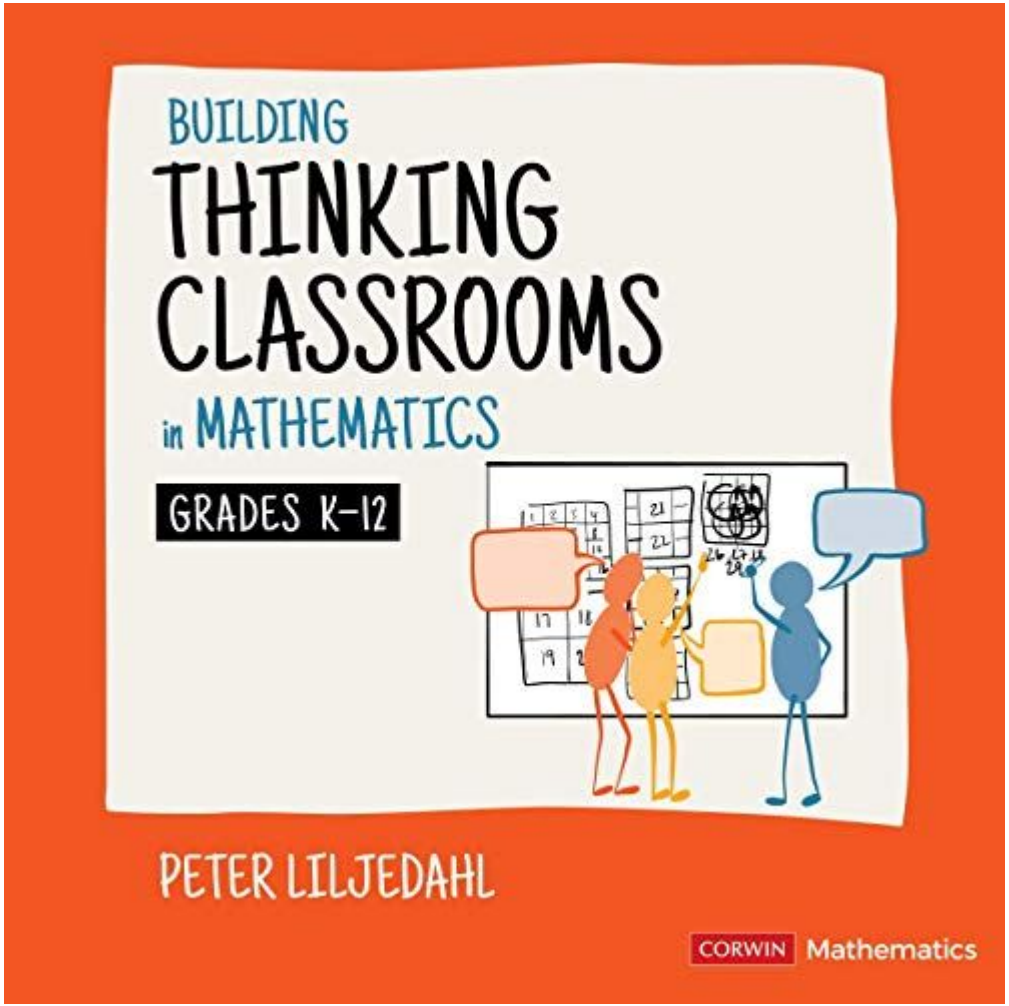
# Building Thinking Classrooms in Mathematics

By: Peter Liljedahl



# Members of the book club:

We invited Grade ⅘ teachers, administrators, and District Staff from around the Saanich School district to join us in learning more about Building Thinking Classrooms in mathematics.

We meet four times in April and May, 2022.

Our members included: Sherisse Norris (Lochside), Ashley Walker (Lochside), Nathan Hudon (Keating), Darcy McNee (North Saanich/District Staff), Breagh Mason (Keating), Heather Simpson (Cordova Bay), Heather Christie (Brentwood), Justine Shaw (Brentwood), Lisa Swan (Brentwood), Krista Hale (KELSET), Matt Lurie (KELSET), Matthew Makuch (Deep Cove), and Rebecca Mohrs (Deep Cove).

