Teaching Channel
With Learners Edge

Your Education Ally.

By Teachers, *For Teachers.*

Course Syllabus

Name:
Date:

TeachingChannel.com | 1-(877) 394-4930
2805 Dodd Rd. Eagan, MN 55121

Teaching Channel
With Learners Edge

Today is a Great Day to Learn Something New!

Professional learning to meet your needs.

Engaging and applicable, ELEVATE courses are the core of Teaching Channel. We offer a variety of courses that meet the continuing education needs of teachers from across the country. Teaching Channel courses work perfectly for license renewal needs, working to move up through salary schedules, or for professional learning to support improved student outcomes.
Teaching Channel provides continuing education graduate credit courses that have been approved and endorsed by regionally accredited colleges and universities from across the United States.

Current University Partners (See a current list of academic partners on our website)
Continuing Education courses are approved by our regionally accredited (HLC, NECHE, WSCUC, NWCCU) partners by review of syllabi, content, and coursework expectations.
(Indicate anticipated university/college partner below, if applicable.)

Course Creation and Evaluation:

Courses are created and evaluated by educators with a master's degree or higher in an education-related field and five or more years of classroom experience in PreK-12th grade education. Course evaluators provide personalized, specific feedback for assignments and rubric-based grading aligned with best practices in professional education.

Spring Term	Summer Term	Fall Term
Registrations Accepted	Registrations Accepted	Registrations Accepted
July 16-March 15	December 16-July 15	March 16-October 22
Coursework Due*	Coursework Due*	Coursework Due*
April 15	August 15	November 15

*Or first business day after the 15th if due date falls on a weekend.

Coursework Details

The Rigor of Teaching Channel Graduate-Level, Continuing Education Courses.

Professional Learning Model

Our research-based Professional Learning Model is used to design ELEVATE continuing education courses. The model includes five elements used to guide professional learning and to positively impact student outcomes:

Course Content

ELEVATE Courses are self-paced, and per standard practice in the field, each credit carries the equivalent of fifteen hours of content and coursework. Participants explore resources that include a solid balance of research and applicability. All courses feature video clips, research-based articles, and interactive elements to enhance and support learning. To receive credit, participants must complete the following requirements according to expectations outlined in our course rubric:

Response Questions: Connect new learning from course resources to current pedagogy.

Resource Review: Find resources related to the course topic to extend learning and solve problems of practice.

Applications: Complete a variety of assignments encouraging participants to implement new learning in their classrooms or schools.

Reflection: Write a reflection paper that activates critical thinking and inspires the transformation of future professional practice.

All coursework is to be completed in the Teaching Channel online environment.

Course Name	Exploring Real-World Connections in Math
Course Number	OL 5523
Course Credits	3 or Flex Credit

NOTE: This syllabus is an outline of the course requirements and is subject to change; the coursework will be completed and submitted in the online environment where you will have full access to a variety of media, links, and other online tools required to satisfactorily complete this course.

Course Description:

Math teachers may hear the refrain, "When are we ever going to use this?" a bit too often, and this course will provide you with a fantastic answer! You'll take a look at whether or not math instruction needs a "makeover" to better address student learning needs. We'll also explore the concept of growth "mathematical mindsets" and how they can counter math myths and misconceptions. You'll create a SMART Goal for inclusive math instruction, review strategies to increase culturally mindful contexts and relevancy in your math instruction, and discuss various ways to infuse mathematical modeling in your teaching. You'll end the course with a solid understanding of connections between math and the real world!

Course Objectives:

1. Use prompts about teaching and learning in math to describe assumptions and insights of practitioners, researchers and self, including how the information relates to professional education practice and growth.
2. Determine whether math needs a "makeover" to better address student learning needs.
3. Understand how growth "mathematical mindsets" counter math myths and misconceptions.
4. Create a SMART Goal for increasing culturally mindful contexts and relevancy in your math instruction.
5. Explore ways to infuse additional mathematical modeling in math instruction.
6. Learn additional strategies to make math relevant and meaningful.

