



## **Growth Mindset in Math**

**EDTU 9121**

**1 Semester Credits/Units**

Instructor – Julie Sweetman

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### **Course Syllabus**

#### **Course Overview:**

Help students unleash their potential to learn math through innovative teaching built around mathematical mindsets. Discover how visualizing, playing, and investigating pave the way for open student thinking, for powerful brain connections, for engagement, and for deep understanding of math concepts. Explore methods for creating an environment that values mistakes. Become familiar with the impact that positive messages have on students. Learn new strategies to increase student achievement.

*A Google email account and use of Drive is recommended for this course.* Required Text: [Mathematical Mindsets](#), Jo Boaler.

**Course Learning Objectives:** This course will give student opportunity to:

- Describe what happens to the brain when learning takes place and the impact this has for students when learning math.
- Explore and use strategies that you could use when teaching math that would help students develop a growth mindset.
- Develop lesson plans that will encourage students to be curious and motivated thinkers and learners for math as well as other core subjects.

#### **Course Relation to CCS or other Professional Standards**

**Quality Professional Learning Standards:** Element B: Pedagogy Quality professional learning expands educators' instructional and assessment skills, practices, and behaviors so that all students meet content and performance expectations and are ready for college and careers. INDICATORS Quality professional learning:  
1. Builds educators' repertoires of evidence-based instructional approaches for various content areas and diverse student learning needs.

**ISTE Standards: Learner:** Educators continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning. 1c: Educators stay current with research that supports improved student learning outcomes, including findings from the learning sciences.

## How to Submit Coursework

Each completed assignment in this course is submitted to the instructor for review using the course Assignment tabs or through Google Drive Sharing. Follow directions at the end of each assignment on how to prepare your assignments. Name each file submitted with your last name and assignment number (i.e. BrownAssignment3. Make sure you place your full name, course number and assignment number at the top of each document page. You will receive feedback from your instructor within 5 days indicating successful completion of the assignment or the need for revision. Assignment grades will be averaged for the final course grade.

### Google Drive Sharing:

- Email address to use for sharing: [jsweetman@edsonline.com](mailto:jsweetman@edsonline.com) - Create a Google Drive folder. Name it with your last name and course number.
- Add each assignment to the folder. Upon completion of all the assignments, share the folder with the instructor's email. Either get a shareable link and send an email or be sure to select "notify people" so I know when you have submitted your assignments.
- Assignment names: include Your last name, course number and Assignment number.
- Include the course number in subject lines or message areas used.

## Course Assignments

### Assignment 1 – Growth Mindset

#### Objective(s):

- Understand what it means to have a growth mindset.
- Understand the power of mistakes.
- Determine methods through which you could develop a mathematical mindset in your students.

#### Activities:

1. Read Chapters 1-4 of *Mathematical Mindsets*.

2. Watch the following:

The TEDx Talk: “How you can be good at math, and other surprising facts about learning. Jo Boaler, TEDxStanford. <https://youtu.be/3icoSeGqQtY>

Watch the video: A school that keeps learning – Part 3: Growth Mindset

<https://youtu.be/DKM6QwQpe3g>

Watch the video: Teaching Growth Mindsets <https://youtu.be/OhLJPhxuvGM>

Explore the following supplemental resources:

<https://biglifejournal.com/blogs/blog/5-ways-kids-develop-growth-mindset-in-mathematics>

<https://www.mathcoachscorner.com/2016/07/math-yes-can-fostering-growth-mindset/>

<https://ww.growthmindsetmaths.com/>

<https://mrelementarymath.com/growth-mindset-math/>

<https://youtu.be/DKM6QwQpe3g>

3. Create a presentation that summarizes your learning that could be shared with your students. Create the presentation using Google Slides, Prezi or PowerPoint. Include the following from the reading along with your learning from videos and websites:

**Chapter 1:** Write an introductory paragraph that you could share with your students about what you learned in Chapter 1. Be sure to include information about what happens to the brain when learning occurs, the myth of the math person and what it means to have a growth mindset.

**Chapter 2:** List three things you could do in your classroom to show students the power of mistakes and struggle.

**Chapter 3:** Based on tables on of 28-29, talk about how you could adjust your practice to reflect the most valued skills from 1999, as well as the 4 C's of the 21<sup>st</sup> century skills: critical thinking, creativity, collaboration, and communication.

