



Field Trip Assignment: *American Museum of Natural History*

This is an optional, extra-credit assignment that can be applied to either your *Classwork* or *Homework* grades. The trip is self-guided and you can go anytime before the assignment is due. To receive full credit for the assignment, you must submit your museum ticket to your instructor.

Museum Address: 79th Street and Central Park West (**B** or **C** train to 81st Street)
Information on hours of operation can be found at: <http://www.amnh.org/>

Admission: You need to pay something, but keep in mind that the museum admission is a suggested donation. You tell them what you want to pay. \$1 is fine.

Location: Any relevant exhibit in the museum, but you will find the most fruitful displays in the *Entire Fourth Floor (Fossil History of Vertebrates), Spitzer Hall of Human Origins, Hall of Biodiversity, North American Mammals, North American Forests, Asian Mammals, Akeley Hall of African Mammals, Primates, Sanford Hall of North American Birds, and Reptiles and Amphibians.*

The Assignment:

This is an “evolution scavenger hunt”. Your goal is to find displays at the museum that represent particular evolutionary concepts and to explain how each display is relevant to our understanding of evolution. For each “item” on the scavenger hunt that you find, you must:

- Record the location of the display in the museum (what hall?, where in the hall?).
- Depict and describe the display (what does the display look like? what is on display?).
- Answer the relevant question(s) listed below for this “item”.

In order to get full credit for the assignment, you must find ***at least*** ten (10) out of the thirteen (13) items listed below. You can only use each display for one of the “items” below, so think carefully about how to maximize the value of each display you visit. If you “find” more than ten “items”, your best ten finds will contribute to your grade (which means that including additional finds acts as a kind of insurance against inadvertent errors).

Items to find:

1. **Adaptation to an Aquatic Environment:** Find an example of a trait or set of traits designed for survival and/or reproduction in an aquatic environment. How does this trait make this organism more fit in its environment? How would natural selection have produced this trait?
2. **Adaptation to a Terrestrial Environment:** Find an example of a trait or set of traits designed for survival and/or reproduction in a terrestrial environment. How does this trait make this organism more fit in its environment? How would natural selection have produced this trait?
3. **Adaptation in a Non-animal:** Find an example of a trait or set of traits designed for survival and/or reproduction of an organism that is not an animal. How does this trait make this organism more fit in its environment? How would natural selection have produced this trait?
4. **Closely related species:** Find a pair of closely-related species. What evidence indicates that these species are closely related? What traits do they share as a result of having a very recent common ancestor?

5. **Sexually-selected trait:** Find an organism displaying a trait that is probably the result of sexual selection. What makes this trait likely to be the product of sexual selection? Why would other forms of selection be unlikely to produce this trait?
6. **Convergent evolution:** Find a pair of organisms that appear to be the product of convergent evolution. What features of these organisms suggest that they are a good example of convergent evolution? How do we know that the trait that they share is not ancestral?
7. **Divergent evolution:** Find a pair of organisms that appear to be the product of divergent evolution. What features of these organisms suggest that they are a good example of divergent evolution? What trait has been modified since divergence from a common ancestor?
8. **Transition fossil:** Find a fossil that represents a critical “transition species” or “missing link” in the tree of life. What features of this fossil suggest that it is a “transition species”? What evolutionary transition does this species help to explain?
9. **Evolutionary radiation:** Find an example of an evolutionary radiation among a particular group of related organisms. What innovative traits allowed for the radiation of this group? In what ways has the diversity of the group increased as a result of radiation?
10. **Extinct Species:** Find an example of an extinct species. When did this species live and how do we know what kind of lifestyle it had? Why did this species go extinct?
11. **Mass Extinction:** Find an example of a mass extinction event. When did this mass extinction occur? What evidence suggests a reason for the mass extinction?
12. **Coevolution:** Find an example of two coevolved species. What kind of interaction has fueled the coevolution of these two species? What evidence suggests they have coevolved?
13. **Product of cultural evolution:** Find an object or practice that seems to be the result of cultural evolution. In what ways is this cultural product an adaptation? What processes might have produced this adaptation?

Composition of the assignment:

Please compose (and organize!!) your assignment in a word processing or page layout program. Although you have a good deal of freedom to present your work as you like, make sure to indicate clearly how each of the displays you discuss matches up to one of the “items” above (please list the item number!). To receive full credit, you need to provide complete information for each of the displays you describe.

Helpful hints in completing the assignment:

- Although you are welcome to use words and/or drawings to depict and describe each display, a digital camera is a wonderful tool for capturing an image of the display itself. These photos can easily be incorporated into your assignment. Similarly, drawings can be scanned and inserted into your assignment. Make sure to edit your photos or scans so that they are not too large: you should not be submitting a project that is over 5 MB in size!
- There are several resources at the museum that might help you as you complete your “scavenger hunt”. First, there are volunteers (wearing red vests) who are often available in each exhibit to explain displays and help you locate particular displays. Second, there are information booths located on almost all floors.

Submission of this assignment:

This assignment is due on Monday, **May 11th, 2015** at 11:59 pm. Submission will be strictly electronic via the *Learning Management System*. All assignments must be typed and must be submitted in Adobe PDF format. There is a 10% penalty per day of lateness.



Don't forget to submit your AMNH ticket to your instructor on or before the May 11th deadline!

