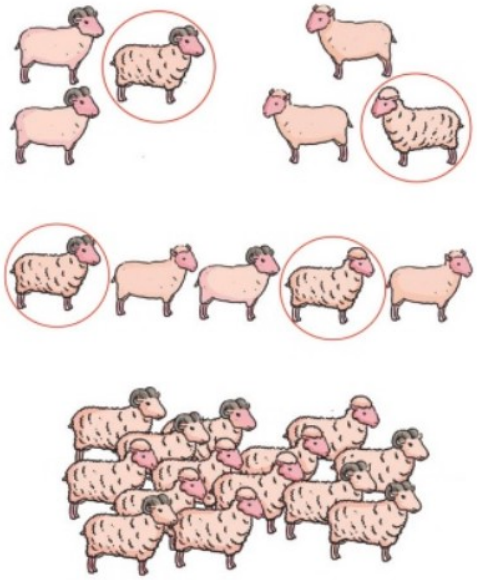
Name _____ Class _____ Date _____ /_____ /20_____

Selective Breeding

Selective Breeding is when the best, or most desirable characteristics of an organism (in many cases animals but can also be plants) are selected from specimens which are then bred together. The offspring ware likely to show the characteristics of the parents. This cycle is repeated over many generations.

Steps in Selective Breeding:

1. Choose a male and a female with the characteristics that you want to replicate.
2. Breed these two together to produce offspring
3. Select from the offspring the ones that show the best examples of the characteristics you want.
4. Breed these 'best' males and females
5. Repeat steps 3 - 4 over many generations
6. Eventually you will breed routinely organisms with the characteristics you want.



Advantages of Selective Breeding:

Selective Breeding enhances the species by breeding in the preferred characteristics, such as high milk and meat yield in cows, or fast runners in sporting dogs.

Disadvantages of Selective Breeding:

The 'gene pool' becomes limited as you 'breed out' unwanted genetic characteristics, this means that the descendant organisms (the offspring produced) do not differ much, ie: the 'variation' in the species is reduced as you choose which versions of a gene are passed on. This can lead to genetic disorders being inherited, such as hip dysplasia in Labrador dogs, and breathing issues in Pugs. Inbred dogs have a higher risk of inherited problems and lower life expectancy.

Also...useful genes may be 'bred out' which could be useful in the future, if say for example, a new disease develops which the genes you have lost may have had a resistance to this could mean that your selectively bred organisms may not be able to fight off the infection, they could become extinct.

Inbreeding - this is when siblings (brothers and sisters) are used for selective breeding, they will pass on the intended characteristics but may also pass on unintended characteristics such as genetic abnormalities. These issues could cause problems for the offspring and may in some cases shorten life expectancy.