

SIMON FRASER UNIVERSITY

Faculty of Education

Education 475

Designs for Learning -- Elementary Mathematics

Spring, 1983
Prince Rupert

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Text:

Troutman, A. P., & Lichtenberg, B. K. Mathematics: A good beginning
(2nd ed.). Belmont, CA: Wadsworth, 1982.

References:

British Columbia Ministry of Education. Mathematics curriculum guide,
years one to twelve. Victoria, B.C.: Author, 1978.

School textbook series:

Grades 1 to 6:

Investigating School Mathematics

Project Mathematics

Heath Elementary Mathematics

Grade 7:

School Mathematics 1

Mathematics 1

Essentials of Mathematics

Schedule:

| <u>Dates</u> | <u>Topics</u> | <u>Text Readings</u> | |
|--------------|---------------------------------|----------------------|------------|
| Jan. 10,11 | Piaget, numeration | 0, 1, 2 | 0, 1, 2 |
| Jan. 24,25 | Whole numbers | 3, 4 | 3, 4, 5 |
| Feb. 7, 8 | Rational numbers | 5, 6 | 7, 8, 9 |
| Feb. 21,22 | Geometry | 8, 9 | 10, 11, 12 |
| Mar. 7, 8 | Measurement | 10, 11, 12 | 14, 15, 16 |
| Mar. 21,22 | Calculators, problem-solving | 14, 15 | 10, 17 |

Course Requirements:1. Class participation, assignments, etc. (15%)

Various small assignments will be given over the semester. You will be expected to show evidence, written or verbal, of their completion. As well, much can be learned through the shared experiences of class members, and each student is expected to contribute in some way to discussions and deliberations.

2. Class presentation. (10%)

Make a ten minute presentation to the class showing an idea, activity, or teaching technique which you feel would be particularly effective for your grade level. If possible, describe something which you, as a teacher, have found to be useful, or which you have observed others to use imaginatively.

Provide a summary of your presentation to all class members so they may begin to accumulate a file for classroom use. Please limit photocopies to three pages.

3. Preparation of teaching materials. (25%)

Your textbook is a gold mine of activities for teaching mathematics at all levels of the elementary school. From the chapters designated for each week's reading, select one of the suggested activities. Make or collect all the necessary materials and develop the idea into a form that can be used in your classroom, either as a means to enable you to teach a concept or for students to use as part of a learning centre. If to be used by the teacher, provide a separate sheet giving clear details for its use. If to be used by students, the instructions for use should be part of the package and lettered appropriately. Five sets of materials make up this requirement.

4. Textbooks and curriculum. (20%) (Feb. 22)

Choose one of grades 4, 5, or 6 for this assignment. Choose two textbooks for the grade selected. Examine the B.C. Mathematics Curriculum Guide for that grade level. Using the textbook evaluation form provided, evaluate the texts.

State which textbook you would prefer to use, and why. Judge the adequacy of your preferred text and describe how the second text might be used to teach each of the following topics (core objectives only): (1) numbers, numerals & number operations, (2) geometry, (3) measurement, (4) graphing, and (5) problem solving.

5. Major project. (30%) (March 22)

Each student has differing expectations of any course. The individual project is one way of ensuring that individual goals are met. No requirement has been predetermined for this assignment. However, to ensure that work is begun early and maintained, the following schedule will apply:

- Jan. 25: Agreement on the topic and nature of the project.
- Feb. 22: Interim progress report -- a one-page written summary.
- Mar. 22: Completion and public demonstration.