

Chapter 15

Section 2

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Scientists use differences in
Appearance and
structure to group
organisms.

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Answer this question in your notes.

How do scientists decide if organisms are the same species?

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In 1942 Ernst Mayr proposed the biological species concept .

It ~~states~~ ^{states} 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?

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Reproductive isolation occurs when a barrier separates groups. Ocean river

Sometimes these barriers are not complete so we get hybrid.

Can you think of a hybrid animal?
wolf-dog

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

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

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Modern biologists
recognize species by
studying their features.

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

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

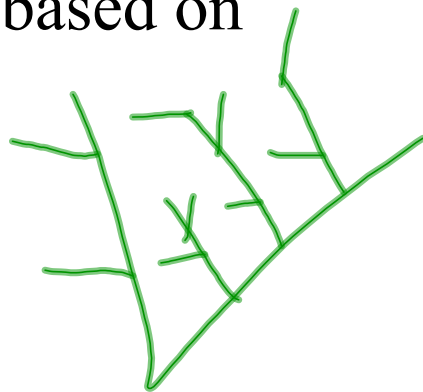
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Analogous characters- similar features that evolve through convergent evolution.

Phylogeny- the evolutionary history of a species

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



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Derived Traits- unique
characteristics.

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