"Diversity of Life" Portfolio Project

You will begin a portfolio project today on classification of living organisms. You will be creating a portfolio or booklet of information about how living things are organized. The pages you create can be designed in your own unique way as long as they include the required information. The information asked for is a MINIMUM! If you want an "excellent" grade, you should go above and beyond the given requirements.

Each person must turn in his or her OWN portfolio. You may share information with other members in your group, but each page must be created and designed by you. You CANNOT copy pages and distribute them among people in your group.

Your portfolio may be graded several times a week. Pages are due two days after they are assigned. For example, pages assigned on Monday during class may be graded Wednesday during class. If you do not finish your pages during class time, it is your responsibility to finish them outside of class.

A part of your grade for this project will come from your daily work. Even though you may complete some of your work at home, you MUST use you class time for this project. You are expected to be on task at all times. Do not start packing up for the day until cleanup time is called. Noise level should be quiet conversation and should not disrupt other groups.

You may have Pop Quizzes over the material from your portfolios. You will be allowed to use YOUR portfolio (not someone else's) for the quizzes. This is another reason you will want to keep your portfolio material up to date and organized. You will also have a test at the end of the project over all of the material in your portfolio. This will be the test on the last day we are together for the year.

Although your portfolio may be graded periodically as a class grade, you must turn in your ENTIRE portfolio at the end of the project for a test or project grade. It must be attached in the correct order in some kind of folder or stapled together.

Helpful Hints

- If you are not an artistic person, then emphasize neatness of pages. All pages must be hand written and drawn.
- Make sure each page is filled completely with info/pictures/decoration, etc.
- Add to the creativity of your portfolio by developing a theme of your own that is seen throughout the portfolio.
- Add information beyond the bare minimum required.
- Every page must have a title and a page number in the right hand upper corner. I will give you the page numbers and titles on the board each day; just remember to put them on the pages.
- Make titles of each page stand out.

- Use bullets. Do NOT copy complete sentences from your textbook. You should use your own word and write in short "blurbs".
- If you need more than one page for a certain assigned page, then label the 2 pages #a and #b (for examples if pages 10 takes you 2 pages to complete, then number the two pages 10a and 10b).
- Do NOT get behind. If you do not finish in class, you need to finish for homework but do not take the entire folder home, only the page you didn't complete. Not only will you lose points on pages if they are not completed on time, you will have a tougher time on the quizzes.
- When working on a portfolio page, ask yourself this question when assessing your own work, "Is this page something that would attract an observer to pick it up, look at it, and read it?"

Title Page: "<u>Diversity of Life</u>" with your first and last name and date you started
Table of Contents: List the title of each page and the page number

<u>Page 1: "Classification"</u>

1.) What is classification and why is it necessary? Page 518
2.) Binomial Nomenclature– define, page 519
3.) Define Linnaeus' system of classification (*Mention the two kingdoms he used and the seven taxa in his classification system*) page 533, 520
4.) Draw and tell about one animal that was incorrectly classified in the Lennaean system. page 521

<u>Page 2: "Domain and Kingdom Chart"</u>

1.) Draw the modern classification chart. Make sure it is neat, easy to read and has the E.Q. (*This is not in the book so you need to borrow one from Ms. M. or Mr. C. or off our web pages at the Ola Web site)*

<u>Page 3: "What is a Virus?"</u>

1.) Define virus, page 544
2.) Draw a picture of two different viral shapes – label each virus that you draw with the different parts. page 548
3.) Identify two reasons viruses are different from living cells. page 544
4.) Does a virus have DNA, RNA, or both to carry its genetic material? page 549
5.) Describe a bacteriophage and what it does to bacteria. page 549
6.) Draw a picture of a bacteriophage and label the bacteria and the bacteriophage. page 549
7.) Define lytic and lysogenic infections. Draw a picture of the general pathways of viral infection. pages 550-551

Put in a Divider Page That Says: "Kingdoms of Prokaryotes"

Page 4: "Eubacteria and Archaebacteria"

1,) What are the differences between bacteria and archaea? pages 556-557
2.) Draw and label one type of bacteria. page 556
3.) Tell two ways to identify prokaryote cells. page 558
4.) Reproduction – describe binary fission (page 148) and draw a picture.
5.) Reproduction – describe conjugation (page 559) and draw a picture.
6.) Reproduction – describe endospore (page 558).
7.) Draw and label a prokaryote cell. (page 557)

Page 5: "How Bacteria Help Us /How Bacteria Harm Us"

