Tuesday, May 26
BIO 40S

Teacher: Ms. Leroux Contact: See contact sheet

As we approach the end of this course, I thought you might appreciate knowing what the rest of your work packages are going to look like. We will continue with the Distance Ed modules as they are well set up to allow us to finish the entire course by mid-June. Because you receive the entire module at once, you are more than welcome to work ahead. If you choose to do this, just answer the questions on the pages in your own workbook and attach them to the assignment package I give you. The most important thing when doing this is that you attach your questions to the work package **assignment title page.** The title page is what lets our EAs know which teacher, course, and student the work belongs to. It doesn't really matter if the title page doesn't match the assignments behind it. I can figure that part out. It's just important that your work actually gets to me!

Here is the schedule of work from now until the end of the course (only 4 more!).

May 26: Module 4, lessons 3-5

June 2: Module 5, lessons 1-2

June 9: Module 5, lessons 3-4

June 16: Final mini-project

NOTE: I am giving you your module 5 booklet today just in case you do choose to work ahead. Otherwise, you don't need it until next week.

What's New This Week?

This week I am assigning 3 lessons. I know its a little more work than usual, but it's the best way to ensure we finish the course. Just keep working at your own pace, however. Almost done!

This Week's Assignments (Module 4 Booklet):

Lesson 3 – Systems of Classification (Beginning on page 23)
Lesson 4 – The Three Domains of Life (Beginning on page 45)
Lesson 5 – Evolutionary Trends (Beginning on page 55)

BIOLOGY 40S

Ms Leroux

Lesson 3 – Systems of Classification
Lesson 4 – The Three Domains of Life
Lesson 5 – Evolutionary Trends
(May 26 – June 1)

NAME (first and last): _____

Assignment 4.3: Systems of Classification (12 marks)

Remember that you will submit this assignment to the Distance Learning Unit for assessment at the end of this module, along with the other assignments from Module 4.

Answer the following questions.

1. How can studying the fossil remains of organisms from the distant past assist in classifying life forms that live on Earth at the present time? *(3 marks)*

(continued)

Assignment 4.3: Systems of Classification (continued)

2. Define the two major approaches used to classify organisms: phenetics and cladistics. Describe one strength and one weakness of **each** approach. *(6 marks)*

(continued)

Assignment 4.3: Systems of Classification (continued)

3. What information do *Archaeopteryx* fossils provide that helps biologists to classify modern birds? *(3 marks)*

Assignment 4.4: The Three Domains of Life (15 marks)

Remember that you will submit this assignment to the Distance Learning Unit for assessment at the end of this module, along with the other assignments from Module 4.

Part A

1. Each characteristic listed below is typical of organisms belonging to one or more of the six kingdoms that you have studied in this lesson. For each characteristic, write the letter corresponding to the kingdom (or kingdoms) that it describes or is associated with. Some characteristics may apply to more than one kingdom, but you need to give only one answer for each question. *(10 marks)*

The Six Kingdoms

A Bacteria

B Archaea

C Protista

D Fungi

E Plantae

F Animalia

Characteristics

____ 1. Cell walls made of chitin.

____ 2. All forms are multicellular, heterotrophic; most are motile.

____ 3. Prokaryotic cells.

____ 4. Mammals.

____ 5. Slime moulds.

____ 6. Live in extreme environments, such as very salty or very hot water.

____ 7. Eukaryotic cells, heterotrophic.

____ 8. Eukaryotic cells, autotrophic.

____ 9. Apple trees belong to this kingdom.

____ 10. Eukaryotic, unicellular.

(continued)

Assignment 4.4: The Three Domains of Life (continued)

Part B

2. Before biologists used a three-domain system for classifying living organisms, they used the six-kingdom system suggested by Carl Woese.

   Why was the three-domain system for classifying living organisms seen to be an improvement over the six-kingdom system? In what ways does the three-domain system help us to understand living things better? *(5 marks)*

Assignment 4.5: Evolutionary Trends (10 marks)

Remember that you will submit this assignment to the Distance Learning Unit for assessment at the end of this module, along with the other assignments from Module 4.

1. Flight is an ability seen in some insects, most birds, and a few mammals. Why are not all flying animals placed together in the same taxonomic group based on that important ability they share? *(5 marks)*

(continued)

Assignment 4.5: Evolutionary Trends (continued)

2. In 1959, anthropologist Louis Leakey discovered the fossil remains of an ancient primate belonging to the genus *Australopithecus* in Africa. At that time, it was believed that this primate was an ancient ancestor of humans. Current theories do not support that idea and, instead, claim that *Australopithecus* shared a common ancestor with modern humans but was itself an ancestor to modern chimpanzees.

   If scientific theories about human evolution continue to change (and they definitely will),

   - how can we say with any confidence that we know anything about human evolution?
   - will we ever be totally certain that scientific theories about human evolution are true?

   Explain your answers to each of these questions as clearly as you can. *(5 marks)*