Required Reading:

All articles and other resources are linked in the online environment, within their respective assignments.

All coursework is to be completed in the Teaching Channel online environment.

Knowledge Base:

Knowledge base, in part, is affirmed in the writing and research of these references:

(n.d.). youcubed - Inspire ALL Students with Open, Creative Mindset Mathematics. Retrieved May 17, 2023, from http://www.youcubed.com

Boaler, J. (2022). *Mathematical Mindsets: Unleashing Students' Potential Through Creative Mathematics, Inspiring Messages and Innovative Teaching*. Wiley.

Dixon, J. (2023). *The Fact Tactics Fluency Program: Building Reasoning Skills for Multiplication in Grades 3-6 (Teach Students More Than Fact Recall. Help Them Learn to*. SOLUTION TREE.

Jones, S. M., Matthews, L. E., & Parker, Y. A. (2022). *Engaging in Culturally Relevant Math Tasks: Fostering Hope in the Elementary Classroom*. Corwin Press.

Kue, D. (2021). *Solved: A Teacher's Guide to Making Word Problems Comprehensible*. Atmosphere Press.

Soto, I., Sagun, T., & Beiersdorf, M. (2023). *Equity Moves to Support Multilingual Learners in Mathematics and Science, Grades K-8*. Corwin Press.

Strong, S., & Butterfield, G. (2022). *Dear Math: Why Kids Hate Math and What Teachers Can Do About It*. Times 10 Publications.

All coursework is to be completed in the Teaching Channel online environment.

Teaching Channel Course Rubric

All course submissions must meet general graduate level standards through the use of correct grammar, spelling, and mechanics. Each paragraph should be clearly organized and include 5 sentences or more. If work does not meet the above criteria, it will be returned to the student for resubmission.

Rubric	A Grade = Outstanding Performance	B Grade = Target Performance	Below Target Performance
Statement of Intention and Awareness	The evaluator will only review the Statement of Intention and Awareness for a response to each prompt. If a student does not respond to each prompt, the Statement will be returned to the student for resubmission. The student's Statement of Intention and Awareness will be evaluated as part of the Reflection.		
Investigation: Read and Respond	Coursework thoroughly and accurately addresses all question components by summarizing key concepts from readings. In at least half of the responses, the participant also makes inferences related to professional practice or supports answers with professional experiences.	Coursework thoroughly and accurately addresses all question components by summarizing key concepts from readings.	Coursework will be returned to student for resubmission with evaluator instructions if it does not meet target performance.

All coursework is to be completed in the Teaching Channel online environment.

Investigation: Resource Review Rubric	A Grade = Outstanding Performance	B Grade = Target Performance	Below Target Performance
Summary of Resource	Coursework summarizes the main ideas presented in the resource and includes at least one instance of critical analysis (i.e. asks questions, looks for gaps in information, disputes contradictions, etc.)	Coursework summarizes the main ideas presented in the resource.	Coursework will be returned to student for resubmission with evaluator instructions if it does not meet target performance.
Relation to Personal Assumptions or Course Content	Coursework provides more than one detailed example of how the resource supports or challenges personal assumptions and/or course content.	Coursework provides one example of how the resource supports or challenges personal assumptions and/or course content.	Coursework will be returned to student for resubmission with evaluator instructions if it does not meet target performance.
Impact on Professional Practice	Coursework provides more than one clear explanation of how the information in the resource could impact professional practice.	Coursework provides one explanation of how the information in the resource could impact professional practice.	

All coursework is to be completed in the Teaching Channel online environment.

Application Rubric	A Grade = Outstanding Performance	B Grade = Target Performance	Below Target Performance
Planning, Development and Execution	Coursework shows complete planning, development and/or execution of application, clear articulation of details and inclusion of polished required artifacts.	Coursework shows complete planning, development and/or execution of application and inclusion of required artifacts.	Coursework will be returned to student for resubmission with evaluator instructions if it does not meet target performance.
	Coursework includes creative or innovative application of new knowledge and skills from course content to professional practice.	Coursework includes application of new knowledge and skills from course content to professional practice.	
Written Requirements	Coursework provides clear, logical, and organized responses to any writing prompts in the application. It also includes at least one detailed connection to course objectives, student learning goals or transformation of professional practice.	Coursework provides clear, logical, and organized responses to any writing prompts in the application.	

