

**Cladogram Exercise**

For homework, on the right hand side of the cladogram on the following page, label the appropriate brackets to indicate which animals belong in the following groups:

Amniotes  
Anamniotes  
Agnathans  
Craniates  
Chordates  
Chondrichthyes  
Gnathostomes  
Osteichthyes  
Synapsids  
Sauropsids  
Teleostomi  
Tetrapods  
Vertebrates

Then mark in where the following major events in vertebrate evolution occurred:

- 1) Evolution of a "Brain" and Cranium
- 2) Evolution of a Muscular Suction Pump
- 3) Evolution of a Vertebral Column
- 4a) Evolution of Jaws and Paired Fins
- 4b) Perfection of Jaws
- 5) Development of a Bony Skeleton
- 6) Evolution of Fleshy Fins
- 7) Transition from Water to Land (Gills - Lungs)
- 8a) Evolution of Limbs from Fins
- 8b) Strengthening of the Vertebral Column
- 9) Formation of a non-Aquatic Egg
- 10) Perfection of the Temporal Muscles
- 11) Evolution of Endothermy
- 12) Evolution of Hair and Mammary Glands
- 13) Perfection of the Middle Ear
- 14) Development of the Placenta

