

MAT-900: Math Activities for the Primary Grades

Independent Study Online Course Syllabus

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Number of Graduate Semester Units: 3 units
Target Audience: K – 3rd grade teachers
Course Access: <https://connect.fresno.edu>

Course Description

Math Activities for the Primary Grades is designed for K-3 teachers who want to inspire their students and make math both fun and meaningful. By combining theory with innovative teaching strategies, this course offers engaging hands-on activities that help students build strong mathematical foundations while meeting diverse learning styles and needs. Teachers will gain practical tools that not only support proficiency but also prepare students for achievement testing. Aligned with national, state, and local standards, the lessons seamlessly fit into any existing math program. Plus, you'll have the opportunity to collaborate with fellow teachers and the instructor in a dynamic online setting. For teachers not currently in the classroom, alternative assignments are provided to ensure everyone can participate fully.

Note: There is no book required for this course.

Required Texts and Course Materials

Note: There is no required textbook for this course. Everything you need will be available online in the links and files found in this course. Students do not have to purchase any materials, nor will any be sent. An office productivity suite such as Microsoft Office is recommended but not required. A wider range of free alternatives, such as the Open Office or Google Docs, can be used as an alternative.

Math Activities for the Primary Grades: These activities by Curriculum Services Associates are a collection of 30 math activities appropriate for use in the primary grades. You may want to download and print the PDF file found in the course.

In addition, course participants will engage with relevant online resources that support course content and encourage further investigation.

Many of the activities require the use of game markers, pawns, and spinners. If you do not have these manipulatives in your classroom, you will find some sites for purchasing manipulatives and finding free resources in the course. Additionally, the instructor can provide you with a simple collection of transparent chips, transparent spinners, pawns, and a transparent clock. If you would like one of these, free of charge, please email your mailing address to (mary.bennett@fresno.edu.)

Online Resources: Relevant online resources that support the course content and encourage further investigation will be available throughout the course assignments. Active hyperlinks are utilized throughout the course and will link to the appropriate information when clicked. These include videos, podcasts, worksheets, online activities, journal articles and other resources.

Canvas: This course will be delivered totally online. Canvas is a web-based learning management system (LMS) that provides students access to online resources, documents, videos, assignments, quizzes, forums, etc. Canvas is easy to learn and has a user-friendly interface.

Course Dates

Self-paced; students may enroll at any time and take up to one year, from the date of registration, to complete assignments. Students may complete assignments in no less than three weeks for a 3-unit course (one week per unit).

National Standards Addressed in This Course

National Board for Professional Teaching Standards (NBPTS)

(<http://www.nbpts.org/standards-five-core-propositions/>)

First published in 1989 and updated in 2016, [*What Teachers Should Know and Be Able to Do*](#) articulates the National Board's Five Core Propositions for teaching. The Five Core Propositions - comparable to medicine's Hippocratic Oath — set forth the profession's vision for accomplished teaching. Together, the propositions form the basis of all National Board Standards and the foundation for National Board Certification. Course assignments have been designed so students can demonstrate excellence against these professional teaching standards whenever possible.

- Proposition 1: Teachers are committed to students and their learning
- Proposition 2: Teachers know the subject they teach and how to teach those subjects to students
- Proposition 3: Teachers are responsible for managing and monitoring student learning
- Proposition 4: Teachers think systematically about their practice and learn from experience
- Proposition 5: Teachers are members of learning communities

Number and Operations Standard

Understand numbers, ways of representing numbers, relationships among numbers, and number systems. In addition, the activities in the course manual concentrate on the understanding of patterns, measurement, and data and their relationship to numbers, which are reflected in the following standards:

Algebra: Understand patterns, relations, and functions

Measurement Standard: Understand measurable attributes of objects and the units, systems, and processes of measurement

Data Analysis and Probability Standard: Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them

Furthermore, as students engage in activities from the course manual they will explore patterns, focus on problem solving process, and investigate realistic applications which align with the

Process Standards of *Problem Solving, Reasoning and Proof, Communication, Connections, and Representation*.

