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You CAN Build a Thinking Classroom

Middle Grades (6-8)
NCTM, October 2023

Hello! I'm...

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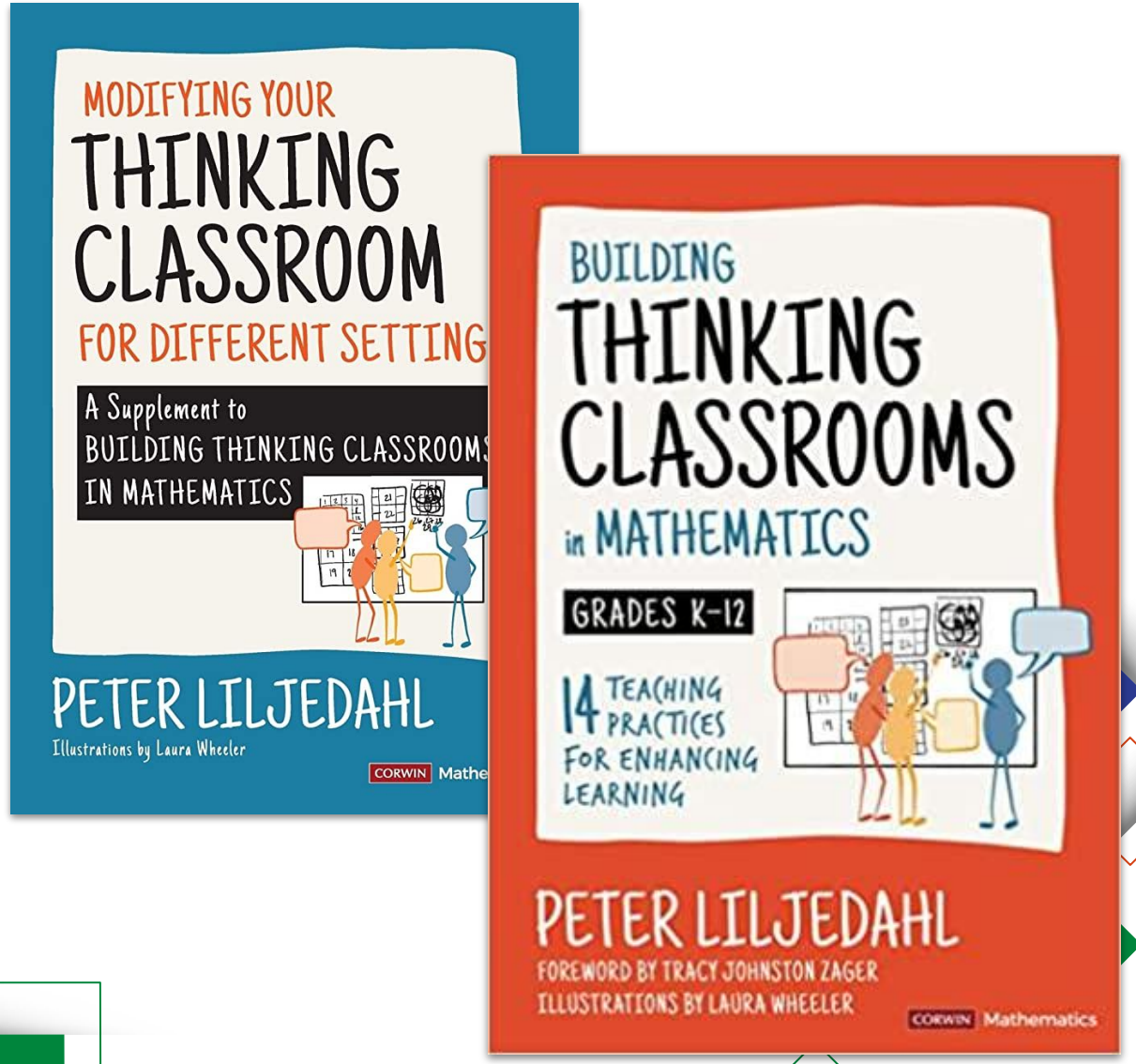
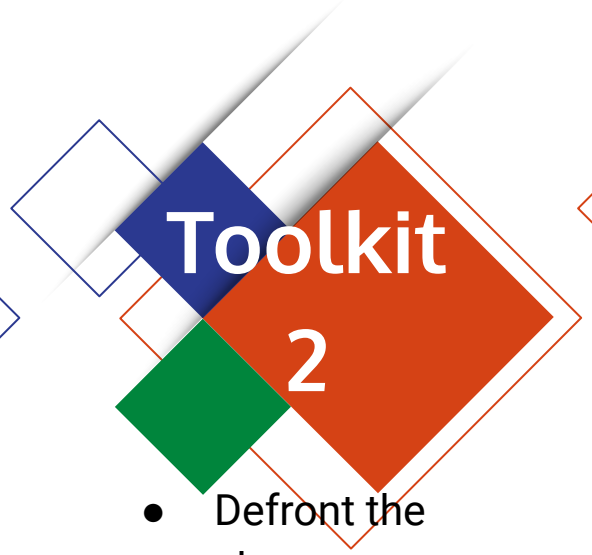


