MORAVIAN COLLEGE
A SMALL NATIONAL TREASURE
1742

EDUC 325, *Mathematics in the Elementary School*
Dr. Sandra Fluck • Spring 2005
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Hours: Monday 2:00-4:00 & Thursday 3:00-4:00 & by appointment

EDUC 325 is designed to help you help children learn important mathematical concepts, skills, and problem solving techniques. In the process it is hoped that your thinking will be challenged and your interest in mathematics stimulated.	Students in EDUC 325 must have: 1. A minimum grade point average of 2.7 2. Completed EDUC 150 and 155 3. Completed MATH 125 with a C or better 4. Passed the PPST in mathematics

COURSE OBJECTIVES:

⇒ You will review the content underlying and included in elementary school mathematics programs.

⇒ You will develop an understanding of the NCTM *Principles and Standards for School Mathematics.*

⇒ You will develop an understanding of the PA Mathematics Standards.

⇒ You will demonstrate competency of basic elementary mathematical operations and procedures.

⇒ You will acquire an understanding of basic elementary mathematical concepts.

⇒ You will develop a comprehensive view of an appropriate mathematics curriculum, goals of instruction, and types of mathematical learning.

⇒ You will learn specific strategies to teach selected content to specific children as well as general teaching strategies appropriate for differentiating instruction for all learners.

⇒ You will develop pedagogical skills: planning, selection of appropriate materials and lessons, managing a mathematics class, diagnosing, and evaluating.

⇒ You will become familiar with a variety of manipulatives.

⇒ You will develop an understanding of how to integrate the use of technology into the study of and the teaching of mathematics.

⇒ You will become conscience of equity issues in the study of mathematics.

⇒ You will develop a positive attitude toward teaching mathematics.

YOUR PERSONAL GOALS: List 3 to 5 goals of your own.

1. _____

2. _____

3. _____

4. _____

5. _____

COURSE SCHEDULE:

Jan 16	Course Introduction and Standards	Chp 1
Jan 18	School Mathematics and Learning Theory	Chp 2, 3
Jan 19	Friday Lab – Pre-Student Teaching Questionnaire Section A 9:00 to 10:00; Section B 1:00 to 2:00 Review basals and *Investigations*	
Jan 23	Problem Solving	Chp 4,5
Jan 25	Assessment	Chp 6
Jan 26	Friday Lab – grade level work time	
Jan 30	Test on Chapters 1-6; Equity Issues and Technology	Chp 7, 8
Feb 1	Early Number Concepts	Chp 9
Feb 2	Friday Lab – grade level work time	
Feb 6	Whole Number Operations and Place Value	Chp 10, 11, 12
Feb 8	Whole Number Computation and Estimation	Chp 13, 14
Feb 9	Friday Lab – grade level work time	
Feb 13	Test on Chapters 9-14; Developing Fraction Concepts	Chp 16
Feb 15	Group Presentation – grade K&1	
Feb 16	Friday Lab – study time	Chp 17, 18, 19
Feb 20	Group Presentation – grade 2	
Feb 22	Group Presentation – grade 3	
Feb 23	Friday Lab – study time	Chp 22, 23
Feb 27	Group Presentation – grade 4	
Mar 1	Group Presentation – grade 5	
Mar 2	Preparation for Pre-Student Teaching Field Experience Section A 9:00 to 10:00; Section B 1:00 to 2:00	

Spring Break - March 3 through March 11

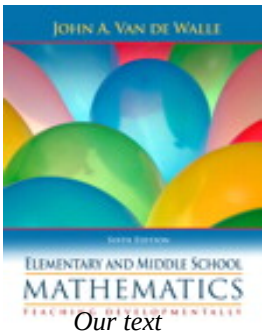
Mar 13	Measurement and Geometry **Section A meets from 10:15 to 12:15**	Chp 20, 21
Mar 15	Test on chapters 16-23 **Section A meets from 10:15 to 12:15**	
Mar 16	Science Olympiad	

Pre-Student Teaching Field Experience - March 19 through April 26

Mar 21	Job Fair – attendance required in the morning
April 27	Preparation for Student Teaching in Fall 2007 (9:00 or 1:00)

REQUIRED TEXT:

Van de Walle, John A., *Elementary and Middle School Mathematics: Teaching Developmentally.* Boston, MA: Pearson Education, Inc., 2007.



Our text

Principles and Standards for School Mathematics

An additional invaluable resource for you to use all semester.