**Chapter 4:** Share ways that you will help your students develop a growth mindset, and why that is important for them

Add assignment 1 to your shared Google Drive folder. Share the assignment with [jsweetman@edsonline.com](mailto:jsweetman@edsonline.com)

## Assignment 2 - Lesson Plan

### Objective:

- Create a lesson plan that includes open ended tasks.

### Activities:

1. Read chapters 5-7 of *Mathematical Mindsets*.
2. Explore the tasks offered at <https://www.youcubed.org>
3. Refer to the resources on page 91 in *Mathematical Mindsets*.

Lesson Plan: Choose a lesson that you might teach in the traditional US manner (teach the method, students practice it) and rewrite the lesson in the 3rd way listed on page 66, where students are given applied problems to work on and then they were shown methods.

Also, keeping in mind the idea of growth mindset grouping, choose a task (or create your own) that students could complete in groups. Describe how this could help students develop a growth mindset.

Add assignment 2 to your shared Google Drive folder. Share the assignment with [jsweetman@edsonline.com](mailto:jsweetman@edsonline.com)

## Assignment 3 – Assessment

### Objective:

- Create an assessment.

### Activities:

1. Read chapter 8 of *Mathematical Mindsets*.
2. Watch the video: Redos, Retakes and Do overs, Part 1 <https://youtu.be/TM-3PFfIvI>
3. Choose 3 of the assessment methods from chapter 8 and create an assessment you could use with your students.
4. Create a plan for what students could do if they are unsuccessful with the assessment.

Add assignment 3 to your shared Google Drive folder. Share the assignment with [jsweetman@edsonline.com](mailto:jsweetman@edsonline.com)

## Assignment 4 – Norms

### Objective:

- Create a set of norms that you will use in your classroom.

### Activities:

1. Read chapter 9 of Mathematical Mindsets.
2. Review the norms shared in chapter 9. Write a letter to the parents of your students explaining how you will create a set of norms for your students that will encourage learning with a growth mindset. Explain the norms that you have chosen and the reasoning behind them.

Add assignment 4 to your shared Google Drive folder. Share the assignment with [jsweetman@edsonline.com](mailto:jsweetman@edsonline.com)

## Assignment 5 – Reflection

### Objective:

- Reflect on your experience with Mathematical Mindsets and other resources about growth mindset in math.

### Activity:

Reflect on your experience reading Mathematical Mindsets. How will this new learning impact your teaching?

Add assignment 5 to your shared Google Drive folder. Share the assignment with [jsweetman@edsonline.com](mailto:jsweetman@edsonline.com)

<b>EXCELLENT</b>	<b>ACCEPTABLE</b>	<b>NOT ACCEPTABLE</b>
Meets or Exceeds Course Objectives: <b>A to A-</b>	Majority of Work Meets Course Objectives; <b>B+ to B-</b>	Needs Considerable Improvement: Resubmit Work Suggested: <b>C or below</b>
All work submitted reflects in-depth understanding of course objectives.	Most work submitted reflects in-depth understanding of course objectives.	Work shows little or no in-depth understanding of course objectives.
Assignment responses shows evidence of new knowledge evidenced by completion of presentation, lesson plans and written reports.	Most responses show evidence of new knowledge evidenced by completion of presentation, lesson plans and written reports.	Responses show little to no evidence of new knowledge evidenced by completion of presentation, lesson plans and written reports.
Work submitted was organized and clearly articulated.	Most work submitted was organized and clearly articulated.	Work submitted was not organized or not clearly articulated.
Assignment content and required projects were original.	Assignment content and required projects were original.	Evidence that not all assignment content and required projects were original.
Work is free of spelling and/or grammatical errors.	Work has few spelling and/or grammatical errors.	Work has numerous spelling and/or grammatical errors.

## Resources:

**Required Text:** *Mathematical Mindsets*, Jo Boaler

### Videos and websites:

<https://www.youcubed.org>

<https://youtu.be/3icoSeGqQtY>

<https://youtu.be/DKM6QwQpe3g>

<https://youtu.be/OhLJPhxuvGM>

<https://youtu.be/TM-3PFfIfvI>

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