https://www.peterliljedahl.com/
https://buildingthinkingclassrooms.com/

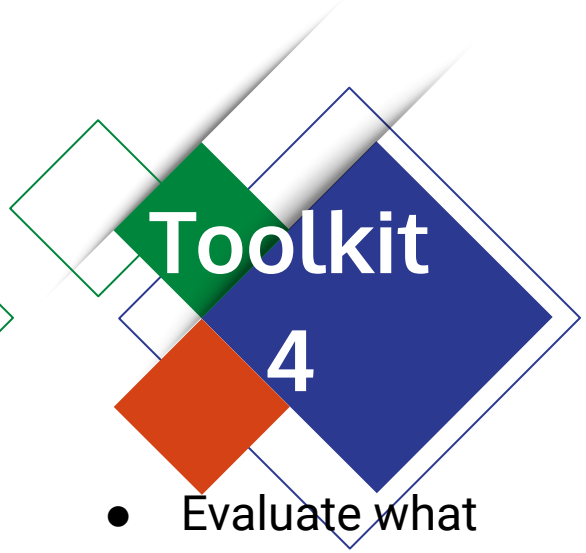
The Building Thinking Classrooms Framework

- Give thinking tasks
- Frequently form visibly random groups
- Use vertical non-permanent surfaces



- Defront the classroom
- Answer only keep thinking questions
- Give thinking task early, standing, and verbally
- Give check-your-understanding questions
- Mobilize knowledge

- Asynchronously use hints and extensions to maintain flow
- Consolidate from the bottom
- Have students write meaningful notes



