MATH 345-1
Unlocking the Magic of Math for Future Educators

Tuesday: 9:30- 10:45 am – Virtual and Camera on Via Zoom
Thursday: Online - Recording

Instructor: Dr. Sinan Kanbir **(Dr. Kanbir)**   **Email:** skanbir@uwsp.edu
Office Hours: Wednesdays 4:00-5:00 pm (Zoom)   Thursday: 9:30-10:30 am or by appointment

Course Description:

MATH 345. Fundamental Mathematical Concepts for Elementary Teachers III 3 cr. Topic from rational numbers (fractions) and real numbers with an emphasis on problem-solving, algebraic reasoning, proportional reasoning, probability, statistics, and data analysis. Prereq: Math 338.

Course Purpose and Goals:

You are about to begin what I hope is a very exciting course for you—a course in which you will come to a deeper understanding of the important mathematical concepts and ideas in elementary school mathematics in particular GRADE 3-4-5 (Math 345☺).

An overall goal of this course is to provide a rich perspective and background in rational numbers (fraction concepts), problem solving, data analysis, proportional and algebraic reasoning, and connection between arithmetic and algebra so that the related content can be taught knowledgeably and confidently. For this to happen, the content of each course is stretched beyond the level that generally might be taught in a K-8 setting.

This course is meticulously crafted to introduce you to what the National Council of Teachers of Mathematics (NCTM) identifies as "*worthwhile mathematical tasks*." These tasks are not just exercises; they are thoughtfully designed experiences that foster deep mathematical understanding and skills. Let's delve into the three pivotal characteristics that make these tasks truly worthwhile:

Cognitive Engagement with Significant Mathematics: Worthwhile tasks engage students beyond rote memorization or mechanical procedures. They are invitations to think critically and reason logically.Engaging with these tasks enriches students' understanding of mathematical concepts and nurtures essential mathematical practices.

Relevance and Engagement:The tasks are crafted to resonate with students, making mathematics both accessible and intriguing.Drawing from the rich mathematical problems in our grade 4-6 books, the tasks mirror real-life scenarios that students can relate to, enhancing their engagement and curiosity.

Inclusive Challenge:Each task is a balanced challenge, designed to be accessible yet stimulating for every student.The richness of the tasks ensures that all students, regardless of their proficiency level, find the tasks engaging and attain a sense of accomplishment through their participation.

As an educator, your approach to teaching is significantly influenced by your own learning journey. You might find yourself gravitating towards one of two predominant teaching styles:
Way 1: Teaching from Personal Experience:You may teach in a manner that mirrors your own learning experiences, using methods that resonated with you as a student.
Way 2: Teaching as Professionally Guided:Alternatively, your teaching style may be shaped by professional training and the pedagogical strategies you were taught to employ.
Your unique teaching style, coupled with the thoughtful integration of worthwhile mathematical tasks, creates a dynamic and inclusive learning environment. This environment not only fosters mathematical understanding but also cultivates a culture of curiosity, critical thinking, and a love for learning among student.

You must participate mentally in the learning process. This participation includes studying the material; working with others; struggling with non-routine problems; reasoning about and solving problems; symbolically representing mathematical thinking and reasoning; listening to others; reflecting about what you are doing; as well as the more typical tasks of taking examinations and doing homework.

Required Textbook/Resources:
Beckmann, S. (2018). [5th Edition] *Mathematics for elementary teachers with activities*. Boston: Pearson.
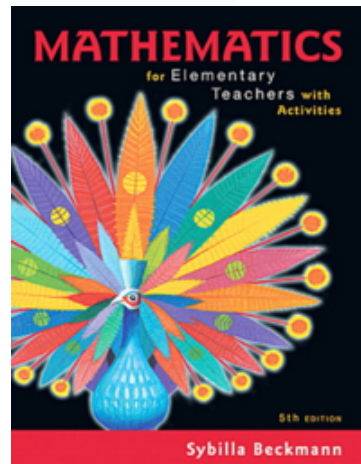
Course Materials/ Resources /Not Required- Reading materials will be provided.
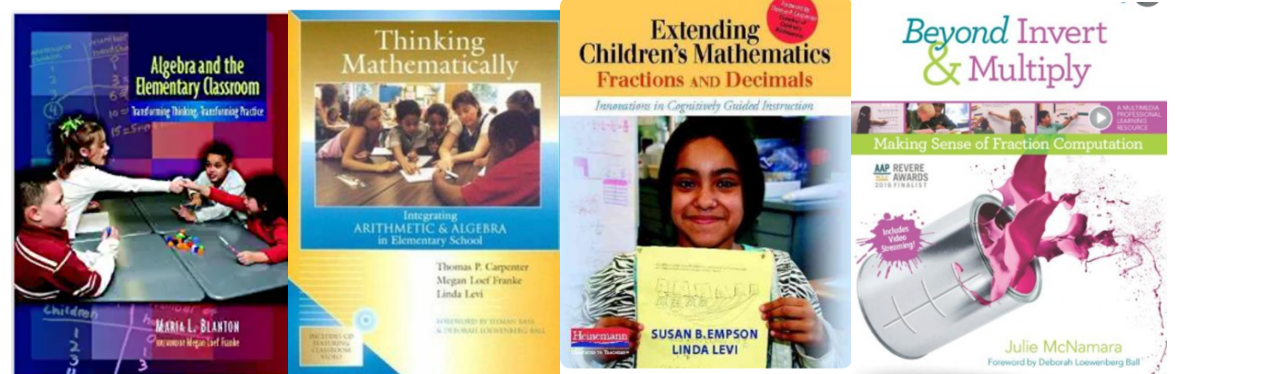
1. McNamara, J. (2015). Beyond invert and multiply: Making sense of fraction computation. CA: Math Solutions.
2. Blanton, M. L. (2008). Algebra in elementary classrooms: Transforming thinking, transforming practice. Portsmouth, NH: Heinemann.
3. Thomas P. Carpenter, Megan Loef Franke and Linda Levi (2003). *Thinking mathematically: Integrating arithmetic and algebra in the elementary school*.
4. Empson, S. B., & Levi, L. (2011). Extending children's mathematics: Fractions and decimals