1.) What are two ways prokaryotes are helpful to us? (page 559)
2.) How are prokaryotes nitrogen fixers? (page 561)
3.) Describe how prokaryotes are used to benefit industry. (page 561)
4.) What are two ways bacteria can cause disease in humans? (page 563)
5.) How does the streptococcus bacteria harm us? (page 564)
6.) Describe how bacteria becomes resistant to antibiotics? (page 565)

Put in a Divider Page That Says: "Kingdom Protista"

Page 6: "What is a Protist" (may need to make 2 pages, 6a and 6b)

1.) Write a general description of protists and the how they are classified (pages 574-575)

a.) Animal-like protists: Protozoans – give a general description of protozoans as a group, then provide more detail about each of the following – *Draw a picture of any two and label them*

-zooflagellates (pages 577-578)
-protozoa with cilia (pages 578-579)
-sporozoans (page 580)

b.) plant-like protists (pages 581-585) give a general description about the group, then provide more detail about each of the following – *Draw a picture of any two and label them*

-euglenoids (page 582)
-dinoflagellates (pages 582-583)
-diatoms (page 583)
-red algae (584)
-brown algae (page 584)
-green algae (page 584)

c.) funguslike protists – give a general description, then provide more detail about each of the following – Draw a picture and label each

-slime molds (pages 587-588)
-water molds (page 588)

Put in a Divider Page That Says: "Kingdom Fungi"

Page 7: "What are Fungi?"

1.) Describe the structure and function of fungi and tell how they are classified (page R27)

a.) Tell how fungi are decomposers (page 596)

b.) Tell how fungi are pathogens (page 597)

c.) Tell how fungi are mutualists (pages 598-599)

d.) Tell why they are studied (page 599)

e.) Tell how fungi reproduce (page 591-594)

f.) Describe each of the following – *Draw a picture of any two and label them*

a. primitive fungi (page 590)
b. sac fungi (page 590)
c. bread molds (page 591)
d. club fungi (page 591)

Put a Divider Page That Says "Kingdom Plantae"

Page 8: "What is a Plant"

1.) Define plants and and graph the evolution of plants (pages 612-613)
2.) Describe how plants retain moisture (page 614)
3.) Describe how plants transport nutrients (page 614)
4.) Describe how plants reproduce (page 614)
5.) Draw and describe the four sections of plants (page 615)

Page 9: "Classification of Plants"

Plants are classified by three important features:
-water-conducting tissues
-seeds
-flowers

1.) Draw a graph with the nine different phylum of plants with a picture of each (graph on pages R27-R28) (pictures on pages 617-627)

Page 10: "More Plant Info"

1.) Describe the process of photosynthesis (page 103)
2.) Write the equation for photosynthesis and label the equation (page 105)
3.) Describe the process of pollination (page 620)
4.) Describe how seeds are dispersed and draw 3 pictures showing how they are moved to new places (page 620)
5.) Describe auxins and what they do (page 681)
6.) Describe tropism and draw and label a picture demonstrating one form of movement (page 681)
7.) Describe gravitropism and draw and label a picture demonstrating

(page 682)

8.) Describe phototropism and draw and label a picture demonstrating (page 682)

9.) Describe thigmotropism and draw and label a picture demonstrating (page 683)

10.) Describe photoperiodism (page 683)

Put a Divider Page That Says: "Kingdom Animalia"

Page 11: "What are Animals"

1.) List 2 characteristics each of vertebrates and invertebrates and draw and label an example of each (page 699) (pictures can be found in chapter 23)

2.) Define homeobox genes and draw the Hox Gene Expression graph (page 700)

3.) Define the 2 different body plans and draw an example of each you haven't already used in #1 (page 701)

4.) *Write the definition for **cephalization** (I couldn't find it in the book.) Cephalization – the evolutionary trend, whereby nervous tissue, over many generations, becomes concentrated toward one end of an organism*

5.) *Write the definition for **body cavity formation** (I couldn't find in the book) Body cavity formation – a coelom is a cavity lined by epithelium – organs formed inside coelom can freely move, grow, and develop independently of the body wall while fluid cushions them from shock*

6.) List the essential systems and describe what each does

-digestive system, page 977
-excretory system, page 986
-skeletal system, page 1000
muscular system, page 1006
respiratory system, page 910
circulatory system, page 910

Divider "Invertebrates"

Page 12: "Sponges / Cnidarians"

1.) List the following information for each organism

Sponges	**Cnidarians**
-kingdom, page R28	-kingdom, page R28
-phylum, page R28	-phylum, page R28
-general information, pages 705-706	-general information, pages 707-708
-body symmetry, page 706	-body symmetry, page 707
-reproduction, pages 705-706	-reproduction, page705-706
-body plan, page 703	-body plan, page 703
-movement, page 705	-movement, page 707
-method of obtaining energy, page 706	-method of obtaining energy, page 708
-significance to humans, page 702	-significance to humans, page 702