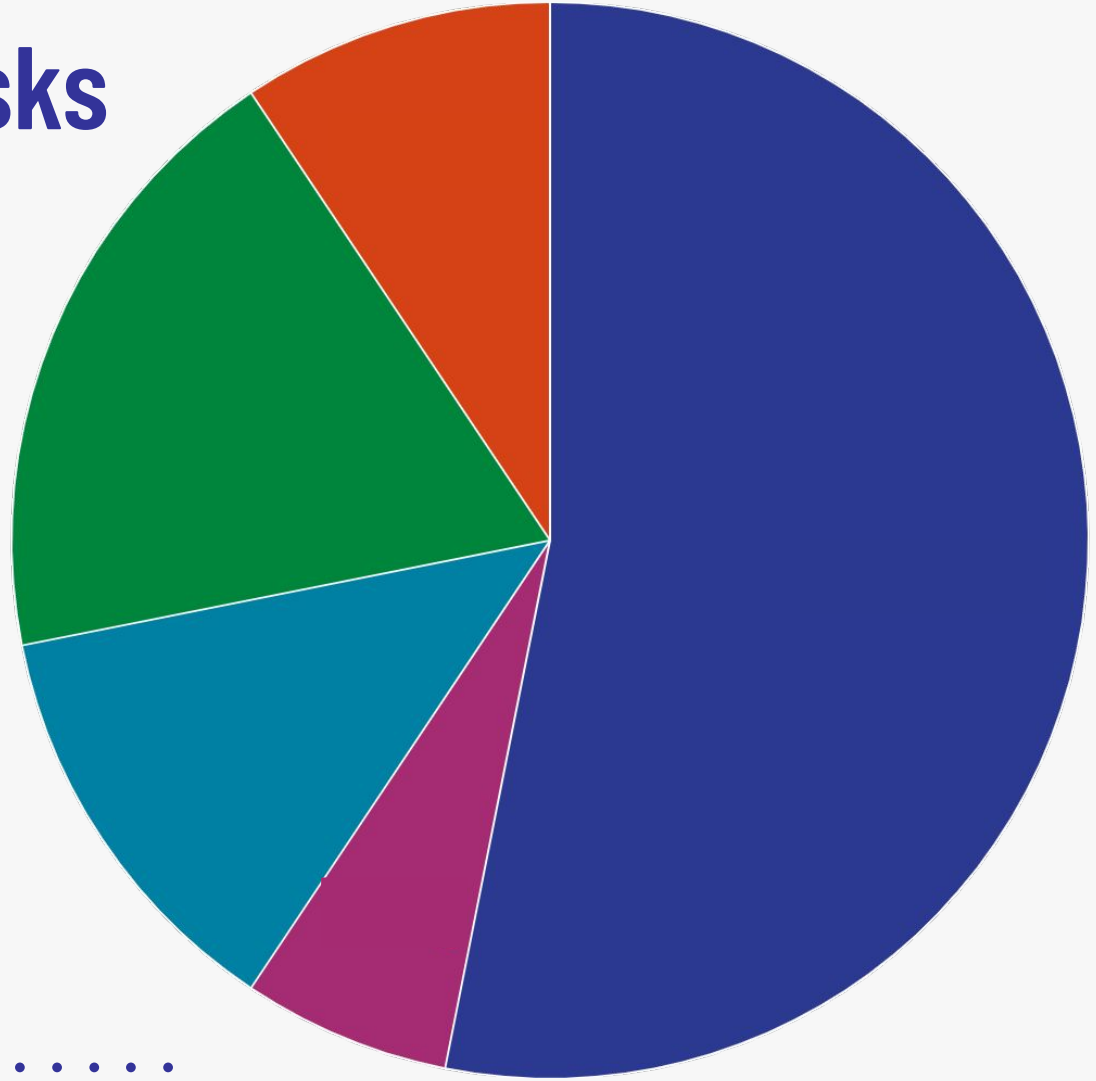
- Evaluate what you value
- Help students see where they are and where they are going
- Grade based on data (not points)

Make a 5-digit number divisible by 3 & 4 using the digits 3, 8, 5, 0, 4, 2 once.

Verma Reema - Verma Reema shared a post. (2021, November 10). Retrieved from Facebook.com website: https://www.facebook.com/groups/147158235484661/permalink/1895577960642671