Common Core State Standards (CCSS) (www.corestandards.org)

The standards are:

- Aligned with college and work expectations.
- Clear, understandable and consistent.
- Include rigorous content and application of knowledge through high-order skills.
- Build upon the strengths and lessons of current state standards.
- Informed by other top performing countries so that all students are prepared to succeed in our global economy and society.
- Evidence and researched based.

The activities in the course manual, *Math Activities for the Primary Grades*, address Common Core State Standards in the following domains:

- Operations and Algebraic Thinking
- Numbers & Operations in Base 10
- Measurement & Data
- Geometry

As you create lessons for your students you will be exploring the Common Core Standards, or the standards you are required to use, and identify how the lessons and activities you implement and develop align with those standards. The content of the course will also provide you with many resources for locating lessons that address the Common Core Standards by Domain.

Continuing Education Program Student Learning Outcomes

CE 1	Demonstrate proficient written communication by articulating a clear focus, synthesizing arguments, and utilizing standard formats in order to inform and persuade others, and present information applicable to targeted use.
CE 2	Demonstrate comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
CE 3	Reflect on their personal and professional growth and provide evidence of how such reflection is utilized to manage personal and professional improvement.
CE 4	Apply critical thinking competencies by generating probing questions, recognizing underlying assumptions, interpreting and evaluating relevant information, and applying their understandings to the professional setting.
CE 5	Reflect on values that inspire high standards of professional and ethical behavior as they pursue excellence in applying new learning to their chosen field.
CE 6	Identify information needed in order to fully understand a topic or task, organize that information, identify the best sources of information for a given enquiry, locate and critically evaluate sources, and accurately and effectively share that information.

Course Student Learning Outcomes (C-SLO)

Student Learning Outcomes for This Course By the end of this course student will be able to:		National Standards Addressed*	CE-SLO Addressed**
C-SLO 1	Analyze and reflect on how the standards guide teaching practices.		
C-SLO 2	Critically evaluate evidence-based teaching practices and identify those that are most effective for fostering student learning in the classroom.		
C-SLO 3	Develop comprehensive lesson plans that incorporate effective teaching strategies and support students understanding of key math concepts.		
C-SLO 4	Explore the importance of collaboration among teachers, reflecting on how collaborative efforts can enhance both teaching strategies and student success.		
C-SLO 5	Evaluate key research findings on current trends in mathematics education.		

* Please refer to the section on **National Standards Addressed in This Course**

** Please refer to the section on **Continuing Education Student Learning Outcomes**

Topics, Assignments, and Activities

Module Title	Module Assignments and Activities	Points Possible
Home Page	- Welcome Video - Course Syllabus - Policies and Procedures - Introduce Yourself Forum	
Module 1: Getting Started	1.1 Discussion: Introductions	10
Module 2: Standards Based Instruction	2.1 Assignment: Standards-Based Instruction 2.2 Discussion: Standards in the Classroom	20 10
Module 3: Evidence Based Teaching Practices	3.1 Assignment: Evidence-Based Teaching Practices Reflection 3.2 Discussion: Evidence-Based Teaching Practices	20 10
Module 4: Instructional Activities	4.1 Assignment: Instructional Activities 4.2 Discussion: Instructional Activities Reflection	100 10
Module 5: Activity Development	5.1 Assignment: Activity Development 5.2 Discussion: Activity Development Reflection	20 10
Module 6: Teacher Collaboration	6.1 Assignment: Teacher Collaboration Presentation 6.2 Discussion: Sharing Collaboration Presentations	20 10

Module Title	Module Assignments and Activities	Points Possible
Module 7: Evolving Trends in Math Instruction and Learning	7.1 Discussion: Math Education Research	20
Module 8 Final Reflection	8.1 Discussion: Final Reflection	10
Course Wrap-up – Grading and Evaluation	- Final Reflection Forum - Course Evaluation - Course Completion Checklist - Grade Request / Transcript Request	
	TOTAL POINTS	270 points

Grading Policies, Rubrics, and Requirements for Assignments

Grading Policies

- Assignments will be graded per criteria presented in the course rubrics.
- A = 90-100% and B = 80-89%, (anything below 80% will not receive credit.)
- The discernment between an A or a B letter grade is at the discretion of the instructor based on the quality of work submitted (see course rubrics).
- Coursework falling below a B grade will be returned with further instructions.
- All assignments must be completed to receive a grade and are expected to reflect the quality that teacher-training institutions require of professional educators. If completed assignments do not meet this standard, students will be notified with further instructions from the instructor.

