How is life classified today?
• **Taxonomy**: grouping life __________ to __________
  – not just __________ anymore
• **Phylogeny**: __________ history of an __________
• **Morphology**: studying the __________ and __________ of organisms
  – Comparing the morphology (__________) of ________ species shows ________
    and/or __________
  – Morphology shows ________ - relationships also!

• **Homologous structures**: body parts that have a similar __________, but different __________
  – ________ homologous structures of ________ organisms can show ________
  – Conclusion: __________ structures shows __________

• **Biochemical evidence**
  – Comparing __________, RNA, __________, & __________
  – ________ and ________ can be found
• ________ mutates at __________ rates
  – ________ time that has passed = __________
  – Conclusion: Organisms with similar __________ are more ________ related

• **Chromosome Evidence**
  – ________ of different species are examined for __________ and __________
    (__________, shape, gene sequence)
  – Conclusion: __________ organisms have ________ similarities

• **Embryo Development**
  – ________ (ball of cells) forms ________ in development
  – ________ (small indentation) begins to form ________ system
  – ________ develops into the ________ of some animals and ________ of others
  – Conclusion: __________ development indicates __________
Cladograms
- Defined: __________ diagram used to ____________ evolutionary ________________
  - Try to ________________ life ________________ to ________________ traits
- Shows ________________
- Q: List 2 characteristics of a salamander. ________________
- Q: From the diagram, which organism is most closely related to the chimp? ________________

Cladogram Practice
1) What does an amphibian & crocodile have in common? ________________
2) List the traits of a ray-finned fish: ________________

Review
1) What is morphology and how can it be used to help classify organisms? ________________
2) What are homologous structures and how is it used to help classification? ________________
3) How can molecular evidence like DNA and chromosomes be used to classify life? ________________
4) What do the dashes on a cladogram represent? ________________
5) What does it mean if two different organisms develop along similar pattern? Different patterns? ________________

Examine the cladogram to answer the questions below:
6) List the traits of organism 4: ________________
7) What does organism 2 and 5 have in common? ________________
8) Which trait separates organism 1 from the rest? ________________