

SCE4350

Dr. Persin

Reading Questions Based on the Settlage Text

Introduction to Science and Culture

(Please answer on separate paper)

Foreward and Preface (Answer all 3)

1. What three aspects comprise culturally relevant pedagogy?
2. Do you think that your teachers taught science in a culturally relevant way?
3. How were you taught science? Describe some positive and negative experiences and how these experiences influenced your own ideas about teaching.

Chapter 1 - Forming Commitments to Science Teaching (Answer any 4)

- 1.1. Describe the shared traditions or “scientific habits of mind? Based on your experience, how would you incorporate these scientific habits of mind within your own science teaching?
- 1.2. The authors believe that a teacher’s lack of science confidence is a substantial barrier to elementary students’ science learning. Reflect back on your years of schooling. Has your level of science confidence changed? If so, why has this occurred?
- 1.3. Describe several arguments for including science in a school curriculum?
- 1.4 What does being “scientifically literate” mean?
- 1.5. Who do the authors include within “science for all?” What have been your experiences teaching diverse students?
- 1.6. Think about the “Reasons Behind Achievement Gaps” section (pp. 15 – 17). What have you observed regarding teachers’ expectations of students of diverse backgrounds?
- 1.8. How is culture explained by the authors, and how do they suggest that science teachers teach the culture of science? This is the topic of the entire book, so just briefly discuss this here.

Chapter 2. Observe, Infer, and Classify: Basic Process Skills (Answer any 4)

- 2.1. What are a few benefits of learning science process skills?
- 2.2. How do observing and inferring differ? How have you taught students to observe and infer? You may use Figure 2.1. “Drawing of Animal Tracks” with students to help them learn how to distinguish between observations and inferences.
- 2.3. How does the practice of science differ from the courtroom analogy?
- 2.4. What are the three guidelines for classifying?
- 2.5. What are the integrated science process skills? Do you think that your grade level students can understand these? We will do some hands-on experiments on July 14th in class.
- 2.6. How could a student’s cultural background pose difficulties while learning to classify in science class?
- 2.7. How should process skills be taught to students with cognitive limitations?

Chapter 3 – Measure, Predict, and Communicate: Basic Science Process Skills

Reading Questions (Please answer any 4)

- 3.1. What is the difference between observing and measuring?
- 3.2. The metric system is the system that scientists use throughout the world to make their measurements and many students from other countries are more familiar with this system. Regarding the metric system, how do the authors (which I would agree with) propose teaching students?
- 3.3. How do learners assimilate or accommodate learned information? Can you think of any examples of science concepts that you did not understand? We will talk more about this topic when we address misconceptions in the next module.
- 3.4. After reading the section on what qualifies as a science lesson, reflect on your approach to teaching science. Do you think that you were truly teaching science?
- 3.6. What are the Five Principles for Effective Pedagogy according to the Center for Research on Education, Diversity, and Excellence (CREDE)?
- 3.7. How could you teach science process skills using the CREDE principle of a joint productive activity?
- 3.8. How do the *National Science Education Standards* promote the teaching of science process skills? (See Table 3.2.) Do you feel comfortable teaching this way? Describe the approach that teachers used in your science classes to teach science content and process skills (in other words, were you taught science and process skills separately or together)?
- 3.9. How do you think that teaching all students the science process skills provides them access to the scientific worldview?

Name _____

The following items refer to the green *Sciencesaurus*, text.

Please answer on this page.

1. On what page would you find the Periodic Table of the Elements? _____

2. What is the difference between Climate and Weather (*Sciencesaurus*)?

What page(s) did you use? _____

3. Again, according to the *Sciencesaurus*, what is the difference between a rock and a mineral?

What page(s) did you use? _____

4. Again, according to the *Sciencesaurus*, how do Mid-ocean Ridges form?

What page(s) did you use? _____

5. Again, according to the *Sciencesaurus*, name 5 Renewable Energy Resources?

What page(s) did you use? _____