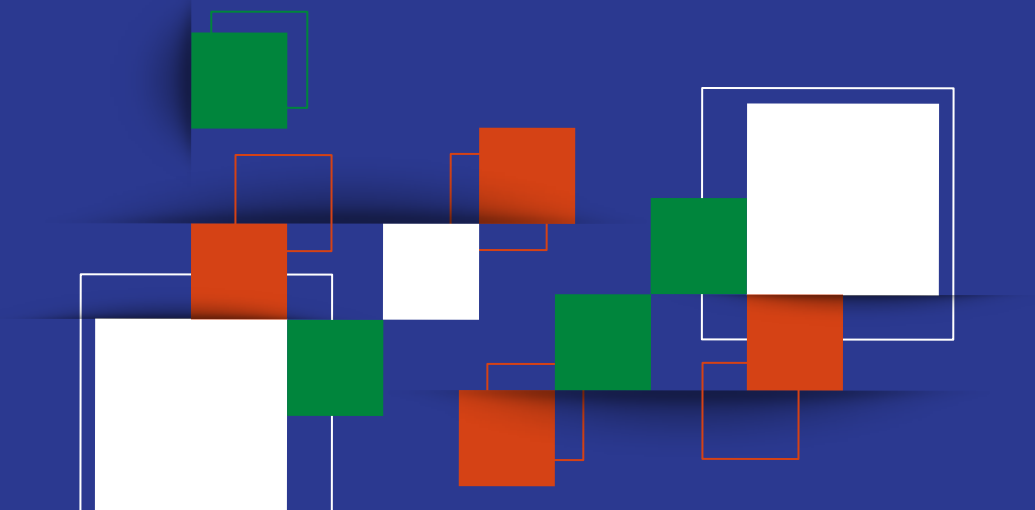
Now-You-Try-One Tasks

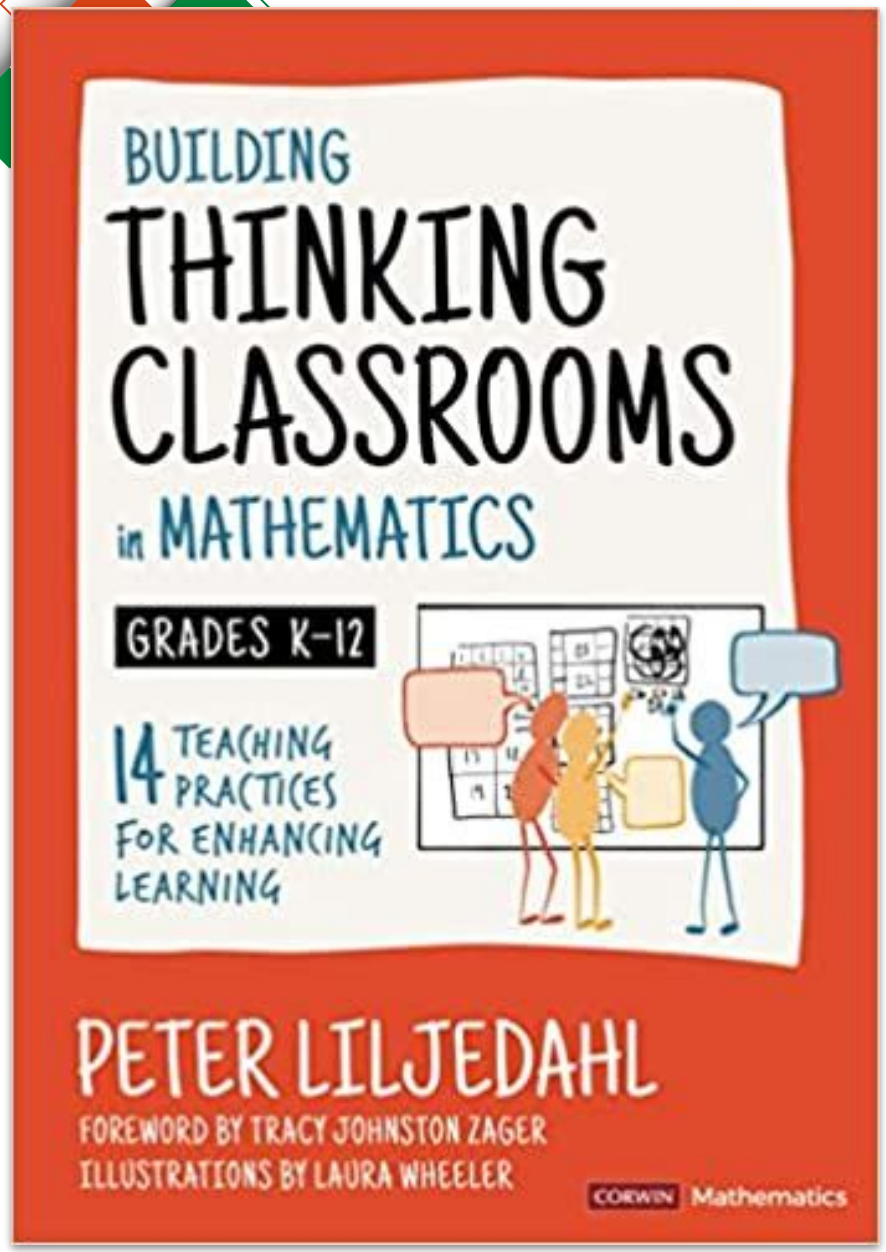
- Slacking: 9%
- Stalling: 13%
- Faking: 6%
- Mimicking: 53%
- Trying it on their own: 19%