2.) Draw an example of a sponge, pages 705-706

3.) Draw an example of a cnidarian polyp, page 707

4.) Draw an example of a cnidarian medusa, page 707

Page 13: "Flatworms / Roundworms"

1.) List the following information for each organism

Flatworms	**Roundworms**
-kingdom, page R29	-kingdom, page R29
-phylum, page R29	-phylum, page R29
-general information, pages 710-711	-general information, pages 716-717
-body symmetry, page 710	-body symmetry, page 716
-reproduction, pages R28-R29	-reproduction, pageR28-R29
-body plan, page 703	-body plan, page 703
-movement, page 710-711	-movement, page 716
-method of obtaining energy, page 710-711	-method of obtaining energy, page 716
-significance to humans, page 702, 710-711	-significance to humans, page 702, 717

2.) Draw and label the parts of a flatworm, page 711

3.) Draw and label the parts of a roundworm, page 712

Page 14: "Annelids / Mollusks"

1.) List the following information for each organism

Annelids	**Mollusks**
-kingdom, page R29	-kingdom, page R29
-phylum, page R29	-phylum, page R29
-general information, pages 714-715	-general information, pages 712-713
-body symmetry, page 703	-body symmetry, page 703
-reproduction, pages 715	-reproduction, page713
-body plan, page 703	-body plan, page 703
-movement, page 714	-movement, page 712
-method of obtaining energy, page 712	-method of obtaining energy, page 716
-significance to humans, Page 702	-significance to humans, page 702

2.) Draw and label the parts of an annelid, page 715

3.) Draw and label the parts of a mollusks, page 712

Page 15: "Arthropods / Echinoderms"

1.) List the following information for each organism

Arthropods	**Echinoderms**
-kingdom, page R30	-kingdom, page R30
-phylum, page R30	-phylum, page R30
-general information,	-general information,

pages 732-734 pages 718-720

-body symmetry, page 703 -body symmetry, page 703

-reproduction, pages -reproduction, page 719

-body plan, page 703 -body plan, page 703

-movement, page 732 -movement, page 718

-significance to humans, Page 702, 747-749 -significance to humans, page 702,

2.) Draw and label the parts of the two arthropods shown in the textbook (crustacean, page 736) (arachnid, page 741)

3.) Draw and label the parts of an echinoderm, page 718

Put a Divider Page That Says: "Vertebrates"

Page 16: "Fishes"

1.) List the following information about fishes

Fishes

-kingdom, page R31

-phylum, page R31

-general information, pages 763-767

-body symmetry, page 703,761

-reproduction, *most reproduce sexually and lay eggs*

-body plan, pages 763

-method of movement, page 764

-method of obtaining energy, page 766

-significance to humans, *think!*

4.) Draw and label the parts of a bony fish, page 769

Page 17: "Amphibians"

1.) List the following information about amphibians

Amphibians

-kingdom, page R31

-phylum, page R31

-general information, pages 773-777

-body symmetry, page 703

-reproduction, page 774

-body plan, pages 703

-method of movement, pages 773-777

-method of obtaining energy, pages 773-777

-significance to humans - *think!*

5.) Draw and label the parts of a frog, page 775

6.) Draw and label the frogs life cycle, page 775

Page 18: "Reptiles"

1.) List the following information about amphibians

Reptiles

-kingdom, page R31

-phylum, page R31

-general information, pages 793-797
-body symmetry, page 703
-reproduction, page 793
-body plan, pages 703
-method of movement, pages 796-797
-method of obtaining energy, pages 793
-significance to humans - *think!*

2.) What are the four modern groups of reptiles, pages 796-797

3.) Draw and label the parts of a reptile's anatomy, page 797

Page 19: "Birds"

1.) List the following information about amphibians

Birds

-kingdom, page R31
-phylum, page R31
-general information, pages 798-799
-body symmetry, page 703
-reproduction, page R31
-body plan, pages 703
-method of movement, pages 799,801
-method of obtaining energy, pages 793, 802
-significance to humans - *think!*

2.) Draw and label the anatomy of a bird, page 800

Page 20: "Mammals"

1.) List the following information about amphibians

Mammals

-kingdom, page R31
-phylum, page R31
-general information, pages 805-809
-body symmetry, page 703
-reproduction, page R31, 806
-body plan, pages 703
-method of movement, pages 807-809
-method of obtaining energy, page 807
-significance to humans - *think!*

2.) What are the three main groups of modern mammals pages 807-809