2019/2020
Trimester 3
Zoology B Final Project

Objective -- Demonstrate an understanding of the differences and similarities of invertebrates (animals with no backbone) and vertebrates (animals with a backbone). Also, demonstrate your ability to research, summarize, and explain the unique characteristics of one class of animals belonging to subphylum vertebrata.

Assignment -- This project will include two items that will need to be turned in to be graded.

First: a 1-1 ½ page research paper. This needs to be written in a format that's typical of any research paper (sentences and paragraphs, NOT bullet points and incomplete sentences). The paper needs to include the following:

- Define what an invertebrate is. Give several examples of common invertebrates. How many different species of invertebrates are there? Briefly discuss where some common invertebrates live, how they eat, how large (or small) they are, etc.... Include any interesting facts you might find or useful information in helping describe invertebrates.
- Define what a vertebrate is. Give several examples of common vertebrates. How many different species of vertebrates are there? What do they eat, where do they live, what are their sizes? Include any interesting facts you might find about vertebrates.
- For the next part of the paper, you need to choose one of the following classes of vertebrates to research:
    - Chondrichthyes
    - Osteichthyes
    - Amphibia
    - Reptilia
    - Aves
    - Mammalia
- For the particular class of vertebrates you've chosen, describe the following information:
    - How many different species are there?
    - Where do typical species of this class live on the earth?
        - Are they found all over the planet or are they suited to particular habitats?
    - What are the size ranges found among the species of this class?
    - What do they eat?
        - Do they have any unique adaptations that they've evolved to be able to more successfully find food?
    - Describe general body characteristics:
        - Do they have legs? How many?
        - Do they have internal or external ears?
        - As adults, do they have a tail?
        - Describe their senses: eyesight, smell, touch.
            - Any unique sensory abilities?
    - In general, how do species in this class reproduce (internal fertilization vs. external fertilization, live birth vs. lays eggs, monoecious vs. dioecious, etc…)?
    - Any other facts that help describe this class, its habitats, and what makes it unique.

These are the minimum requirements for the first part of the assignment (the written/research component).

Second: Now choose a particular species of animal that belongs to the class of animals you chose. Choose an animal that's a fairly commonly known animal, one that would be a good example of an animal that could be easily studied in a scientific way. For this animal you need to construct some sort of poster, model, or display in which you will show the major anatomical structures of this animal (both internal and external).

For the internal anatomy, you need to identify the following structures (you can identify more than what is on this list, but you need to show at least these structures): location of mouth, stomach, liver (or other similar digestive glands/organs), kidney(s), heart, lungs (or gills or other respiratory structures), intestines, and anus.

For the external anatomy, you need to identify the following structures (again, you can identify more than what is on this list, but you need to show at least these structures): sensory appendages (eyes, ears, nose, or other similar structures), appendages for movement (arms, legs, fins, tail, etc…), protective structures (shell, scales, fangs, stingers, etc…).

Your poster, model, or display needs to be large enough that structures can be clearly seen and identified.

If you have an idea for a different way to present the anatomy of your animal, please feel free to ask me if it's okay to try! Be creative!

Grading: Your grade for Zoology B us based entirely upon this assignment. For all of your classes this trimester (Zoology B included), you'll either receive a "P" or an "I" (instead of one of the other traditional letter grades). In a recent email from our superintendent, Mr. Kress, to all students, parents, and teachers, he outlined why this is necessary and how grading will occur for the 3rd trimester as follows: *"Without having students in school, there is no way we can assure equal access to support and equal opportunity for success. The only way we can address proper grading is to issue a "P" for PROFICIENT mastery, and an "I" for INCOMPLETE mastery… Once a student has completed and turned in the tasks/projects, the student will receive a "P" for passing the class."*

This assignment is due NO LATER than June 4. However, it can be turned in any time between now and June 4. That means if you work hard and get the project and report done and turned in, then you're basically done with Zoology B and are free to spend time working on other classes . Still, if you complete the assignment and would like to have additional, ungraded enrichment work to complete, I'd be happy to provide that for you at that time.

The written (research paper) part of the assignment can be submitted in one of several ways. You can type it and send it to me in an email. You can type it and turn it in at the main office at BHS, or you can write the paper the good old fashioned way (pen and paper) and turn it in at the office at BHS. The project/display/model will need to be turned in at the main office at BHS. If you are unable to do this, please contact me to make other arrangements to turn in this part of the assignment.

Please feel free to contact me with any questions or concerns you may have. I'd be happy to work with you in any way I can to help you be successful in completing the requirements for this assignment. I can be reached by email at: neffj@d55.k12.id.us, or you can call BHS and leave a message for me to call you and the office staff will forward the message to me.