

Evidence of Evolution (macroevolution) new species formed

Type of Evidence	Descriptions and Examples of Evidence
The Fossil Record	detailed record of evolution fossils in different layers of rock evidence of gradual change over time can age fossils - determine relative & absolute
Comparative Anatomy	homologous structures - similar anatomies across different species } help group animals w/ how different mature forms but develop from same embryonic tissue } recently shared ancestor vestigial organs - organs reduced in size, no longer used (vestiges of homologous structures) ex: human tailbone, appendix, some snakes pelvic bones
Geographical Distribution	different species in similar environments similar species related to common mainland ancestor (for islands) when combined w/ knowledge of plate tectonics, fossils provide evidence of distribution
Embryonic Development	early stages of embryos w/ backbones so similar difficult to distinguish embryonic cells develop in same order in similar patterns (homologous) pattern mirrors evolutionary transitions
Genetic Similarities	same complex biochemical compounds universality of cytochrome C - respiration blood proteins amino acid sequencing - more similar = more closely related closely related species have similar gene sequences