Thinking is a necessary precursor to learning, and if students are not thinking, they are not learning.

~ Peter Liljedahl





Toolkit 1

- Give thinking tasks
- Frequently form visibly random groups
- Use vertical non-permanent surfaces (VNPSs)

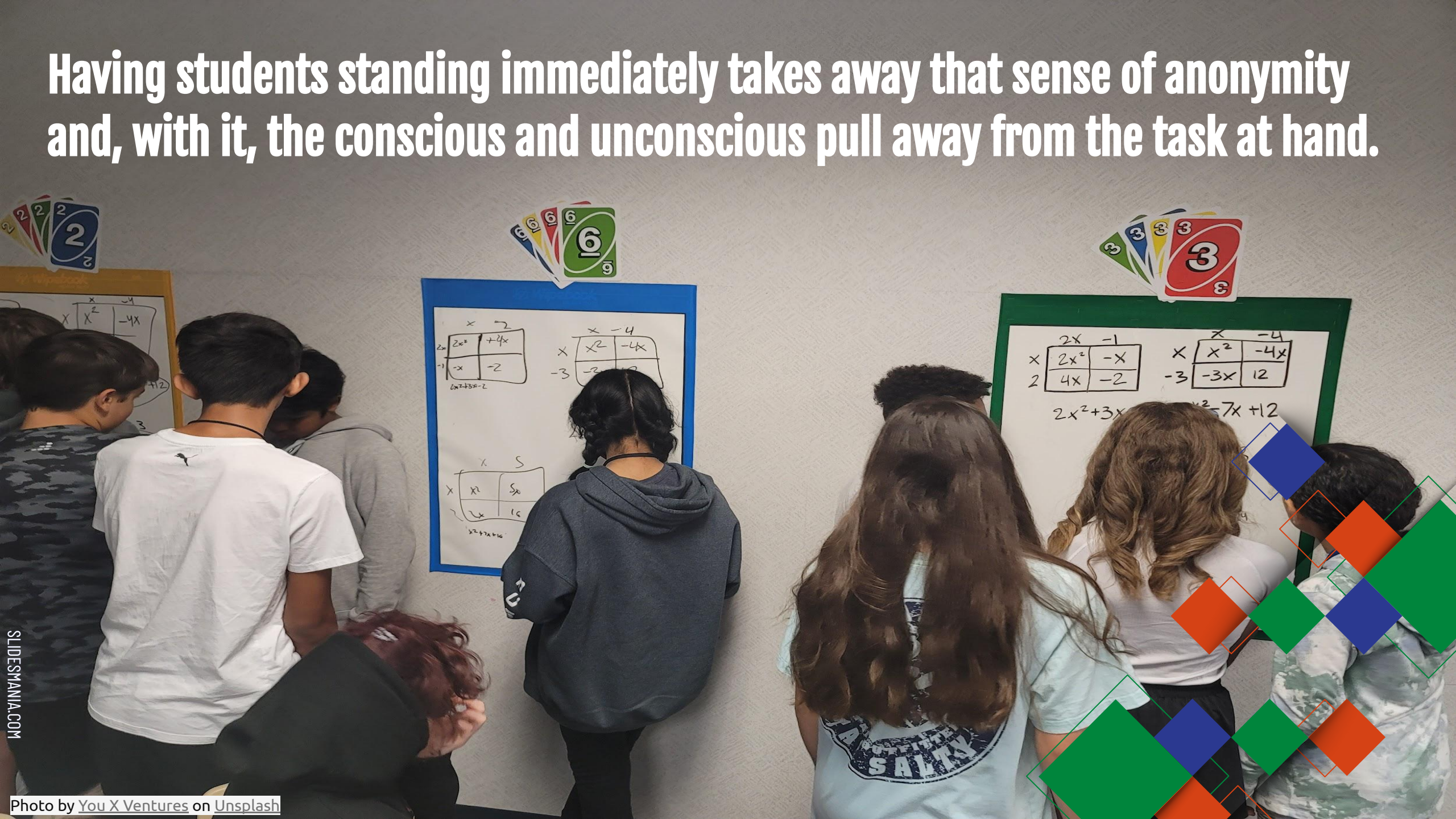
Chapter 3:
Where students work in a thinking classroom