COURSE ACTIVITIES:

1. **Participation in class.** There is a difference between active participation and passive participation. Passive participation is showing up for class, taking notes, and even looking interested in what's going on in class. Active participation is the expectation – that is you are expected to contribute in class by being alert, interested, engaged, and cooperative. Expect to both answer and ask questions. Be anxious to share your thoughts on problem solving and your readings. Show that you are prepared. Talk about what you have read.

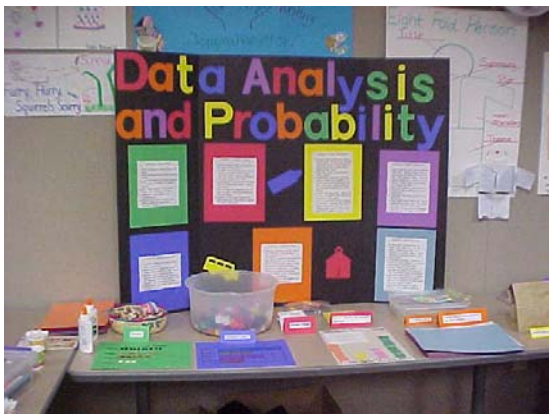
2. **Read and be prepared to discuss all reading assignments**. You will need to show that you are reading assignments through your discussions in class and through your tests.

3. **Study for tests.** You will have four tests on the content of the textbook and related class discussions and presentations. We will go over much of the text for the first 16 chapters. The rest of the chapters are driven by mathematical content such as geometry and measurement. We will have very little time in class to go over this material. Some of it will be covered by your group presentations. You are responsible for all of it. You should form a study group to discuss the content of these chapters and prepare for the final test on chapters 17 through 23.

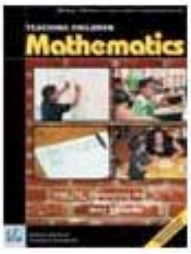
4. **Demonstrate the ability to use a word processing program and the Internet.** All written work that is turned in must be done via word processing. Use a 12-point, easy to read font. Do not use all caps. Use 1 and 1/2 " line spacing and 1" margins all around. All written assignments will be graded for proper grammar and composition. Use the APA Style Format. If you are at all concerned about your writing ability, visit the Writing Center.

5. **Group Project**. Plan, prepare, and present to the class the mathematics curriculum for a given grade level. The presentation must include a brief overview of the curriculum at the grade level, hands-on whole group learning activities, and a learning center designed by each

member of the group. The overview and the whole group activities are a group project and will be graded as a group grade. The overview should be done via **PowerPoint**. The group must summit a **spreadsheet** containing a list of the whole group activities, the objective for each activity, the cognitive domain, the intelligence being used, and the alignment to the PA Math Standards. (If you intend on teaching in New Jersey or another state, you may also include those standards.) The learning centers will be graded individually. Each learning center must have a **minimum** of three activities plus a related website activity and a related literature activity. Each center must be based on a **specific NCTM content standard**. Each person should pick a different content standard. Each individual must submit a **spreadsheet** containing a list of activities for the learning center, the objective for each activity, the cognitive domain, the intelligence being used, and alignment to the PA Math Standards. The whole group activities and the activities in the learning centers should all be different. See the rubric for further details on grading. Each group will have 2 hours to present. The first hour will be devoted to the brief overview and the whole group activities. The second hour will be used to explore the activities at the learning centers. You will need to have enough handouts for each class member. A student worker in the education department will do the copying for you free of charge if you request it 2 days in advance. Students should all expect to do the activities at the centers. Participation is important to your learning. Students will critique each presentation and learning center.



6. **Book reviews**. Summarize and discuss how three different children's books can be used to teach mathematics. Each book must focus on a different **content standard**. Include complete reference material. Scan a picture of the book to include in the reference material. Each review should be 1 to 2 pages in length. The summary of the book should be less than 1 page. The discussion on how to use the book should be 1 to 1&1/2 pages. You will be graded on content and style. **Due date: Feb 15**.

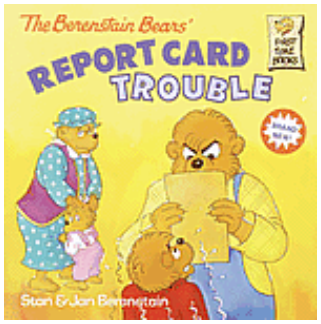


7. **Research.** Research a topic in mathematics related to special needs learners. Use at least three different resources. *Teaching Children Mathematics* is a good journal to use to get ideas. Write a 3 to 5 page summary of what you learned from your research. Reference authors' ideas appropriately using APA. Include a complete bibliography. You will be graded on content and style**. Due date: Feb 8**.

