

SIMON FRASER UNIVERSITY

**Education 475-4
Designs for Learning: Mathematics (Elementary)**

Summer Session, 1990

July 33 – August 10

Time: 8:30 – 12:20 Monday & Wednesday

Location: MPX 8651

Instructor: Waldo Dahl

Phone: 291-

Messages: 291-3395

PREREQUISITE: Educ. 401/402 or equivalent.

OBJECTIVES:

Attitude: To help students gain a more positive attitude toward mathematics and build their confidence in doing mathematics, especially at the concrete or manipulative level.

Method: To help students understand, appreciate, and apply specific methods for and general approaches to teaching mathematics.

Learning Theory: To help students gain perspective on teaching methods and approaches by examining some ideas and principles of learning theory.

Planning: To help students plan mathematics lessons and units in terms of method, learning theory, and curricular scope and sequence.

Evaluation: To help students use evaluation techniques in keeping with the behavioural objectives of their lesson and unit planning in mathematics.

Outline of Topics:

Attribute materials and mathematical thinking

Number and its uses

Number patterns

Developing operations on counting numbers with Cuisenaire rods

Basic facts and their uses – operations on whole numbers

Place value

Whole number algorithms and their uses

Rational numbers

Informal geometry

Measurement and the metric system

Geometry on the geoboard

(The objectives listed above will be linked to each topic.)

Typical requirements:

Each of the topics above will be covered in a two hour lab session and a subsequent two hour session of lecture, discussion, and student presentation. Assignment topics will include: (a) a lab record of all math labs done in the course; (b) lesson and unit planning; (c) a review of professional journals; (d) a classroom presentation; (e) a review of authorized textbooks; (f) a resource file of math games and/or manipulatives.

Textbook:

Fuys, David J. Teaching mathematics in the elementary school Glenview, Illinois: Scott, Foresman and Company.