Week 10 Assignment 1

Topic: Understanding the Nature of Scientific Inquiry

Instructions:
1. Read the following passages from your textbook. Circle any key terms.
2. Write short answers to the questions that follow each passage.
3. For each question, explain your reasoning and support your answer with evidence from the assigned material.

Passage 1:

The scientific method is a systematic approach to inquiry used to investigate phenomena and acquire new knowledge. It involves several key steps:

- Observation: Noticing and describing a phenomenon or pattern.
- Hypothesis: Formulating a testable explanation based on observations.
- Experiment: Testing the hypothesis by conducting controlled experiments.
- Analysis: Evaluating the results of the experiment to determine whether the hypothesis is supported.
- Conclusion: Drawing a conclusion based on the evidence collected.

Questions:
1. What is the purpose of the scientific method?
2. What are the key steps involved in the scientific method?
3. What is a hypothesis?

Passage 2:

In scientific inquiry, it is crucial to consider the limitations of your data and methods. What are some common limitations that researchers face when collecting data?

Questions:
1. What are some limitations of data collection in scientific research?
2. How can researchers address these limitations when designing experiments?

Passage 3:

The scientific method is widely used across various fields, including the natural sciences, social sciences, and humanities. How does the approach to scientific inquiry differ in these different disciplines?

Questions:
1. How does the scientific method differ in application across different fields?
2. Provide examples of how the scientific method is adapted in each of these fields.

Passage 4:

The scientific method is not without its critics. Some argue that it is too rigid and fails to accommodate certain types of knowledge. What are some of these criticisms?

Questions:
1. What are some criticisms of the scientific method?
2. How might these criticisms be addressed to improve the scientific method?