

Using Tactile Activities in STEM Teaching

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Who we are...

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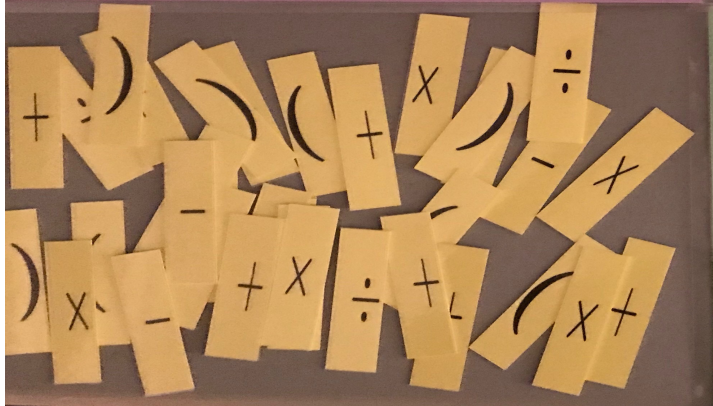
Impetus for this presentation

- TACTivities
 - Tactile learning activities
- Methods used to engage students actively in mathematics
 - Both in-person/f2f and remotely/virtually (online)
- Our research team is looking at the use of TACTivities in Mathematics education

What is a TACTivity?

- A tactile activity that encourages collaboration and engagement.
- Tactile (movable pieces)
- No moves are permanent
- Actively engages students
- Can be used to help teach or to review a concept
- Most are designed for groups of 2-4 students
- Often self-checking
- Very few (if any) directions needed

Example TACTivity

$4 \quad 4 \quad 4 \quad 4 = 1$	$4 \quad 4 \quad 4 \quad 4 = 3$
$4 \quad 4 \quad 4 \quad 4 = 9$	$4 \quad 4 \quad 4 \quad 4 = 8$
$4 \quad 4 \quad 4 \quad 4 = 4$	$4 \quad 4 \quad 4 \quad 4 = 5$
	$4 \quad 4 \quad 4 \quad 4 = 2$
	$4 \quad 4 \quad 4 \quad 4 = 7$
	$4 \quad 4 \quad 4 \quad 4 = 6$

Four fours

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4	4	4	4	=8) +) + ×
4	4	4	4	=5	- - ÷ × ×
4	4	4	4		(- + ()

Examining TACTivities - Research

- Engagement
- Collaboration
- Mathematics Efficacy
- Student Outcomes
- Instructor Perceptions

Research Questions

1. What are teacher attitudes toward the use of TACTivities?
2. What are student attitudes toward the use of TACTivities?
3. How do TACTivities affect student performance?

How you can use a TACTivity

- To introduce a new concept
- To teach a new concept
- To explore a concept further after a lesson
- To review a previous concept
- To provide another way to look at a concept
- To motivate students about a concept



If you want to participate...

- We will help instructors determine what TACTivity would best suit their students and the content area they are learning.
 - We will provide instructors with a short lesson plan and other guidance to implement the TACTivity in their classroom.
 - If warranted, we can help instructors create a pre/post-test for their students on the content.
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- The instructor will implement the pre-test if applicable.
 - The instructor will implement the TACTivity.
 - The instructor will implement the post-test if applicable.
 - The instructor will provide students with the follow-up survey. This can be in electronic format via the web or printed on paper if easier to administer.
 - The instructor will complete the instructor survey.

Open Educational Resources

- Calculus TACTivities
<https://math.colorado.edu/activecalc>
- Create and Share TACTivities
 1. Canvas Commons
 2. OER Commons

To provide us feedback:

TACTivity feedback – Want to be part of the study? Want to use TACTivities in your classroom?

What OER website would you use for TACTivities?

- [OER Commons.org](https://oercommons.org)
- [Canvas Commons](https://canvascommons.org)
- Other??

padlet.com/cindyork/sj9af47fra5khk5q

