

How do species change over time?

Part 1: Basics of Evolution

- Define the following terms:
 - Species → **A group of organisms that evolved together and are genetically similar enough that they can _____ and produce fertile _____.**
 - Adaptation → **A specific physical _____ or _____ behavior that has evolved within a species to help it survive in its _____.**
 - Micro-evolution → **Evolution _____ over several generations.**
 - Macro-evolution → **Long term evolution over thousands of _____ or more, leading to the development of new species (this is also called _____).**
- It is possible for a horse to breed with a donkey. The resulting offspring is a mule, which cannot reproduce offspring of its own. Are horses and donkeys part of the same species? Why or why not?

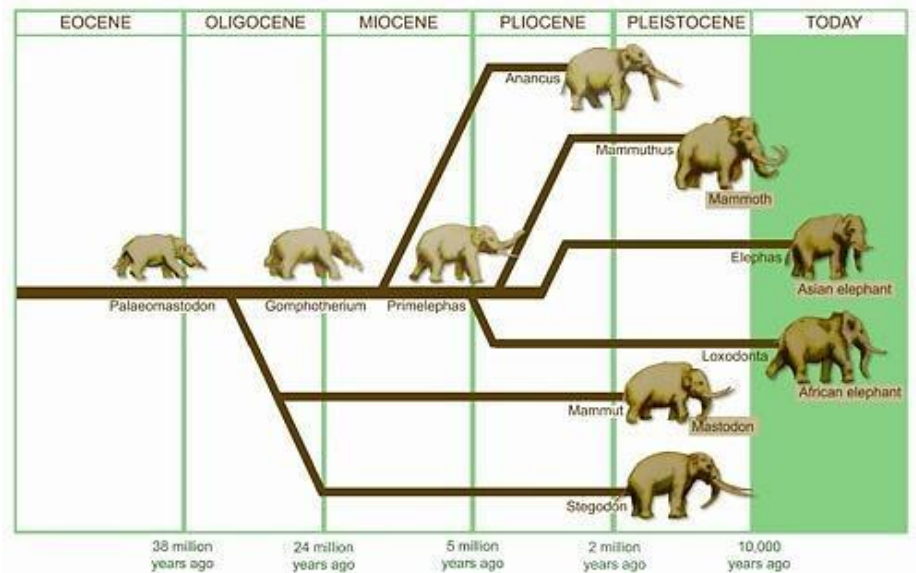
Part 2: The Tree of Life

- List the 7 levels of classification:
 - 1)
 - 2)
 - 3)
 - 4)
 - 5)
 - 6)
 - 7)
- Outer twigs represent _____.
- Kingdoms or phyla represented by the _____ of the tree.
- Splitting branches show _____.
- Closely related species branched off from each other _____.
- Distantly related species branched off much closer to the _____.
- All the species share a common ancestor at the _____ of the tree.



Part 3: Elephant Evolution

- 1) How many species of elephant are around today?
- 2) How many years ago did the two species split (when did their common ancestor exist)?
- 3) Look at the 6 main branches on this tree. Which species is the Asian elephant most related to?



Part 4: Evolutionary Relatives

- 4) Organisms with similar characteristics must also have similar _____.
- 5) In what way are a **pig, chicken, frog, alligator, shark, monkey, platypus, and goldfish** all related to a **cow**?
- 6) Compared to a cow, list these 8 animals in order from most closely related to most distantly related.

CLADOGRAM:

In the space below, create an evolutionary family tree (cladogram) for the cow, including the other 8 organisms. The cow's closest relatives should branch off from the cow recently (towards the top) and its distant relatives should branch off in the distant past (towards the bottom).