All coursework is to be completed in the Teaching Channel online environment.

Reflection Rubric	A Grade = Outstanding Performance	B Grade = Target Performance	Below Target Performance
Connection to Statement of Intention and Awareness	Coursework includes an evaluation of both learning goals articulated in the participant's Statement of Intention and Awareness from Module 1. Participant includes one future learning goal related to course content.	Coursework includes an evaluation of one of the learning goals articulated in the participant's Statement of Intention and Awareness from Module 1.	Coursework will be returned to student for resubmission with evaluator instructions if it does not meet target performance.
Summary of Learning	Coursework includes three or more detailed connections to specific assignments completed or course content viewed (assigned readings or videos).	Coursework includes two general connections to course content.	
Description of Positive Influence or Transformation	Coursework includes two or more specific ideas for changes in one's professional practice with timelines. OR Coursework includes two or more detailed action steps with timelines for positively impacting other stakeholders.	Coursework includes one general idea for changes in one's professional practice. OR Coursework includes one action step for positively impacting other stakeholders.	

All coursework is to be completed in the Teaching Channel online environment.

Module 1

1. Tell us about yourself!

Before we begin with course content, write 1 sentence about yourself. You will be asked to include this background in each of the modules submitted for the course. This provides context for your responses and enables the course evaluator to respond with feedback tailored to your specific role in education. Here are three examples to guide you:

- I'm a 4th grade teacher and teach all subjects.
- I'm a middle school counselor.
- I'm out of the classroom on leave this year, but next year I'll be back teaching 9th grade science.

2. Statement of Intention and Awareness

At Learners Edge, we want your learning to be purposeful and applicable to your professional practice. To do that, research says learners need to first identify their motivations and goals. Next, learners assess prior knowledge and previous experiences so they can create deeper connections to the course material.

Using the guidelines below, please address the following in your Statement of Intention and Awareness, in a total of two paragraphs, or more:

1. Share your motivation for learning about relevance and context when teaching math.
2. Summarize your previous knowledge or experience with relevance and context when teaching math.
3. List your own two learning goals for the course.

In Module 1, your evaluator will review your Statement of Intention and Awareness to ensure it is complete. It will be graded within your Reflection Requirement in Module 3, where you'll revisit your Statement of Intention and Awareness to identify your growth and learning from the beginning of the course to the end.

3. Application: The Challenge

Math has something of a tough reputation. Some people think it's too hard, some think it's irrelevant, and others believe it is as it should be - just like when they were students.

A recent study supported by the Bill and Melinda Gates Foundation captured the perspectives of 1,507 adults, 805 parents, and 732 teachers nationwide on different aspects of math education. Read their report, "The Need to Make Math More Relevant and Engaging for K-12 Students."

Does math need a makeover? After reading the resource, please complete the following application.

In two paragraphs or more, describe your thoughts on the survey results: do you agree or disagree? Explain how you perceive the survey compared to your personal experiences in teaching math. Please submit your 2 or more paragraph response with your Module coursework. If you are submitting a link, please be sure it is set to "anyone with the link can view."

All coursework is to be completed in the Teaching Channel online environment.

4. Application: Misconceptions and Mindsets
Do any of these sound familiar?

- "I just don't have the brain for math."
- "I'm not smart enough to learn math."
- "Boys are much better at math than girls.
- "I can't get to the right answer in the way the teacher does it."
- "You need to have a good memory to do math."

These phrases are extremely common! Please watch the following videos to see what Stanford researcher Jo Boaler, along with her students, have to say about the above statements.

Next, read "The Myth of the 'Math Person," by Caitlin McDermott-Murphy, which discusses the core of "math anxiety."

