Create your own animal (Time=7-10 days)

Concept: The diversity of organisms on Earth is staggering. However, organisms have an important characteristic or characteristics, the ability to survive in a particular environment. In order to survive, each must have certain adaptations in terms of anatomy and behavior that are suited to the environment.

Standards: Biological Evolution, Interdependence of organisms, Behavior of organisms

Goal: The students should gain understanding of how individual organisms adapt and relate to an environment. By picking a real biome and environment, the "animal" that the students create needs to match all of its life systems to a particular area.

Specific objectives:
1. Design a hypothetical animal that could live in a particular environment and construct a model of it.
2. Classify your animal into a phylum.
3. Discuss the anatomical structures and other features that would help the animal survive in its environment.

Materials:
Bring colored paper, string, scissors, colored clay, pins, straw, buttons, etc.

Preparation: What is the strangest looking animal you have ever seen? How do you think it got that way? Using the information you know about ecology and evolutionary adaptations you are to create the strangest looking animal that ever "could" be on earth. Be creative, let your imagination flow and have fun.

Procedures:
1. Review information on biomes (land & water) and animal habitats.

2. Classification of main animal phyla including Porifera, Cnidaria, Mollusca, Arthropoda, Chordata and relate to biomes, format of genus and species, levels of classification, characteristics for classifying members of phyla.

3. Adaptations (anatomical and behavioral) needed to survive in each environment.

4. Assess learning at this point using a small written test/quiz, oral test, etc.

4. Select an environment for your animal and decide what adaptations the animal would have and record it on a data record.

5. Decide what the animal would look like and sketch a picture of it (optional).

6. Name the animal using proper Genus and species format and classify it in a real and appropriate phylum.

7. Describe the animal's behavior, including how it obtains food, its lodging, its defensive behavior, reproduction method, how it moves, and how it breathes. Record all this in the final report.

8. Use any materials to create a model of your animal. This is where you need to be creative! The stranger the animal the better as long as it lives in a real biome and has adaptations suited to that area.

9. Answer the analysis questions and write a conclusion. The model of the animal as well as the report is due in 3-4 days.

10. On the day your animal is to be finished, be prepared to write about another student's model and where it might live. (see analysis #4)

Independent Practice: You may have to describe your animal on your own time. Do not copy another student's animal, each one must be unique.

Analysis Questions and Conclusion:
1. Describe the specific physical conditions that exist in your animal's environment including climate and landforms. (temp, wind, rain, soil, and sunshine)

2. For each of the conditions mentioned above, describe a characteristic of your animal that makes it well suited to the environment.

3. State the characteristics that enable you to classify the animal in the phylum you selected.

4. On the basis of what you saw when you looked at another student's animal model, formulate a hypothesis about the environment to which the animal is adapted. Explain your answer.

Assessment Based on Objectives:
1. Points assigned to grading rubric may be as the teacher desires. Partial points for the test/quiz, construction of the animal, and for the report and analysis can be awarded.

2. Design, construct, classify and infer are the main objectives.

3. Adaptations for students should be on a case-by-case basis. The important focus should be creating a hypothetical animal that could live in a real environment and be placed in a real phylum.

4. Extensions for gifted students could include creating a story about the life of this animal and the future it may face.