8. **Complete Pre-Student Teaching Field Experience requirements**. A separate syllabus will be distributed in class prior to the beginning of the field experience. You will be expected to fulfill all the requirements and submit evidence of your performance in a portfolio. In addition your cooperating teacher will complete an evaluation of your competency in accordance with the Pennsylvania School Code Chapter 354. Your College instructors will visit you weekly to monitor your progress. You will keep a daily attendance sheet - ***you are required to complete a minimum of 90 hours during this experience*** - and submit that as evidence of your attendance at the conclusion of the experience. Due to holidays in the public schools, you will need to find additional hours to make sure you meet the minimum hours requirement. This experience is expected to totally prepare you for student teaching. You should expect to go beyond the requirements

and prove your dedication and work ethic. **Students who fall short of the expectations will not be approved for student teaching without completing further successful fieldwork.**

COURSE EVALUATION:



Your performance in the following areas will determine your final grade:

Curriculum Project: Overview & Whole Group Activities	15%
Curriculum Project: Learning Center	20%
Book Reviews	10%
Research Paper	10%
Test 1	10%
Test 2	10%
Test 3	10%
Pre-Student Teaching Experience	15%

Your performance in all areas will be graded in accordance with Moravian College's standards of academic achievement as stated in the Student Handbook.

Fulfilling any given requirement does not automatically guarantee an A or full points for an assignment. A's (full points) are given to those students who go beyond the requirements and expectations. Assignments must show evidence of time, effort, originality, and dedication to the research process. Assignments will be graded by the instructor. It is within the instructor's purview to apply qualitative judgment in determining grades for an assignment or for the entire course. You will not be permitted to redo your work for a better grade. There are no additional assignments for extra credit.

The following grade conversions will be used in determining your recorded letter grade for the course:

94-100 %	A	90-93 %	A-
87-89 %	B+	84-86 %	B
80-83 %	B-	77-79 %	C+
74-76 %	C	70-73 %	C-
67-69 %	D+	64-66 %	D
60-63 %	D-	0-59 %	F

ATTENDANCE POLICY:

You are expected to attend every class. Absence for illness will be excused with written verification from a healing practitioner. You need to email the instructor prior to any class that you will be missing. Your final grade in the course will be lowered by one partial letter grade (i.e.: A to A- or B+ to B) for every cut class. Lateness will be noted and count towards cuts.

EXPECTED WORK LOAD:

You should expect to work between 4 and 10 hours per week preparing for this class. This includes reading the text, reading other professional journals and books, doing research online, studying, working on projects, and preparing for class presentations. When you begin your pre-student teaching field experience you will spend your time researching and preparing lessons and activities for your students, journaling, and completing your portfolio.

EXTRA CREDIT:

Make sure you know the requirements for all assignments and have fulfilled them prior to submitting your assignments. You may not redo assignments for better grades. There are no extra assignments for extra credit.

WRITING CENTER:

You are encouraged to submit your assignments to someone at the Writing Center for proofing prior to submitting them for grades.

STUDY GROUPS:

You are encouraged to form a study group to discuss the material in your textbook and to help you prepare for tests.

SPECIAL NEEDS:

Any student who wishes to disclose a disability and request accommodations under the Americans with Disabilities Act (ADA) for this course first MUST meet with either Mrs. Laurie Roth in the Office of Learning Services (for learning disabilities and/or ADD/ADHD) or Dr. Ronald Kline in the Counseling Center (for all other disabilities).

ACADEMIC HONESTY POLICY:

The Moravian College policy on academic honesty will be followed. A copy of the policy is included on the Blackboard site and in the Student Handbook. A copy of the College guidelines concerning plagiarism is also included on the Blackboard site.

BLACKBOARD:

We will be using **Blackboard**. Register immediately. The password is mathisfun. Make sure you check the sight daily for updates. If class needs to be canceled due to weather, I will post it on Blackboard.

MYLABSCHOOL:

We will be using Pearson's mylabschool website. Register immediately using the information sheet attached to your syllabus.

CELL PHONES:

Make sure all cell phones, pagers, etc. are turned off prior to the beginning of class.

This syllabus is subject to change.