Chapter 15
Section 2

Scientists use differences in Apperance and Structures to group organisms.

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 stakes that a biological species is a group of actually or potentiating 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?

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

The biological species concept fails when referring to organisms that reproduces asexually.

Modern biologists recognize species by studying their features.

Only about 1.5 millions species have been described, but there are an estimated 4e million species in the tropics (only 500, 000 have been described.)

Convergent Evolution- organisms evolve similar features independantly often because they live in similar habitats.
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.

Derived Traits- unique charcterisitcs.

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