

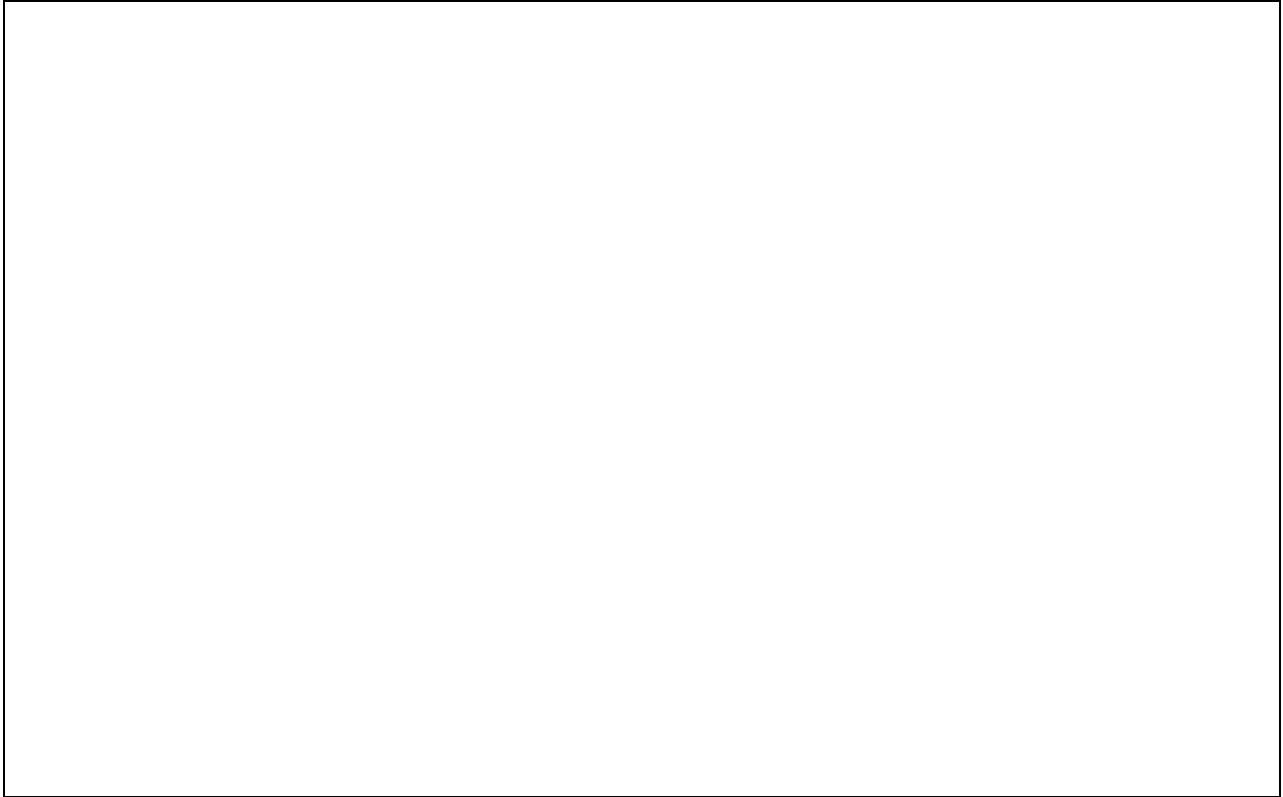
## PHYLOGENY AND SYSTEMATICS

PHYLOGENY	SYSTEMATICS

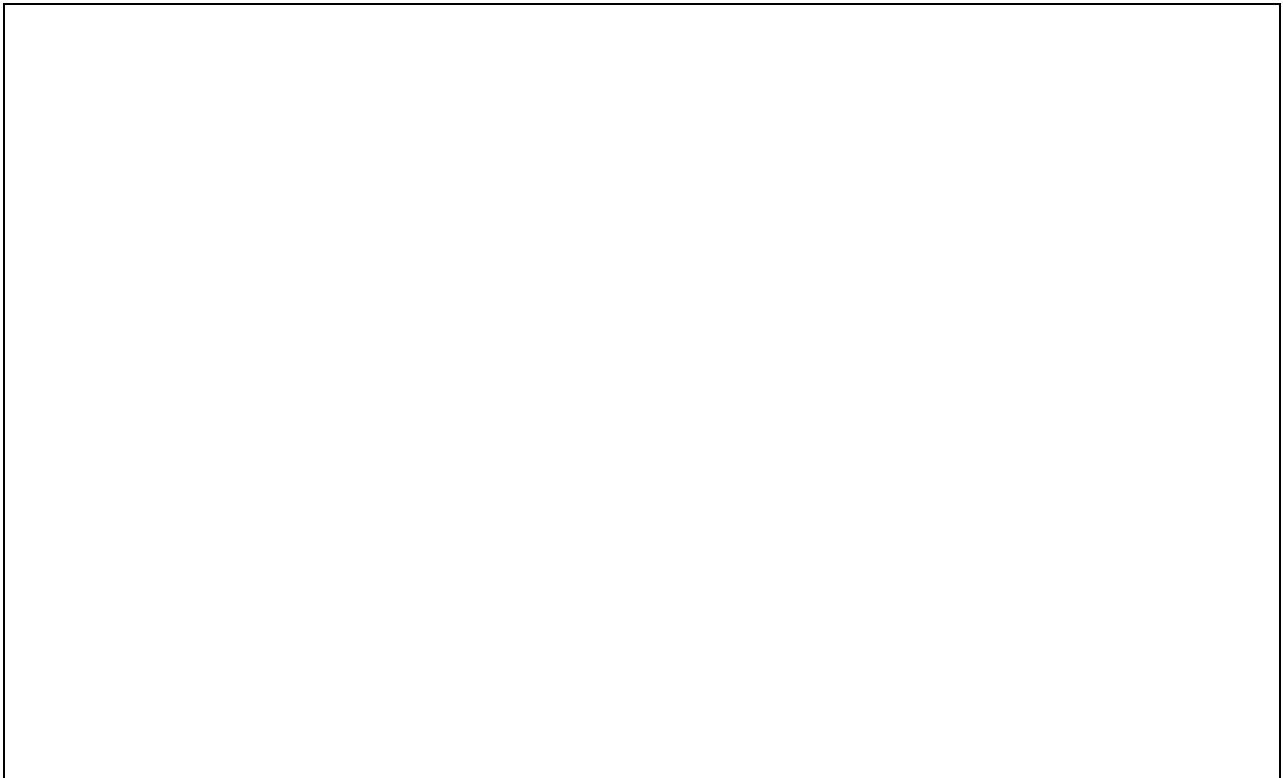
### TAXONOMY

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## **PHYLOGENETIC TREE**



## **MOLECULAR BIOLOGY**





2. Who developed the hierarchy of classification that is still used today?

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3. What is the goal of systematics: \_\_\_\_\_

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4. List the major taxonomic categories from most to least inclusive.

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5. Indicate if each of the following statements is true of **H**omologous structures or **A**nalogous structures.

\_\_\_\_\_ Similar structure

\_\_\_\_\_ Indicates common ancestry

\_\_\_\_\_ Similar function but different structure

\_\_\_\_\_ Forelimbs of a bird and human

\_\_\_\_\_ Wing of a bird and wing of an insect

\_\_\_\_\_ Eye of a bird and eye of a squid

6. The wings of a butterfly and the wings of a bird are both adapted for flight. Does this mean that these two organisms are closely related? Explain.

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7. Match the process with the correct description.

A. DNA-RNA Sequencing

B. DNA-DNA Hybridization

C. Molecular Clocks

D. PCR

E. Protein Comparison

F. RFLP Analysis

\_\_\_\_\_ Comparison of the amino acid sequence in proteins common to several different species

\_\_\_\_\_ Measures the extent of hydrogen bonding between single-stranded DNA from two different sources; can estimate overall similarities of two genomes

\_\_\_\_\_ DNA digested with restriction enzymes; resulting fragments subjected to gel electrophoresis; pattern of bands produced compared with other patterns

\_\_\_\_\_ Produces many clones of a small sample of DNA

\_\_\_\_\_ Determination of the sequence of nucleotides in a segment of DNA or RNA

\_\_\_\_\_ Process that uses the rate of mutation of nucleic acids to determine a relative measure of time that elapsed since the two lineages being compared branched

8. What are the differences between phenetics and cladistics?

<b>PHENETICS</b>	<b>CLADISTICS</b>