Work Surface	Vertical Whiteboard	Horizontal Whiteboard	Vertical Paper	Horizontal Paper	Notebook
Nu					8
1. time to					13.0
2. time to					18.2
3. time on					3.4
4. eagern					0.9
5. amount					0.6
6. amount					0.9
7. amount					1.9
8. amount of					1.2
9. non-linearity of work	2.7	2.9	1.0	1.1	0.8

In short, groups that worked on vertical whiteboards demonstrated more thinking classroom behaviour—persistence, discussion, participation and knowledge mobility—than any of the other types of work surfaces. The next most conducive was a horizontal whiteboard.

https://drive.google.com/file/d/10TWN0KDmzUd_zSaoxGSXTWt4P8R0QXT1/view?usp=sharing

Having students standing immediately takes away that sense of anonymity and, with it, the conscious and unconscious pull away from the task at hand.

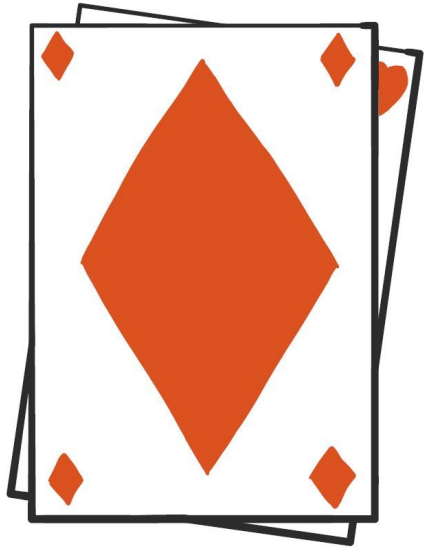


Use Vertical Non-Permanent Surfaces

- Have only one marker per group.
- Move the marker around within the group.
- Sometimes have the rule that the person writing cannot write any of their own ideas.
- Have groups in close (but not too close) proximity to each other.
- Talk to the students about valuing ideas & not erasing others' work.

Chapter 2:
How we form collaborative groups in a thinking classroom

Frequently Form Visibly Random Groups



- In K-2 form groups of two, in grades 3-12 form groups of three.
- Set up your method of randomization such that it tells students where to go.
- Find a way to randomize such that students know that you know what group they are in.

2023 Challenge

2023 Challenge

Use the digits in 2023 (2, 0, 2 and 3), exactly once time each, along with any mathematical symbol or operation of your choosing to create expressions equivalent to the numbers between 1 and 100.