Grading Rubric

Grade	Percentage	Description	Rubric
A	90-100%	Excellent	Meets all course / assignment requirements with significant evidence of subject mastery and demonstration of excellent graduate level professional development scholarship.
B	80-89%	Very Good	Adequately meets criteria for all course/assignment requirements - demonstrates subject competency with very good graduate level professional development scholarship.
NC	Below 80%	Unacceptable	Does not meet the minimum criteria for all course/assignment requirements and demonstrated little, if any, evidence of acceptable graduate level professional development scholarship.

Writing Requirements

- **Superior:** Writing is clear, succinct, and reflects graduate level expectations. Clearly addresses all parts of the writing task. Maintains a consistent point of view and organizational structure. Include relevant facts, details, and explanations.
- **Standard:** Writing is acceptable with very few mistakes in grammar and spelling. Addresses most parts of the writing task. Maintains a mostly consistent point of view and organizational structure. Include mostly relevant facts, details, and explanations.

- **Sub-standard:** Writing contains noticeable mistakes in grammar and spelling. Does not address all parts of the writing task. Lacks a consistent point of view and organization structure. May include marginally relevant facts, details, and explanations.

Lesson Plan Requirements

- **Superior:** Instructional goals and objectives clearly stated. Instructional strategies appropriate for learning outcome(s). Method for assessing student learning and evaluating instruction is clearly delineated and authentic. All materials necessary for student and teacher to complete lesson clearly listed.
- **Standard:** Instructional goals and objectives are stated but are not easy to understand. Some instructional strategies are appropriate for learning outcome(s). Method for assessing student learning and evaluating instruction is present. Most materials necessary for student and teacher to complete lesson are listed.
- **Sub-standard:** Instructional goals and objectives are not stated. Learners cannot tell what is expected of them. Instructional strategies are missing or strategies used are inappropriate. Method for assessing student learning and evaluating instruction is missing. Materials necessary for student and teacher to complete lesson are missing.

Discussion Forum Requirements

- **Excellent (90-100%):** The post demonstrates a clear understanding of the topic, with thoughtful, well-organized responses. Ideas are fully developed, supported by evidence or examples, and engage with the prompt or peers' ideas in a meaningful way.
- **Very Good (80-89%)** The post addresses the topic with a good understanding. Contributions show some critical thinking, though they may lack depth or detail in places. Examples or evidence are present, but some ideas could be expanded.
- **Unacceptable (Below 80%):** The post does not meet expectations. It may show a basic understanding but lacks detail, development, or engagement with the topic. Responses might be brief, vague, or unclear, with minimal support or little to no evidence provided.

Instructor/Student Contact Information

Throughout the course participants will be communicating with the instructor and their classmates on a regular basis using asynchronous discussion forums. A virtual office is utilized for class questions and students are provided with instructor contact information in the event they want to make email or phone contact. In addition, students are encouraged to email or phone the instructor at any time. Students will also receive feedback on the required assignments as they are submitted.

Discussion Forums

Participation is an important expectation of this course and all online courses. Online discussions promote reflection and analysis while allowing students to appreciate and evaluate positions that others express. While students may not be engaging with the same students throughout this course they will be expected to offer comments, questions, and replies to the discussion question whenever possible. The faculty role in the discussion forum is that of an observer and facilitator.

