Math 215
Portfolio

Please include the following items in your portfolio.

	Item	Pts. Possible	Pts. Received
1.	Cover letter - Guidelines Attached * addressed all questions = 7 * proofed for errors = 1 * detailed responses = 7	15	
2.	3 Detailed Project Write-ups - Guidelines Attached Select three of the group projects that you have completed in class and do a "lab report" using the attached guidelines. (HINT: Don't wait until the last week. You may do this any time during the term.)	15	
3.	Statistics Papers (**15 points each**) - Guidelines Attached	30	
4.	Lesson - Guidelines Attached • lesson plan and handout = 20 points • presentation = 10 points • use of concepts learned in course = 5 points • incorporation of NCTM *Standards* = 5 points	40	

Guidelines for Portfolio Cover Letter

Address the letter to me. Write it as you would a letter. Address the following questions. Write in complete sentences and paragraphs. Do not just answer yes or no. Think about your responses and explain your reasoning. Write your letter on a word processor if possible.

Here are the questions you need to address.

1. Describe two problem-solving techniques we used in this class that were helpful to you. How did they help you? Will you continue to use them? How can you teach children to use them?

2. Describe how technology can be used to enhance students' understanding of mathematical concepts.

3. Describe the classroom environment (such as groups, hands-on, lecture, etc.) in which you were most comfortable learning. How will this impact the way you teach children mathematics?

4. Give an example of how a manipulative was used to enhance your understanding of a mathematical concept.

5. Name one or two concepts that you feel are your strengths. Why?

6. Identify two areas you initially found challenging in which you now feel confident. What helped you understand?

7. Identify one or two concepts in which you need more work. Why do you think these concepts are difficult? How can you clarify your understanding?

8. Discuss your attitude about mathematics. Do you feel more or less confident in your ability after taking this course? If your attitude has changed, explain how you feel different now and what brought about the change.

PROJECT WRITE-UP FORM

1. Describe the problem or activity in your own words.

List the information that is needed to solve this problem or do this activity.

2. What strategy(ies) did you use to solve this problem? Explain in detail how you solved the problem. Be sure to include what worked and what did not work.

3. Justify your solution to the problem. Is your solution reasonable? How do you know your solution is reasonable? Can you see an easier solution? Can you think of another way to solve the problem?

4. Write a brief summary of what you learned.

Math 215

Writing Projects

Statistics is a tool that is used every day in our world. This project is an opportunity for you to collect and analyze examples of the use of statistics. Choose something that is of interest to you or is related to your field of study. (15 points each)

1. Collect an example from a newspaper or magazine in which a graph has been presented in a potentially deceptive manner. Identify the source from which the graph was taken. Explain briefly the ways in which the graph might have been deceptively presented and then suggest ways the data might be presented more fairly or in a less distorted fashion. An original or photocopy of the graph must be included with the project. (15 points)

2. Write a summary of an article from a magazine, journal, textbook, or other source that **shows a practical application of statistics or how statistics is used** in society. Discuss and/or critique the statistics used in the article. This should be typed and double spaced. Include a cover page and bibliography of the source article. Indicate in your essay the date of publication and discuss what effect this may have on your information. (15 points)

MATH FOR PRESERVICE TEACHERS
PROJECT

The current view of learning mathematics is summarized in *Everybody Counts* (National Research Council, 1989, pp. 58-59.)

> Educational research offers compelling evidence that students learn mathematics well only when they construct their own mathematical understanding. To understand what they learn, they must enact for themselves verbs that permeate the mathematics curriculum: "examine," "represent," "transform," "solve," "apply," "prove," "communicate." This happens most readily when students work in groups, engage in discussion, make presentations, and in other ways take charge of their own learning.

With this view in mind, develop a lesson to teach one of the topics covered in this course. Include the use of **at least one** of the concepts learned in this class and incorporate as many of the NCTM *Standards* as possible. Be creative and have fun with this. This is not meant to be busy work. Develop a lesson that will be useful to you in the future. If you are having difficulty understanding a concept in this course, develop a lesson on that concept. This will help you gain a better understanding of that concept.

Be prepared to present your lesson. Provide a one-page handout of your lesson for each student in the class so that each of you will have a packet of lessons to use in the classroom. The handout should include a list of materials that will be needed and the objective of your lesson. The handout should provide enough information so that the lesson could be replicated in the classroom.

In your portfolio, include a copy of the handout that you have provided for your classmates and also include a brief (one to two pages) write-up of your lesson. In your write-up for the portfolio, **list the concepts from the course** that you have used in your lesson. Also, **describe** and **explain** how your lesson addresses the **NCTM *Standards*.**

Teaching Children Mathematics, Mathematics Teacher, and *Instructor* are good resources for ideas. Also feel free to visit classrooms and talk to teachers to get ideas.