https://mathequalslove.net/yearly-number-challenge/

Chapter 1:
What types of tasks we use in a thinking classroom

Three Kinds of Tasks

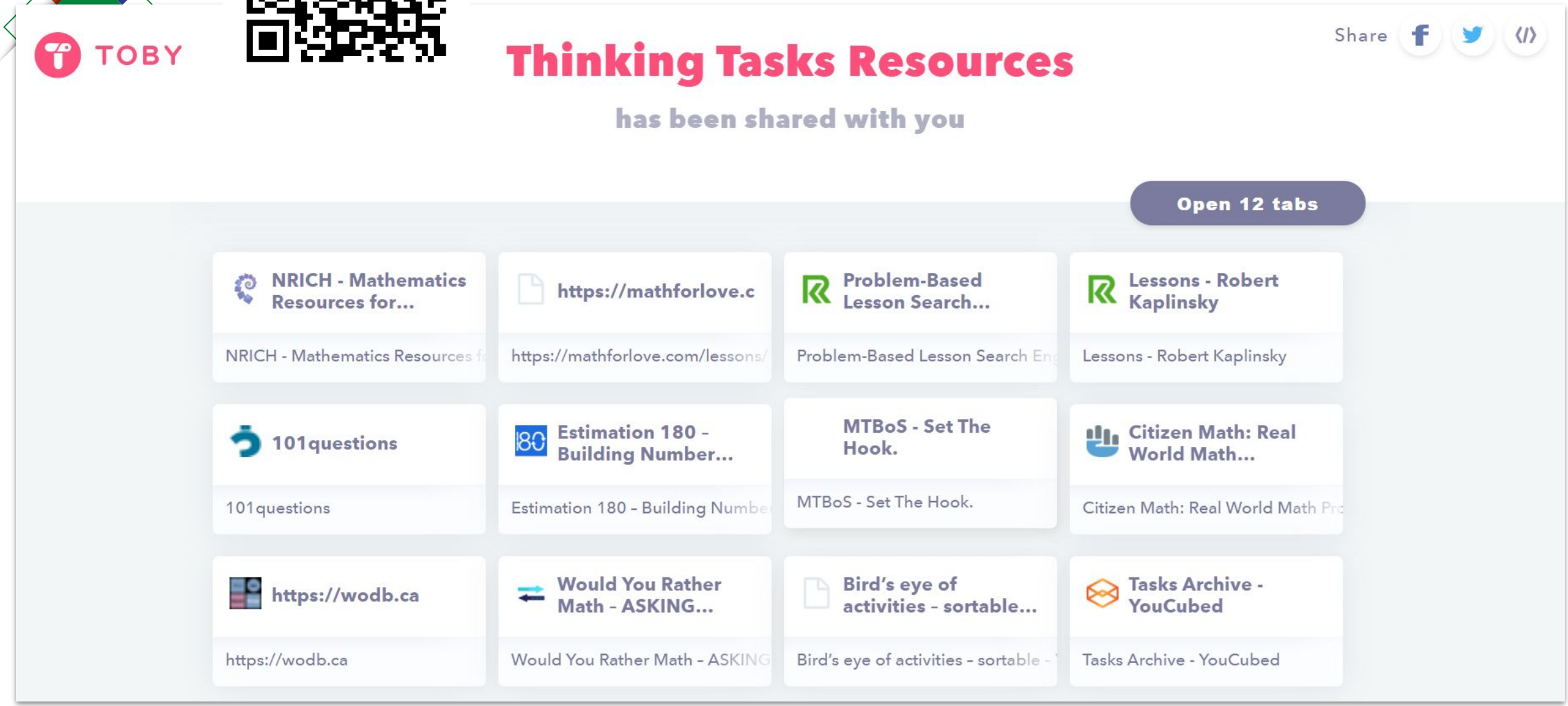
Highly Engaging Thinking Tasks are so engaging so interesting, that people cannot resist thinking. They have broad appeal and can be used across a wide range of grades.

Card Tricks are highly engaging situated tasks that draw students in and entice them to think. There are a lot of card tricks that are built on and can be explained by mathematics.

Numeracy Tasks are tasks that are based not only on reality, but on the reality that is relative to students' lives. From cell phones to entertainment to sports, these tasks require students to negotiate the ambiguity inherent in real-life experiences.

https://www.peterliljedahl.com/teachers/good-problem
https://www.peterliljedahl.com/teachers/card-tricks
https://www.peterliljedahl.com/teachers/numeracy-tasks

bit.ly/2TOFYy3



Social Media

#VNPS

#thinkingclassrooms
@pgliljedahl

Social Media

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Private · 39K members · Member since July 2021

AP Calculus and Building Thinking Classrooms
Private · 1.5K members · 2 posts a week
Join