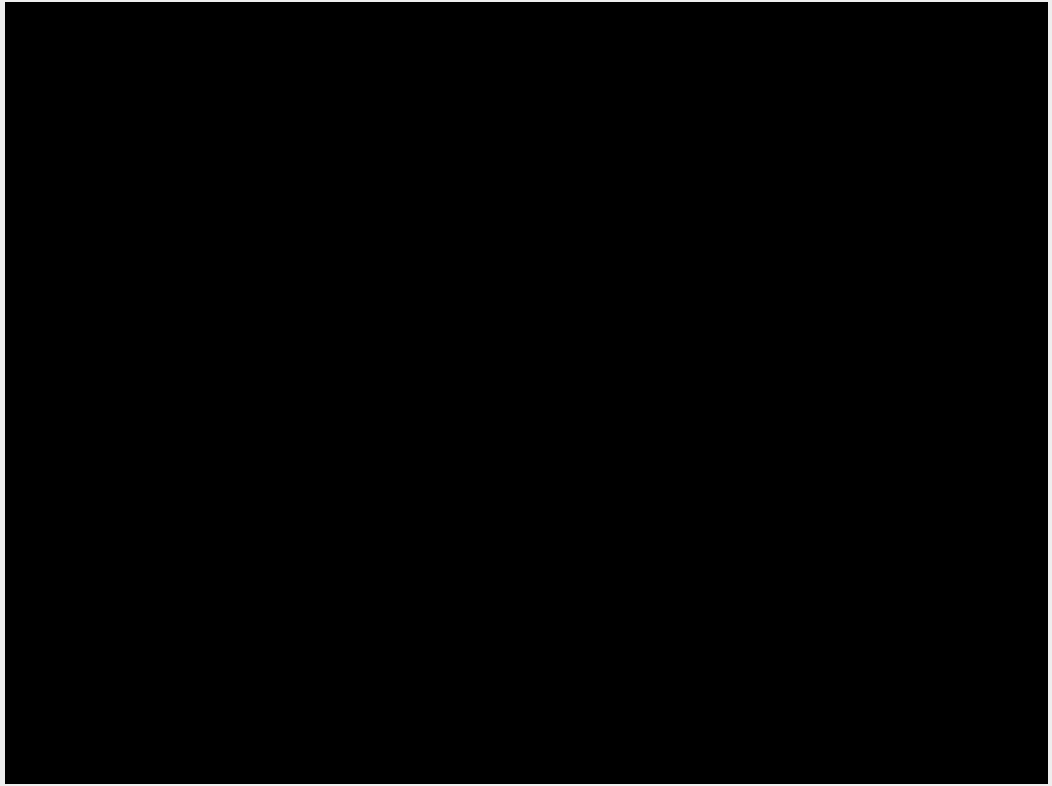
# Reasons we wanted to read this book and challenges we are facing in teaching Math:

- Struggling with teaching math, looking for a place to start
- looking to move away from ‘mimic’ teaching
- tired of TPT
- not feeling supported by the district
- coming from another district which uses Rethinking Math + Youcubed but being here, finding ways to support students when they are struggling
- teaching partners maybe not be supportive of doing something new or different
- students rely on tasks and mimicking, not thinking
- feeling inspired by Shelley Moore
- how to differentiate without exhausting ourselves
- refire own confidence in the classroom
- students not emotionally ready for math
- not having the supplies, books, resources available in the schools
- consolidation phase is challenging
- finding a balance between worksheets and other alternatives and heading towards Middle School

# What resonated with us most while reading Building Thinking Classrooms in Mathematics:

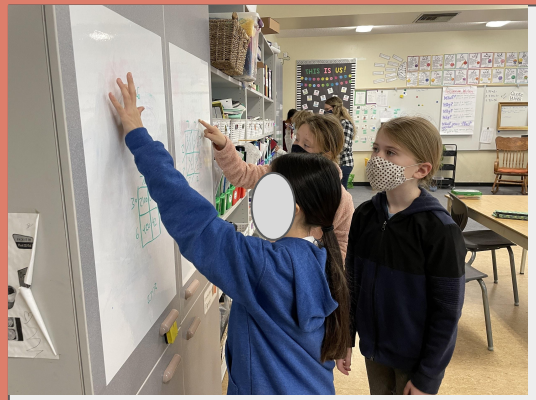
- The way that collaboration can be fostered so that students support each other.
- Impact of VNPS (vertical non-permanent surfaces) on student thinking and learning.
- How important it is to build engaging hands on lessons in your classroom where students aren't just mimicking what you are doing.
- All the ways that a traditional classroom isn't conducive to student thinking! From layout & design, to questions being asked, to random grouping, to standing up, so many ways to get kids' brains activated.
- Teach and mimic approach might not be the most successful.
- The overall idea of branching out and moving beyond just paper-to-pen tasks.
- The strategies used to get students thinking and how impactful it is to use Vertical Surfaces and have the students standing.
- The research behind the different grouping sizes and why certain numbers work better than others.