Coursework Hours

Based on the Carnegie Unit standard, a unit of graduate credit measures academic credit based on the number of hours the student is engaged in learning. This includes all time spent on the course: reading the textbook, watching videos, listening to audio lessons, researching topics, writing

papers, creating projects, developing lesson plans, posting to discussion boards, etc. Coursework offered for FPU Continuing Education graduate credit adheres to 45 hours per semester unit for the 900-level courses. Therefore, a student will spend approximately 135 hours on a typical 3-unit course.

Services for Students with Disabilities

Students with disabilities are eligible for reasonable accommodations in their academic work in all classes. In order to receive assistance, the student with a disability must provide the Academic Support Center with documentation, which describes the specific disability. The documentation must be from a qualified professional in the area of the disability (i.e. psychologist, physician or educational diagnostician). Once documentation is on file, arrangements for reasonable accommodations can be made. For more information and for downloadable forms, please go to <https://www.fresno.edu/departments/disability-access-education>.

Plagiarism and Academic Honesty

All people participating in the educational process at Fresno Pacific University are expected to pursue honesty and integrity in all aspects of their academic work. Academic dishonesty, including plagiarism, will be handled per the procedures set forth in the Fresno Pacific University Catalogue - <https://www.fresno.edu/students/registrars-office/academic-catalogs>

Technology Requirements

To successfully complete the course requirements, course participants will need Internet access, can send and receive email, know how to manage simple files in a word processing program, and have a basic understanding of the Internet. Please remember that the instructor is not able to offer technical support. If you need technical support, please contact your Internet Service Provider.

Getting Help with Canvas: If you need help with Canvas, please contact the FPU Help Desk by phone: (559) 453-3410 or email: helpdesk@fresno.edu. Help is available Mon-Fri 8:00 am to 7:00 pm.

Final Course Grade and Transcripts

When all work for the course has been completed, students will need to request their final grade by accessing the form at ce.fresno.edu/grade-request. Once the instructor receives the request and posts their final grade, students will receive an email communication from the University. Please allow at least two weeks for the final grade to be posted before you order your transcripts online.

University Policies and Procedures

Students are responsible for becoming familiar with the information presented in the Academic Catalog and for knowing and observing all policies and procedures related to their participation in the university community. A summary of university policies may be found on the university website at <https://www.fresno.edu/departments/registrars-office/academic-catalogs>.

Fresno Pacific University Student Learning Outcomes

Student Learning Outcomes Oral Communication: Students will <i>exhibit</i> clear, engaging, and confident oral communication – in both individual and group settings – and will critically <i>evaluate</i> content and delivery components.
Written Communication: Students will <i>demonstrate</i> proficient written communication by <i>articulating</i> a clear focus, <i>synthesizing</i> arguments, and utilizing standard formats in order to <i>inform</i> and <i>persuade</i> others.
Content Knowledge: Students will <i>demonstrate</i> comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
Reflection: Students will <i>reflect</i> on their personal and professional growth and <i>provide evidence</i> of how such reflection is utilized to manage personal and vocational improvement.
Critical Thinking: Students will <i>apply</i> critical thinking competencies by <i>generating</i> probing questions, <i>recognizing</i> underlying assumptions, <i>interpreting</i> and <i>evaluating</i> relevant information, and <i>applying</i> their understandings to new situations.
Moral Reasoning: Students will <i>identify</i> and <i>apply</i> moral reasoning and ethical decision-making skills, and <i>articulate</i> the norms and principles underlying a Christian world-view.
Service: Students will <i>demonstrate</i> service and reconciliation as a way of leadership.
Cultural and Global Perspective: Students will <i>identify</i> personal, cultural, and global perspectives and will employ these perspectives to <i>evaluate</i> complex systems.
Quantitative Reasoning: Students will accurately <i>compute</i> calculations and symbolic operations and <i>explain</i> their use in a field of study.
Information Literacy: Students will <i>identify</i> information needed in order to fully understand a topic or task, <i>explain</i> how that information is organized, <i>identify</i> the best sources of information for a given enquiry, <i>locate</i> and critically <i>evaluate</i> sources, and accurately and effectively <i>share</i> that information.