



Broward Community College

Course Outline

STATUS: A

COMMON COURSE NUMBER: CHD 1338

COURSE TITLE: Math and Science for the Young Child

CREDIT HOURS: 3

CONTACT HOURS BREAKDOWN:

Lecture/Discussion 48

Lab

Other

Contact Hours/Week 3

CATALOG COURSE DESCRIPTION:

Prerequisite: None

Corequisite: None

Designed to foster understanding of the development of mathematical thinking and the mental ability of the preschool child. The science portion will enable the pupil to become familiar with the concept and techniques of "sciencing."

General Education Requirements - Associate of Arts Degree, meets Area(s):
 General Education Requirements - Associate in Science Degree, meets Area(s):

UNIT TITLES:

1. The Development of Mathematical Thought in the Young Child
2. Basics of Math
3. Using the Basics
4. Symbols and Higher Level Activities
5. The Math Environment
6. Sciencing and Child Development
7. Science Activities
8. Structuring the Curriculum for Math and Science Learning

I. Course Overview:

Upon successful completion of this course, the students should be able to:

1. Understand how a child's ability to think mathematically develops, and identify mathematical experiences relevant to their stage of development.
2. Understand sciencing and the basic techniques involved in sciencing.

II. Units:

Unit 1. The Development of Mathematical Thought in the Young Child

General Outcome:

- 1.0 The students should be able to demonstrate an awareness of the young child's perception of mathematical concepts.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 1.1 Discuss how mathematical concepts develop.
- 1.2 Demonstrate methods of teaching mathematical concepts to young children.
- 1.3 Demonstrate an ability to assess a child's mathematical developmental level.
- 1.4 Label examples of Piaget's developmental stage of thought as it applies to mathematical development.

Unit 2. Basics of Math

General Outcome:

2.0 The students should be able to demonstrate an understanding of the language of math.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 2.1 Apply the concepts of matching and comparing.
- 2.2 Demonstrate an ability to plan activities involving number, counting, shape, and space.
- 2.3 Describe activities involving parts and wholes.
- 2.4 Explain methods of demonstrating math and words and concepts to the young child.

Unit 3. Using the Basics

General Outcome:

3.0 The students should be able to demonstrate activities that relate an understanding of the prelogical and logical mathematical concepts.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 3.1 Apply the concepts of ordering.
- 3.2 Demonstrate activities that will measure volume, weight, length, temperature and time.
- 3.3 Create learning activities involving graphics.

Unit 4. Symbols and Higher Learning Activities

General Outcome:

4.0 The students should be able to plan abstract and higher level mathematical activities for young children.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

4.1 Develop structured number symbol activities with children.

4.2 Assess and evaluate a child's ability to use math sets and symbols.

4.3 Create higher level activities for children approaching concrete problems.

Unit 5. The Math Environment

General Outcome:

5.0 The students should be able to introduce the student to the presence of three-dimensional objects in their environment.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

5.1 Identify three-dimensional shapes in the school environment.

5.2 Discuss prisms.

5.3 Distinguish symmetry.

5.4 Distinguish asymmetry.

Unit 6. Sciencing and Child Development

General Outcome:

6.0 The students should be able to explain the sciencing process and its role in child development.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 6.1 Define formal and informal sciencing.
- 6.2 Detail the role of the teacher in planning sciencing activities.
- 6.3 Describe the benefits of science for the young child.
- 6.4 Demonstrate the role of the teacher in planning science activities.

Unit 7. Science Activities

General Outcome:

7.0 The students should be able to demonstrate a mastery of planning appropriate early childhood science activities.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

7.1 Demonstrate an ability to plan activities involving observation and communication.

7.2 Demonstrate an ability to plan activities involving classification and quantification.

7.3 Create activities which involve describing the properness of materials.

7.4 Demonstrate an ability to plan activities involving similarities and differences.

Unit 8. Structuring the Curriculum for Math and Science Learning

General Outcome:

8.0 The students should be able to structure an effective curriculum to meet developmentally appropriate science and math goals for the young child.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 8.1 Identify goals and specific learning objectives to meet the developmental needs of the young child in the areas of math and science.
- 8.2 Demonstrate sequential planning of appropriate math and science activities.
- 8.3 Discuss methods to assess the needs of the individual child in these areas and plan appropriate responses.
- 8.4 Plan an effective science activity unit.
- 8.5 Select appropriate materials for math and science programs for young children.