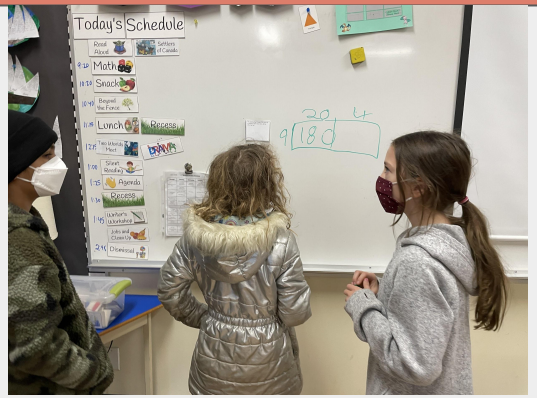
# Building Thinking Classrooms in Mathematics in Practice:



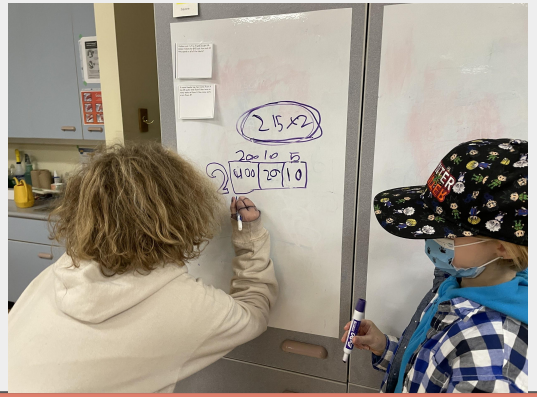
# Strategies used in the class after reading the book:

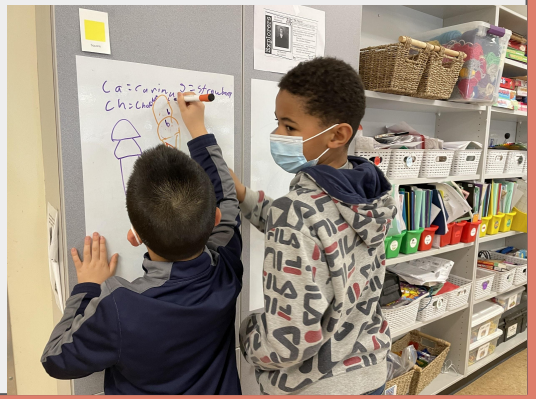
- Collaborative Groups
- De-fronting the Classroom
- Vertical Surface Non-Permanent Challenges
- Using Random Groupings of 3
- Stop- vs Keep-thinking questions
- Oral explanations with key facts on the board (opposed to giving out questions).
- Standing during group work
- Thin slicing some problems from a textbook to scaffold the students thinking.
- Answering less questions and using the "smile and nod strategy".
- Giving appropriate hints so that learning continues.






# Using Vertical Non-Permanent Surfaces for Math



# What was the most valuable part of being a part of this book club:

- Sharing and feeling that other teachers are also trying new approaches to building thinking math students.
- Connecting with other educators struggling and inspired to do something different in math class.
- The discussions and ideas that everyone shared, that I could take back and implement in my own classroom.
- The ability to converse and collaborate with district colleagues. I've felt very insular the past couple of years, so even just getting to explore and talk about different classrooms and schools was amazing.
- Unfortunately I was not able to make it to meetings, but I enjoyed reading the emails, seeing the resources shared, and generally getting some new ideas to try out.
- Talking through some of the strategies that different teachers have tried. Seeing whether they are having similar results using the same strategies. Knowing that I'm not alone in thinking that Math Teaching needs to change and that there are similar minded individuals in the District reading the same material and trying it in their classrooms.

# What questions do we still have?

- How to consolidate effectively, use practices effectively, and adapt for struggling students
- Engaging reluctant learners; what to do if a student is way above or way below others.
- Are we going to continue to explore the best practices for implementing engaging math lessons as a district?
- What does active assessment look like in other classrooms?
- Exactly how it looks over the entire year - how to cover all concepts and assess appropriately.
- How do I start this at the beginning of the year on a part time basis? How do I support my teaching partner in doing something similar.

# Moving forward, in what ways can we support each other?

- Continued regular meetings, share lessons, maybe we co-plan and all try a lesson...
- Time to put it altogether in a unit plan with all parts/suggestions from the book (questions, assessment, etc.)
- Sharing resources, continue to have book clubs and pro-d around these topics
- I wish once in a while, we had district grade-group collaboration sessions, or at least offered them as an option.
- Would love to share unit plans etc. (maps of covering the curriculum.
- I like the shared Google drive with ideas/resources/etc in it, and am excited to explore it further.
- Continue the conversations and perhaps meeting regularly to discuss what has worked...what we can try. Sharing resources and working together to tackle curriculum tasks that will promote thinking classrooms.