ANIMAL CLASSIFICATION PROJECT

Honors Biology B

The project is due at the end of Reproduction in Living Things Unit.

This project will help you master the diverse knowledge of animal phyla with a focus on the vertebrates. You can demonstrate your knowledge by creating a magazine, PowerPoint, or a webpage. Please DO NOT simply repeat the information you find in a book or encyclopedia; your project needs to be creative and reflect your personal insights. The rubric below gives you a little more detail of what is expected.

GRADING RUBRIC:

Requirements	Description	Point Value
Content	• Include all required information for each classification category. (See the list below). • All vocabulary must be explained in simple terms – 8th graders should be able to understand your project. • Information needs to be presented in logical order. • You must use your own words.	80
Presentation	• Pay attention to grammar and spelling. • Make your project visually pleasing.	15
References	• List references.	5
	TOTAL POINTS:	100

CLASSIFICATION LIST and REQUIREMENTS:

I. PHYLUM PORIFERA (sponges)

a. Identify types of organisms that belong to this phylum; include pictures.
b. Identify their type of symmetry.
c. Identify their type of reproduction.
d. Do these organisms have organs and true tissues?
e. Sponges are sessile. What does that mean?
f. What do you find interesting about these animals?

II. PHYLUM CNIDERIA (jellyfish and coral animals)

a. Identify types of organisms that belong to this phylum; include pictures.
b. Identify their type of symmetry.
c. Identify their type of reproduction.
d. Differentiate between a medusa and a polyp; include pictures.
e. What is the purpose of cniderians' tentacles?
f. What do you find interesting about these animals?

III. PHYLUM PLATYHELMINTHES (flatworms)

a. Identify types of organisms that belong to this phylum; include pictures.
b. Identify their type of symmetry.
c. Identify their type of reproduction.
d. Platyhelminthes have the acoelomate body plan. Explain what that means.
e. Platyhelminthes also have cephalization. Please define this term.
f. What is special about the gastrovascular cavity of these organisms?

g. Do they have specialized organs for gas exchange and circulation?
h. Three important groups of platyhelminthes are flukes, planarians, and tapeworms. List characteristics of each and include pictures.
i. What do you find interesting about these animals?

IV. PHYLUM ROTIFERA (wheel animals)

a. Identify types of organisms that belong to this phylum; include pictures.
b. Identify their type of symmetry.
c. Identify their type of reproduction.
d. Rotifers have the pseudocoelomate body plan. Explain what that means.
e. What do you find interesting about these animals?

V. PHYLUM NEMATODA (roundworms)

a. Identify types of organisms that belong to this phylum; include pictures.
b. Identify their type of symmetry.
c. Identify their type of reproduction.
d. What body plan do nematodes have?
e. What is special about the alimentary canal of these organisms?
f. Do they have a circulatory system?
g. Which nematode causes trichinosis? Explain the transmission, symptoms, and treatment of this disease.
h. What else do you find interesting about nematodes?

VI. PHYLUM MOLLUSCA (snails, slugs, octopuses, clams, oysters, and squids)

a. Identify types of organisms that belong to this phylum; include pictures.
b. Identify their type of symmetry.
c. Identify their type of reproduction.
d. What body plan do mollusks have?
e. Mollusk bodies contain a muscular foot, visceral mass and mantle. Draw a picture showing these parts; remember to label them.
f. What type of circulatory system do mollusks have?
g. How do they excrete wastes?
h. What else do you find interesting about these animals?

VII. PHYLUM ANNELIDA (segmented worms)

a. Identify types of organisms that belong to this phylum; include pictures.
b. Identify their type of symmetry.
c. Identify their type of reproduction.
d. What body plan do annelids have?
e. Describe their digestive system.
f. What type of circulatory system do annelids have?
g. Describe their nervous system.
h. What else do you find interesting about these animals?

VIII. PHYLUM ARTHROPODA (spiders, crustaceans, and insects)

a. Identify types of organisms that belong to this phylum; include pictures.
b. Identify their type of symmetry.
c. Identify their type of reproduction.
d. What body plan do arthropods have?
e. Explain the composition and function of their exoskeleton.
f. What type of circulatory system is found in arthropods?
g. What organs are used for gas exchange?

h. Some arthropods undergo metamorphosis. There are actually two types of metamorphosis – complete metamorphosis and incomplete metamorphosis. Define the terms and give specific examples.
i. Why do you think arthropods are the most heavily represented animal group on the planet?

IX. PHYLUM ECHINODERMATA (starfish and sea urchins)

a. Identify types of organisms that belong to this phylum; include pictures.
b. Identify their type of symmetry.
c. Identify their type of reproduction.
d. What body plan do echinoderms have?
e. They have a water vascular system. What is it?
f. What else do you find interesting about these animals?

X. PHYLUM CHORDATA (mammals, birds, reptiles, amphibians and fish)

a. Chordates have four common features: dorsal hollow nerve cord, notochord, pharyngeal gill slits, and tail. Define/draw a picture of each of these features.
b. There are 6 classes of chordates you should know:
   Class Chondrichthyes
   Class Osteichthyes
   Class Amphibia
   Class Reptilia
   Class Aves
   Class Mammalia
   For each of these classes, give examples of representative animals; include pictures.
c. For amphibians, explain:
   i. Type of reproduction,
   ii. Type of circulatory system (pay special attention to the heart).
d. For reptiles, explain:
   i. Importance of the amniotic egg,
   ii. Composition and importance of scales,
   iii. Type of reproduction,
   iv. Type of circulatory system.
   v. Are they ectothermic or endothermic?
e. For birds, explain:
   i. Importance of feathers and hollow bones,
   ii. Type of reproduction,
   iii. Type of circulatory system.
   iv. Are they ectothermic or endothermic?
f. For mammals, explain:
   i. Functions of hair and mammary glands,
   ii. Type of circulatory system,
   iii. Size of brain.
   iv. There are three important groups of mammals: monotremes, marsupials, and placental mammals. Give characteristics of each of these groups.