Online Resources

1. https://dpi.wi.gov/sites/default/files/imce/standards/New%20pdfs/MathematicsStandards2021.pdf
2. https://buildmathminds.com/resources
3. https://curriculum.illustrativemathematics.org/HS/index.html
4. https://www.teachingchannel.com/
5. https://www.youcubed.org/
6. https://www.openmiddle.com/
7. http://www.wodb.ca/
8. https://openupresources.org/math-curriculum/6-8-math/

Course Structure and Tentative Requirements

Attendance (20 points): In this course, attendance and active participation are key. All virtual classes require your presence with your camera turned on. Absences from two or more sessions without a legitimate excuse will lead to the issuance of a disposition concern form. Please note, exiting a virtual meeting is also considered an absence.

Participation (20 points): Active participation is key in this course. This means not just listening and reading (receptive learning) but also speaking and writing (expressive learning). You're expected to engage in both group discussions and class-wide reports. Your grade will reflect your willingness to share ideas and learn from both the instructor and your peers. You should aim to present solutions your solutions and do your assigned Teaching Aid (TA) job actively during the semester.

Read-Watch-Write/Reflection (80 points): Throughout the semester, we'll have assigned readings from various sources. You'll need to submit reflection papers about four to five times. The goal is to help you cultivate a habit of self-reflection on your learning and thinking, a skill you may find valuable in your future teaching career.

Homework assignments-Problem Sets: (80 points) You'll be required to complete around ten homework assignments over the course of the semester. These will be digital submissions—no need to print anything out. The assignments will include activities from your textbook as well as materials provided by me. These tasks aim to deepen your understanding of the topics we discuss in class. Specific details for each assignment will be provided when they are assigned.

In-Class Works (60 points): Your participation in virtual meetings will be evaluated during select sessions. No makeup opportunities will be available for these in-class activities; you must be present to earn credit.

Biweekly Quizzes (50 points): Each week, you'll be evaluated on the week's topic through Canvas. These evaluations will cover both homework and in-class materials and will be available in both interactive and digital upload formats.

Quizzes (60 points): There will be two quizzes scheduled regularly throughout the semester via Canvas. Each quiz will be announced in one-week advance.

Mid-Term Exam (50 points): The midterm exam is scheduled for the latter half of the semester and will take up one full 75-minute class session. A study guide will be provided to help you prepare.

Final Examination (80 points): The final examination time will be during finals week. More information about the content will be provided.

E. Grading

This 3-credit hour class requires 6–8 hours of outside-of-class study per week. Make sure you schedule and put in those hours consistently throughout the semester. Your course grade will be calculated on a percentage basis (number of points earned out of the number possible) and assigned a corresponding letter:

93-100% = A	90- 92 % = A-	
86-89% = B+	83-85% = B	80-82% = B-
76-79% = C+	73-75% = C	70-72% = C-
67-69% = D+	63-66% = D	Less than 63% = F

I will not use any kind of judgments to lower your final grade.

MATH 345 -Point Distribution (Dr. Kanbir)

Evaluation Item	Points
Attendance	20
Participation	20
Read-Watch/Write-Reflection	80
Homework Assignments	80
In-Class work	60
Biweekly Quizzes	50
Scheduled Quizzes	60
Mid-Term Exam	50
Final Exam	80
Total	500

During our virtual meetings, it's important to stay focused to get the most out of the class. Using your cell phone for activities like texting, social networking, or browsing the internet is considered unprofessional and disruptive. Such behavior not only affects your own learning but can also impact the group's overall experience. Engaging in these activities may result in a disposition concerns form being filed against you. Therefore, please keep distractions to a minimum and remain present throughout the meeting.

Disposition Concerns: The Mathematical Sciences Department is committed to the high-quality preparation of future teachers, and we expect you to approach your training with equal seriousness. Your performance will be evaluated based on several key disposition indicators:

Collaboration: Ability to work effectively in a team.

Honesty/Integrity: Demonstrating truthfulness and moral excellence.

Respect: Showing consideration for yourself and others.

Emotional Maturity: Managing your emotional state to stay engaged.

Reflection: Ability to evaluate past decisions for future improvement.

Responsibility: Demonstrating accountability and sound judgment.

Failure to meet these expectations, particularly through poor attendance, consistent tardiness, or not completing assignments, may result in a disposition concern form being filed against you. These behaviors are considered signs of a lack of commitment and responsibility.

If you have a documented disability and require accommodations, please contact Disability Concerns at 715-346-3365 or email datctr@uwsp.edu. You can also fill out a Request for Services form available on their website. For additional resources, visit the Assistive Technology website.