

# Chapter 15

## Section 2

Scientists use differences in

Appearances and

Structures to group

organisms.

7-Taxa

Kingdom

Phylum

Class

Order

Family

Genus

Species

Answer this question in your notes.

How do scientists decide if organisms are the same species?

In 1942 Ernst Mayr proposed the biological species concept .

It states that a biological species is a group of actually or potentially interbreeding natural population that are reproductively isolated from other such groups.

What does this mean?

Reproductive isolation occurs when a barrier separates groups.

Sometimes these barriers are not complete so we get hybrid.

Can you think of a hybrid animal?

A wolf and a hybrid can mate and create a fertile dog-wolf.

Asian elephants and African elephants do not interbreed. They are separate species.

The biological species concept fails when referring to organisms that reproduces as exvally

Modern biologists  
recognize species by  
Studying their features.

Only about 1.5 million~~s~~ species have  
been described, but there are an  
estimated 6 million species in the  
tropics (only 500, 000 have been  
described.)

Convergent Evolution-  
organisms evolve similar  
features independantly often  
because they live in similar  
habitat.  
i.e.: wings of birds and wings  
of insects.

Analogous characters- similar features that evolve through Convergent evolution.

Phylogeny- the evolutionary history of a species

Cladistics- a system of  
taxonomy that  
reconstructs  
phylogenies by inferring  
relationships based on  
similarities.