Now, apply your learning by completing the following application:

Create a one page informational artifact for an audience of your choice: teachers, students, colleagues, or families. Your artifact should focus on either:

- The truth behind typical math misconceptions, or
- How a growth mindset can improve learning in math.

Your one page informational artifact (Word/Google Docs, Slides (3-5 slides), Padlet, etc.) should be visually appealing, and we encourage you to use any creative digital tools like Canva, Smore, or Genially. Include the following in your artifact:

- Related resources
- Practical and applicable information for your chosen audience (strategies, frameworks, etc.)
- Questions to support individual reflection

Please submit your informational artifact with your Module coursework. If sharing a link, be sure the share settings are set to, "anyone with the link can view."

Module 2

1. Tell us about yourself!
Provide a one sentence or longer explanation of your role in the field of education.

2. Application: Context and Relevance
"Why do we have to learn this?"

Students - and really, many of us - need to know the "why" for doing something, and learning math is no exception.

We need to help students develop skills and fluency, but in order for them to deeply understand math concepts, it's essential to put math into context. When we talk about context, we need to ensure we are being culturally responsive with the "context" we choose.

All coursework is to be completed in the Teaching Channel online environment.

To complete this application, please review the following resources focused on culturally responsive teaching and learning in math.

- "5 Tips for Culturally Responsive Teaching in the Math Classroom," by Elizabeth Canavan, Edutopia
- "3 Ways to Make Your Math Instruction More Equitable," by Nikki Herta
- "Culturally Responsive Teaching: Examples, Strategies, and Activities for Success," from Prodigy
- "Making Math Accessible for All Students," by Ashley Marlow and Katie Novak, Edutopia

...and additional resources to keep math relevant:

- "Why is Math Important? 9 Reasons Why Math Skills Improve Quality of Life," from Prodigy
- Read one of the following articles, based on the grade(s) you teach:
    - Elementary: "3 Ways to Integrate Student Experiences in Elementary Math," by Neven Holland
    - "4 Ways to Make Math Relevant," by Tyne Brack
    - High School: "5 Ways to Motivate Students to Learn Math Effectively," by Ranjani Iyer, Edutopia
    - High School: "How to Make Math Concepts Feel Relevant to Students," by Kristen Moore, Edutopia

Now, to complete this assignment, use our template to create a SMART Goal for increasing culturally mindful contexts and relevancy in your math instruction. You may use any of the ideas above to inspire you!

Submit your completed template with your Module submission. If you are sharing a link, be sure to set it to, "anyone with a link can view."

3. Application: Math Modeling

Mathematical Modeling is a great way to make learning in math accessible and relevant. In this application we will explore ways to infuse more modeling in math instruction.

To begin, please watch this video to learn more (or refresh your knowledge) about mathematical modeling.

Next, read the following resources about mathematical modeling:

- "Deep Dive: Mathematics for All – How Modeling Transforms Student Learning," by Tim Truitt
- "Using Mathematical Modeling to Get Real with Students," by Paige Tutt, Edutopia
- "Using Mathematical Modeling to Strengthen Decision-Making Skills," by Danielle Jones, Edutopia, shows yet another application for mathematical modeling: engaging students in critical thinking using Shark Tank-like scenarios!

Then, watch 2 or more of Ben Rimes' Video Story Problems.

And a Teaching Channel video on Modeling and Graphing Real-World Scenarios.

All coursework is to be completed in the Teaching Channel online environment.

We hope you've got some great ideas from the resources!

