RESEARCH PROJECT, PART 1

Answer each of the following questions in 1 to 3 paragraphs. Each answer is worth five points. Be sure to answer these questions *in your own words.*

1. Describe the components of the geocentric view of the universe that was held by the early Greeks. How did Ptolemy account for the motions of the celestial bodies in his model?
2. List and describe two of the minor members of the solar system.
3. The change from ancient to modern astronomy wasn't easy. It required considerable work and commitment by five key scientists. List and describe the contributions made to modern astronomy by Nicolaus Copernicus, Tycho Brahe, Johannes Kepler, Galileo Galilei, and Sir Isaac Newton.
4. Explain what criteria determines whether a planet is to be considered either Jovian or terrestrial. Identify the Jovian and terrestrial planets. Briefly describe each planet, incorporating the peculiarities of each.
5. Describe stellar parallax and explain how one would mathematically measure and calculate the distance to a star using this method.
6. Discuss Earth's moon. Elaborate on the following: maria, craters, regolith, highlands, and theories on the moon's origin.
7. Describe the major types of galaxies and provide examples of each.
8. List and explain the stages of the life cycle of a star.
9. Describe the arrangement and properties of main-sequence stars, including temperature, size, and color, on the Hertzsprung-Russell diagram. Describe white dwarfs and red giants.
10. Discuss the big bang theory and the evidence that supports it. Explain how some scientists regard it as an adequate explanation of the origin of the universe.

Research Project

RESEARCH PROJECT, PART 2

Overview

Select your topic for Research Project, Part 2, by choosing an article related to Earth science from the Discover Magazine website at **http://www.discovermagazine.com**.

Note: Be sure to provide the title and author of the article you've chosen.

Instructions

Write a brief, three-to-five-page response paper, in which you

1. Explain how the article relates to your Earth Science course.
2. Answer the eight questions below. Include your reflections on scientific inquiry and methods.
3. Support your statements and reasoning with information and examples from the article and your textbook.

Note: Short-answer format will *not* be accepted.

Questions

Before Reading, Ask Yourself These Questions:

1. What does the article appear to be about?
2. Why might this be an important topic?

During Reading, Ask Yourself These Questions:

1. What is the aim of the article? In other words, why was the article written?
2. Pick one quotation from the article. Can you explain what the speaker means?
3. How has the scientific community's understanding of the article's topic changed over time?

4. How does the article illustrate the importance of its topic?
5. How might science teachers be able to use the article to actively engage their students in learning about the chosen topic? Consider hands-on activities that will convey the importance of the topic.

After Reading, Ask Yourself These Questions:

6. Why do scientists often study just one particular problem at a time? (Consider the scientific method here.)
7. How could the information presented in the article benefit people and society? Why should the human population care about the information presented in the article?
8. Computers often have an important role to play in scientific research. How are computers utilized in this particular field of study? In using computers to analyze the article's topic, what problems do scientists face?

Writing Guidelines

1. Type your submission, double-spaced, in a standard print font, size 12. Use a standard document format with 1-inch margins. (Do *not* use any fancy or cursive fonts.)
2. Include the following information at the top of your paper:
   a. Title of project
      (Earth Science Research Project, Parts 1 and 2)
   b. Name and complete mailing address
   c. Student number
   d. Course title and number
      (SCI110 Earth Science)
   e. Research project number (25034800)
3. Read the assignment carefully and address the topic or issue suggested.
4. Be specific. Limit your submission to the topic or issue suggested.

5. Proofread your work carefully. Check for correct spelling, grammar, punctuation, and capitalization.

Grading Criteria

Your projects' grade will be based on the following criteria:

Content	95 percent
Written communication and format	5 percent

Content

The student

- Provides a clear discussion of the assigned topic or issue
- Addresses the subject in complete sentences, not just simple yes-or-no statements
- Supports his or her opinion by citing specific information from the article chosen
- Stays focused on the assigned issues
- Writes in his or her own words and uses quotation marks to indicate direct quotations

Written Communication

The student

- Includes an introductory paragraph, a body, and a concluding paragraph
- Uses correct grammar, spelling, punctuation, and sentence structure
- Provides clear organization by using words like *first, however, on the other hand, and so on, consequently, since next,* and *when*
- Makes sure the paper contains no typographical errors