, based on similarities.
  2.) So, we can properly communicate with other scientists in one common language.

- Early scientists had difficulty conveying just what they meant to other scientists, until a Swedish scientist **Carolus Linnaeus** invented _____(two-part naming).
  Ex. – spotted skunk → *Spilogale putorius* (smelly spotted weasel).

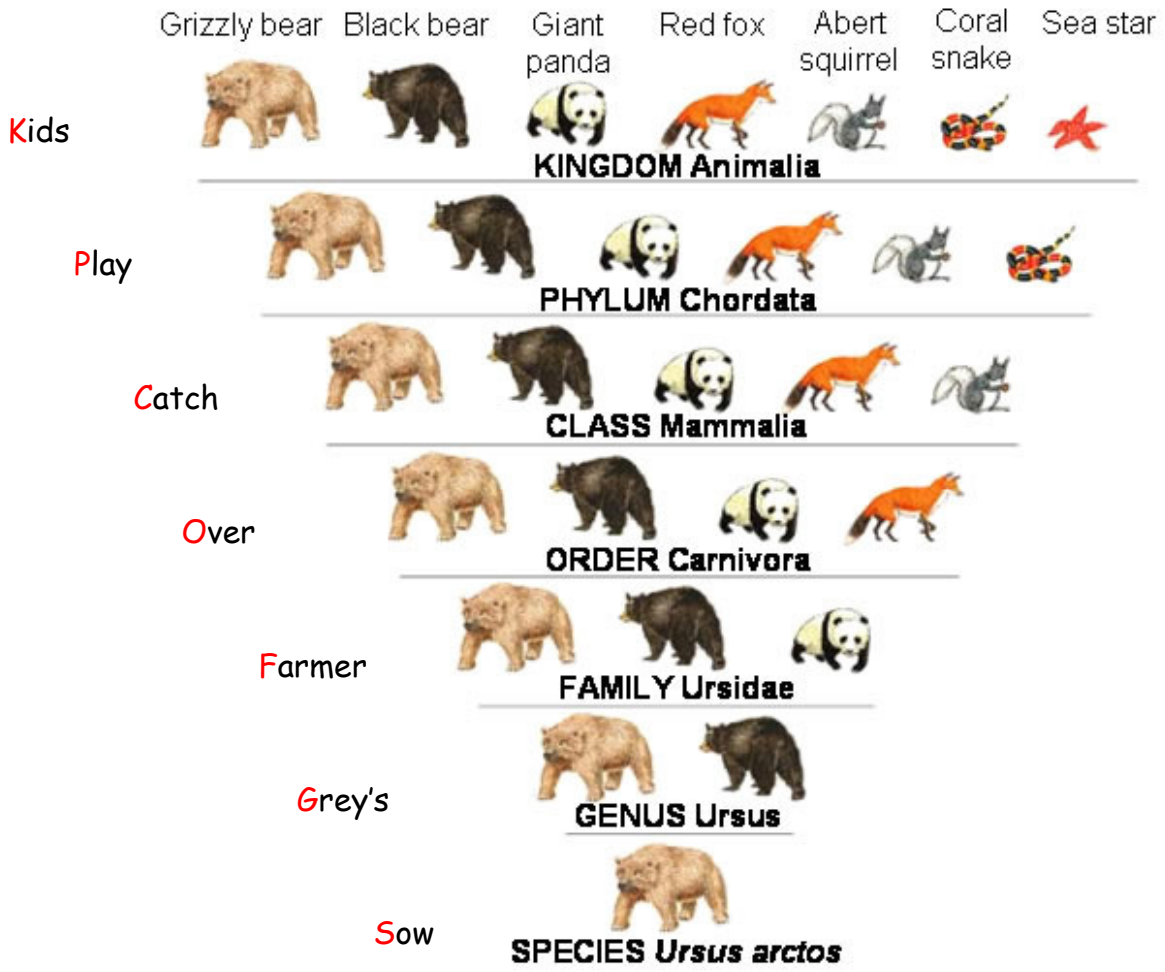
- Binomial nomenclature is based of mostly Latin and a little Greek for the names. The format of the wording is to always Capitalise genus and *italicise* or underline entire name.

- Once named we need that spot on the shelf to put them . . . . . so Linnaeus decided to group organisms by important structures. This is called taxonomy.

Handout – Classification of Life

- He started with general or common items and worked his way to more specialised/specific items.
  1.) _____– most general. Organisms fall into *animalia* or *plantae*.
  2.) _____ – second largest. Have birds, reptiles, mammals, fish, etc. All grouped together.
      Ex. - *chordata*.
  3.) _____ – larger grouping. Now broken down into groups.
      Ex. - mammals (warm blooded, hairy, milk)
  4.) _____ – larger subclass. Cats and carnivores grouped together with other carnivores.
      Ex. – *carnivora*.
  5.) _____ – same general groups but differences into sub categories.
      Ex. – all cats in one family *felidae*.
  6.) _____ – some similar characteristics, but unable to breed.
      Ex. – similar teeth, claws and feet, but lions and cheetah can't breed.
  7.) _____ – share similar characteristics **and** can breed.

- A good memory aid to remember taxonomy is "Kids Play Catch Over Farmer Grey's Sow".



- Changes have occurred to the rules for taxonomy. With new information on organisms being discovered all the time, the "important" characteristics definition has become muddied.

1.)

2.) Organisms that are closely related with each other have proteins that are more closely linked. One such protein is *cytochrome C*. Virtually all life uses this in energy transport. However, slight mutations cause small differences and it is these differences that help classify organisms.

3.) When Linnaeus began taxonomy there were only 2 kingdoms. We now have 6 kingdoms.

THE SIX KINGDOMS