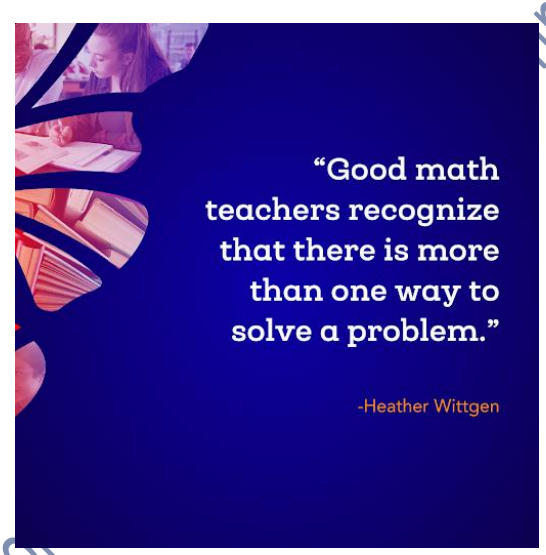
Now, apply your learning by increasing the relevancy of an existing activity or lesson. To do this, we ask that you include a new-to-you mathematical model (inspired by the resources above, or another idea of your own!) in the activity or lesson.

Aside from the new-to-you mathematical model, be sure to include the following:

- Objective
- Step by step procedure for the activity
- Why you selected the model you did
- Plan for implementation (when, how)

Submit your activity plan with your Module coursework. If sharing a link, be sure the share settings are set to, "anyone with the link can view."

4. Application: Strategies



Heather Wittgen's quote (above) is indicative of one (fantastic) way math has evolved: there are several ways to get to an answer. This idea is what makes math accessible.

As you have discovered, there's an abundance of resources available to make math meaningful. We'd like to offer some strategies to round out your toolbox. Please explore 5 or more strategies using the resources below, then complete the assignment that follows.

All coursework is to be completed in the Teaching Channel online environment.

3 Act Tasks	Math Manipulatives
3 Act Tasks can be adjusted for level of difficulty in three parts: • an engaging and perplexing Act 1 • an information and solution seeking Act 2 • solution discussion and revealing Act 3. The tasks allow students to ask mathematical questions, think critically, and develop estimation and number sense skills. Read more about the strategy in, "3 Act Tasks," from the San Francisco Unified School District. Check out the many tasks available for grades 6-12! Here's the elementary version from Graham Fletcher, and the K-2 version from Kendra Lomax!	Math manipulatives can increase understanding and make abstract concepts concrete! Watch this video to begin this exploration: Then read through the following resources: • "Math Manipulatives: How Can They Be Used to Enhance the Classroom Experience?" from Prodigy • "Why We Should Use Math Manipulatives to Teach Math," from ByJu's Future School Blog • "A Pandemic Practice to Keep in Science and Math Classes," by Megan Jacobs of Edutopia
Math Discussions	**General**

Explore the following resources about math discussions:
• "Maximizing Math Talk in the Classroom," by Dr. Christina Comptom
• "3 Strategies for Scaffolding Mathematical Discourse in Your Classroom," by Angie Hall and Marc Dembrowski, ASCD
• "5 Practices that Promote Math Discourse," by Gladis Kersaint
	These strategy collections offer interesting ways to make math relevant:
	• "Real World Strategies to Make Math Relevant," by Matthew Lynch of the Edvocate
	• "7 Real-World Math Strategies," by Emelina Minero, Edutopia
	• Design and Pitch Challenges in STEM- allows students to address a challenge and create a "pitch"to sell their design. Guidance videos are provided throughout!
	  ○ Middle School
	  ○ High School

Now, choose one new-to-you math strategy to implement in your classroom, or improve in your practice. For the strategy, summarize the following in a total of 2 paragraphs or more:

Explain your rationale for choosing the strategy, and why you selected it:

- If you choose to implement a new strategy, describe why you think it will improve learning in math.
- If you choose to improve on a strategy that's already been implemented, how did you know a change was needed? How do the improvements benefit learners?

Submit your 2 paragraphs or longer strategy response with your Module coursework. If sharing a link, be sure the share settings are set to, "anyone with the link can view."

All coursework is to be completed in the Teaching Channel online environment.

5. Investigation: Resource Review
To complete the Resource Review, identify two resources related to (but not directly from) the course content to enhance your professional practice, and deepen your understanding of the course content.

Resources may include blog posts, podcasts, websites, videos, documentaries, films, articles, books, or journals, published within the last five years. To find a resource, we suggest a web search (Google) using terms or ideas from the course you'd like to learn more about, or that relate to your specific professional learning needs.

