End-of-Course Review Sheet – Possible Exam Items

EDN 336 – Fall 2008 – Dr. Zinner

1. Constructivist teachers strive to accomplish three key goals.
   A. Use or create learning opportunities that are meaningful to children.
   B. Encourage children to make real decisions.
   C. Encourage peers to exchange views in order to refine learning and deepen understanding.

   Describe a lesson in which you have recently participated, taught, or observed and detail how these three goals were accomplished in that lesson.

2. Science is sometimes described as "the interrelationship of three factors." (Attitudes, Processes, and Knowledge). Describe what steps or activities you can take to encourage growth in these three areas. (List three steps/activities for each.)

3. Describe some adaptations or adjustments you would make as a teacher to facilitate a better science learning environment for the following educational concerns.
   (a) Students with learning disabilities
   (b) Students with limited intellectual capacity
   (c) Students with physical disabilities
   (d) Students who are intellectually gifted
   (e) Female students
   (f) Students who are economically disadvantaged
   (g) Students who are non-English speakers

4. Respond to the following short questions regarding the use of science notebooks
   (a) List the five steps utilized with completing science notebooks
   (b) List some educational benefits of the use of science notebooks.
   (c) Describe briefly how you would assess the results of a science notebook activity.

5. Describe how knowledge of **each** the following techniques and awarenesses will enable you to become a more effective science teacher.
   (a) Inquiry learning approach
   (b) Use of the integrated process skills
   (c) Use of productive questions
   (d) Understanding of preconceptions and misconceptions
   (e) Use of constructivist approach
   (f) Awareness of the three science factors – attitudes, processes, and skills
   (g) Awareness of the unique needs of students with special needs
   (h) Awareness of gender biases

(See next page.)

6. During your science field experience, you taught two science lessons. Select one of those lessons and complete the following:
   (a) Briefly describe the goals of that science lesson that you taught.
   (b) List three productive questions for this lesson.
   (c) Describe how you would facilitate the lesson to support students' attempts to answer these questions.

7. During class we discussed the teaching of evolution. Using this information, respond to the items below;
   (a) List three basic tenets of principles about evolution
   (b) List three basic misconceptions
   (c) Why is the teaching of evolution sometimes controversial?
   (d) In general, how have the courts rules about the teaching of evolution and alternative philosophies such as "intelligent design?"
   (e) What are some steps elementary teachers to avoid difficulties in teaching evolution?

8. Space Science – respond to the following items regarding space science.
   (a) Explain what causes the phases of the moon
   (b) Provide a drawing to support your explanation
   (c) Explain what causes the seasons of the year
   (d) Provide a drawing to support your explanation
   (e) Fill in the blanks for the following items:
      (1) Largest plant - _____
      (2) Rings around this planet go from north to south - _____
      (3) May have once contained water- _____
      (4) Four inner planets are known as the _____ planets
      (5) Four outer planets are known as the _____ planets
      (6) Term used to describe Pluto - _____
      (7) Rotation time is almost equal to Earth's - _____
      (8) Named after the king of gods - _____
      (9) Usually 8th planet, but sometimes 9th - _____
      (10) Shrouded in cloud cover - _____

9. Use of Rubrics
   (a) Define the following terms:
      (1) Dimension
      (2) Benchmarks
      (3) Descriptors
   (b) Using either the Dancing Raisins or Batteries/Bulbs lesson, designed a rubric to evaluate the students using a four point benchmark system and a minimum of three dimensions.

10. Global Warming
   (a) Identify five key concepts to discuss when teaching global warming
   (b) Discuss why global warning is so controversial
   (c) List five things families could do to reduce energy consumption