

## Evolution of Whales

### Assignment:

Outline the evolution of whales from land dwelling animals to aquatic beasts. This is a good opportunity for you to refresh your understanding of the concept of "Descent with Modification." Rather than an essay, you should produce a detailed outline of the major modifications that occurred during this transition, such as hearing, propulsion, shape, limbs, and several others. A drawing or two may help, and it may help to think backwards.

Outline format. Place in order of appearance.

Start with Pakicetidae and end with Mysticeti and Odontoceti

For each species

1. Describe (One or two lines)
2. Anatomic modification for living in the aquatic environment
3. Environment
4. Time Range

Read: Your book, the following two articles (on WebCT), and look at this excellent Internet resource.

Thewissen, G. M., E. M. Williams, E. M., L. J. Roe L. T. and Hussain, S.T.  
2001. Skeletons of terrestrial cetaceans and the relationship of  
whales to artiodactyls. NATURE 413: 277-280.

Wong, K. 2002. Mammals That Conquered the Seas. SCIENTIFIC  
AMERICAN 70-80.

Internet resource:

[http://www.neoucom.edu/DEPTS/ANAT/Thewissen/whale\\_origins/index.html](http://www.neoucom.edu/DEPTS/ANAT/Thewissen/whale_origins/index.html)