Please provide the resource title, author, copyright or publishing date, and URL (if applicable). Then, in two paragraphs or more per resource, respond to one or more of the following:

- Share information about how the resource information could impact your professional practice
- Explain how each resource supports or challenges your professional assumptions
- Summarize any questions that remain, i.e.: gaps in information or contradictions

To meet "A" criteria as outlined in the course rubric, for each resource, include two or more different examples of how the resource supports or challenges assumptions, *and* explain two ways this resource will impact your professional practice.

Module 3

1. Tell us about yourself!
Provide a one sentence or longer explanation of your role in the field of education.

2. Application: Synthesis
Professional learning is essential for teachers to continue growing and improving their practice. Now, it's time to put your learning into action with a culminating project. This project is an opportunity for you to utilize the knowledge and skills you've acquired throughout the course to create something practical for your classroom or school. Teaching Channel wants you to culminate this course through an assignment that's relevant, applicable, and useful. Please select and complete one of the following options:

Option A: Plan an Initiative
Develop a plan to incorporate a paradigm shift, a specific educational model or a growth initiative into your classroom, on your team, or in your building. You may use Google Slides, Google Docs (for a narrative)—whatever works best for you. Please include each of the following in your 2 page or more plan:

1. Goals – what will the end results be?
2. Allies and Resources – who and what could help you reach your goals?
3. Communication – how will you engage with all stakeholders
4. Roadblocks and possible solutions
5. Timeline for implementation

Please submit your plan with your coursework submission.

All coursework is to be completed in the Teaching Channel online environment.

Examples:

- Detail implementation of authentic math program for your school
- Create a "relevant math" program for new teachers in your district
- Revamp your school's method of teaching math

Option B: Design a Presentation

Create a 30 min or more presentation for an audience of your choice, based on your learning in this course. Please include the following in your presentation:

1. One slide identifying your audience and how the presentation will benefit the group
2. Three or more concepts or ideas to be addressed in the presentation
3. Speaker notes embedded in the slides (or in a separate document)
4. One or more interactive activity (e.g. discussion prompt, jigsaw, gallery walk)
5. An explanation of next steps, such as additional trainings, resources, and/or collaborations

Please submit your presentation with your coursework submission.

Examples:

- Explain the rationale for implementing real-world tasks in math
- Rally your colleagues to get excited about a context-based math instruction

Option C: Develop a Unit of Study

This option presents you with the opportunity to significantly enhance an existing unit of study or create a brand new one, comprising 5 or more lessons. For this option:

1. Describe the student goals/objectives of the unit
2. Using our template, please include enough detail to ensure full understanding of the program or unit of study. Could a colleague teach this from your explanation, without preparation from you?
3. Embed links to lesson resources (e.g. websites, videos, readings) within the template
4. If you are revising an existing unit, please describe the areas you've enhanced or extended the original lesson(s)

Please submit your template with your coursework submission.

Examples:

- Incorporate new math strategies into an existing unit plan used with your students
- Design a unit with your students focused on contextual and relevant math tasks.
- Recommendations for improvement regarding an existing program in your school or district

All coursework is to be completed in the Teaching Channel online environment.

3. Reflection
In 2 or more double-spaced pages (12pt font), synthesize your learning by summarizing how your learning in this course has evolved your professional practice. To meet "A" criteria as outlined in the course rubric, your reflection should include:

- A comparison of your learning goals from your Statement of Intention and Awareness in Module 1 with your new learning, to assess how you've grown.
- One key takeaway from your learning.
- One future learning goal related to course content.
- Three or more detailed connections to specific course applications, information from readings, and other completed course activities.

And your choice of *one* of the following:

- Two or more specific ideas for changes to your professional practice with timelines for implementing changes.
- Two or more detailed action steps you'll take to positively influence others (students, parents, colleagues, administrators, community members, etc.), including implementation timelines.

All coursework is to be completed in the Teaching Channel online environment.