Thinking Classroom for Algebra, Algebra 2 and Pre-cal
Public · 4.3K members · 3 unread posts · Member since October 2022
Visit

MS Math Teachers "Building a Thinking Classroom"
Private · 8.8K members · 4 unread posts · Member since July 2021
Visit

Building Thinking Classrooms + Carnegie Learning
Private · 242 members
Join

Building Thinking Classrooms, a Grade 3-5 Collaboration
Private · 7.6K members · 6 posts a week
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Building Thinking Classrooms: K-2
Private · 6.9K members · 2 posts a day
Join

Building Thinking Classrooms (for Science Classrooms)
Private · 1.3K members
Join

Building Thinking Classrooms: ELA Grades 3-5
Public · 770 members · 20 posts a year
Building Thinking Classrooms can happen in any subject area! Read the book, an
collaborate to bring the ideology into the ELA classroom! The student engageme

Building Thinking Classrooms
Private group · 6.5K members
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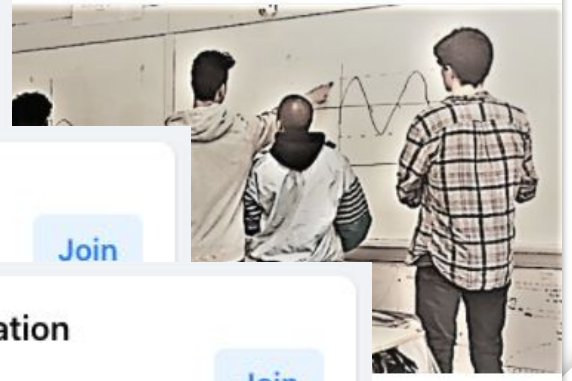


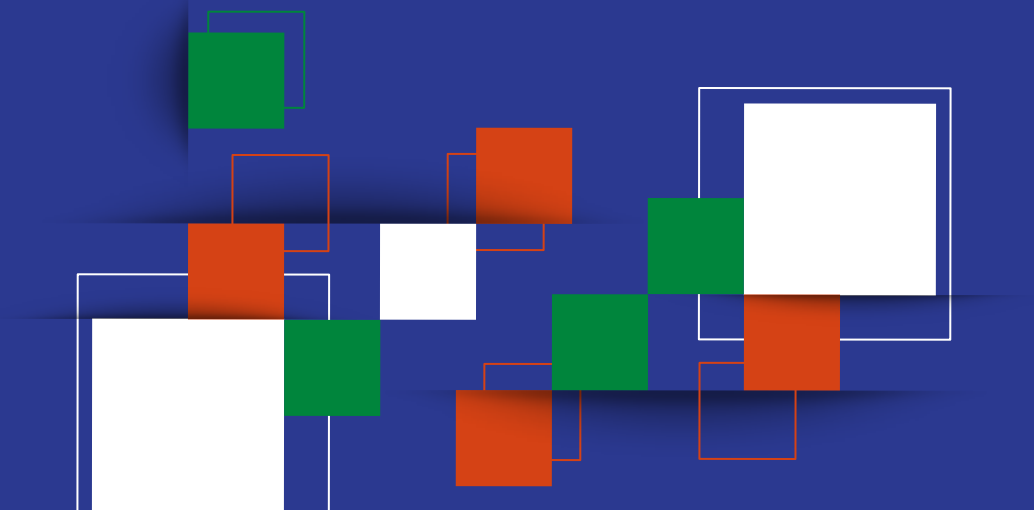
#VNPS

Give Thinking Tasks

- Begin the lesson (first 5 minutes) with a thinking task.
  - The first 3 to 5 thinking tasks you use should be non-curricular, highly engaging thinking tasks.
  - After that, shift to scripted curriculum thinking tasks:
    - begin by asking a question about prior knowledge,
    - then ask a question that is an extension of that prior knowledge, and
    - then ask students to do something without telling them how.

Once the thinking starts, it becomes an end unto itself, and students are not only more willing to think but they want to think.

~ Peter Liljedahl



THANK YOU!

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bit.ly/NCTM23YouCanBTC

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