Phylogenetics Organ System Project

**Webpage:**  http://zanniedallara.weebly.com/phylogenetics---development-of-an-organ-system.html

**Goal**: *Track the Development of an Organ System Through the Animal Phyla*

**Information**:

* Create a paper that traces the development of the organ system through all the Phyla.
* Paper should be around 10 pages
* Explain the development of the organ system in each phyla.

**Requirements:**

* Figure for each phyla
* References Cited (in bibliography and in text)
  + 5 minimum

**Steps**:

1. ***Pick an organ system***

* **Circulatory**: Move oxygen and nutrients around the body and transports waste out.
* [**Digestive System**](http://biology.about.com/library/organs/bldigestoverview.htm)**:** breaks down food [polymers](http://biology.about.com/od/molecularbiology/ss/polymers.htm) into smaller molecules to provide energy for the body. **Combine with** [**Urinary/Excretory Systems**](http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookEXCRET.html): removes wastes and maintains water balance in the body
* [**Integumentary System**](http://biology.about.com/od/organsystems/ss/integumentary_system.htm)**:** protects the internal structures of the body from damage, prevents dehydration, stores fat and produces vitamines and hormones.
* [**Muscular System**](http://www.ultranet.com/~jkimball/BiologyPages/M/Muscles.html)**:** enables movement of the body.
* [**Nervous System**](http://biology.about.com/od/organsystems/ss/central-nervous-system.htm)**:** monitors and coordinates internal organ function and responds to changes in the external environment.
* [**Reproductive System**](http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookREPROD.html#Human%20Reproduction%20and%20Developm)**:** enables the production of offspring through [sexual reproduction](http://biology.about.com/od/basicgenetics/a/aa062708a.htm).
* [**Respiratory System**](http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookRESPSYS.html#The%20Human%20Respiratory%20System)**:** provides the body with oxygen via gas exchange between air from the outside environment and gases in the blood.
* [**Skeletal System**](http://emuseum.mnsu.edu/biology/humananatomy/skeletal/skeletalsystem.html)**:** supports and protects the body while giving it shape and form.

1. ***The Paper:*** Create a paper that traces the development of the organ system through all the Phyla.

* Paper should be around 10 pages
* Explain the development of the organ system in each phyla.
* If the Organ System is absent in the organ system explain why they don't need the system or what they do instead. Explain why each phyla does or does not have the system

***Possible Paper Outline:***

* **Introduction**:
  + Introduce animals and what they have in common
    - 5 animal characteristics
  + Introduce the function of organ systems
  + Introduce the organ system of focus
    - Explain the main function of the organ system
  + Introduce how evolution works
    - Changes in organisms are created by mutations that change the DNA slightly
  + Introduce the various animal phyla
* **A paragraph on each of the phyla:**
  + The Phyla:
    - * + Sponges
        + Cnidarians
        + Worms (Platyhelmenthes, Nemadoes, Annelids)
        + Molluscs
        + Arthropods
        + Enchinodermata
        + Chordates
  + Introduce each phylums scientific and common names
  + Include what key organisms are in each phyla
  + Where they live and what they do (how they interact in/with their environment)
  + The key characters for each phyla (use the cladogram to identify)
  + Unique character of the phyla
  + Research on how the organ system works in that why and why.
* **Conclusion** 
  + Explain that evolution happens in small steps
  + Changes in organisms are created by mutations that change the DNA slightly
  + Summarize steps: Give a rough outline of the evolution of the system
  + Importance of organ system to all animals
  + Why evolve this system