

Journal: Keep an ongoing journal of your experiences throughout the term. I won't give these a letter grade, but will look them over throughout, and at the end, of the term. Your journal writings will be worth 15% of your final course grade. Please include the following:

- a) During the first week of the term write about one or two key school experiences you remember from grades 6-12. Record your feelings and ideas about education and, specifically, about science education.
- b) Record your observations, questions, and reflections after spending time in classrooms.
- c) During the second week take the two surveys I will hand out (Forms 3.4 and 3.5) Think about your responses and incorporate them into your journal— how might your attitudes help/impede student learning?
- d) During 8th week write about how you have grown as a result of our readings, classroom observations, microteachings, and visits by teachers. In terms of teaching, what do you see as your strengths and what do you see as personal areas for growth? Incorporate the various readings we have done in the course into your writing.
- e) Throughout the term, develop your instructional theory, including methods that work well for you and methods of teaching you'd like to try in the future.

Web page design: As a group we will design a set of web pages that will be posted on the web and available for other educators. Ideally I'd like for us to choose a topic that would incorporate chemistry, earth science, and biology. You will need to approach the project using information gained from both scientific and educational research. The lesson plans should incorporate the learning cycle and should describe the standards covered. We will meet one day in the computer lab to learn the basics of Dreamweaver. As a teacher you will need to make full use of available technology and designing web pages will be a useful skill. Your contribution to the class web page will be worth 15% of your final course grade.

Observations: Each of you will be initially assigned a classroom for observation. You should observe at least twice with that initial classroom teacher, recording in your journal as described above. We will also have the opportunity to observe at Prairie Creek Community School and St. Paul Central High School. These observations are vital to your learning as you will see experienced teachers in action and they will contribute to 10% of your final grade. See additional handout on guidelines for observing in schools.

Science Day with the Girl Scouts: a service learning project: You will gain some additional hands-on experience with students by organizing and holding a Science Day one May Saturday with local Girl Scouts. You will benefit by gaining experience organizing and choosing hands-on activities and designing lesson plans aimed for the age of girls we are working with. Where does the service part fit in? The girls will benefit by being exposed early to hands-on science activities and hopefully will gain self-confidence in their scientific and reasoning ability. Teachers and Girl Scout leaders will also benefit, as you will organize the activities and background knowledge into an easily useable

format—a science “kit.” The kit will contain instructions for activities, a list of materials, a description of how various activities fit with the Science Standards, necessary background information, useful web sites, addresses for ordering supplies, sample projects, etc. The goal of the project is that a future teacher or leader could pull out the kit and be ready to go. This project will be worth 15% of your course grade.

Microteaching: This activity will give you practice designing lesson plans, using the cycle of learning, and assessing your teaching style. You will teach two mini-lessons to the rest of the class. The first microteaching will be short; each of you will have only 10 minutes. In this exercise teach us either how to set up an experiment or how to use a piece of equipment. You need to decide the type of class you are teaching and the grade level. We will be videotaping this class and you will have the opportunity to view and evaluate yourself (in private)! For the second microteaching you will have 20 minutes and can teach a specific concept. For each microteaching, hand in the following: an explanation of why you chose the approach you did, how you incorporated multiple learning styles into the lesson plan, and how you used published research in the field of education. For the **second** microteaching only, include a sample assessment. The first microteaching is worth 15% of your grade, the second 20%.

Odds and ends: We will work on a few small projects that together will be worth the remaining 10% of your grade. Some small projects such as rubric design we will do in class. You will also compile some interesting biographies of scientists who are either females and/or people of color. Research **one** scientist and write a brief summary of her/his life and science. Any interesting web sites or books should be listed for further study. Make sure you describe how these people and their work could be woven smoothly into the curriculum as a particular topic is being studied, rather than discussed during one “highlight” week. Both *Women of Science* and *Celebrating Cultural Diversity* may be useful resources and will be on reserve. Print enough copies for everyone in the class. Due: April 25th in class.