

Getting Started With Building Thinking Classrooms: Part 3

[Hand2Mind Webinar](#)

What is Building Thinking Classrooms?

- It is a reaction to an observed reality that many math students from around the world spend a considerable amount of time in math class not thinking. Thinking is a necessary precursor to learning. Students are not thinking, they're not learning. We've got to get them thinking.
- It's a set of practices that emerged from 15 years of research looking at what kinds of things we can do as teachers that has a significant impact on the amount and length that students are thinking.
- It's the things we have to do right so students will be able to think.

What is your advice for students who struggle to contribute and/or stay focused in their groups or for groups who split up the work instead of really collaborating?

- You can set a rule that you're not allowed to write any of your own ideas. This can be an effective strategy for someone who feels distant or hesitant from the work. "I know you have a ton of ideas, but you're only allowed to write the ideas of your group members." It's now safe for that student to be involved in the group. They can be a scribe and it's a safe entry spot.
- Disengagement is so visible. Students step away from the board. You can tell almost immediately in a thinking classroom.
- Just because you're at the whiteboard doesn't mean you know what's going on.

What is the ideal length of class time for a thinking classroom?

- It's whatever the school gives you.
- What's ideal depends on the grade.
- Peter would love 45 - 48 minutes for younger kids and more than 75 minutes for the oldest students.
- What's really important is that we need to dedicate a third to the closing. We give time to turn meaning making into meaning made.

How do you manage overwhelm when you monitor groups when they are working through a task. There is so much for a teacher to do. Is there a way to prioritize teacher responsibilities during this time?

- There are different things we monitor for.
 - Do they all understand?
 - Are they all participating?
 - Is everyone behaving?
 - Does anyone need extensions or hints?
- How do we prioritize? Are they all relevant at the same time?
 - During the first minutes, Peter notices that teachers monitor if students understand the task.
 - Next they monitor to see if they're participating.

- Then they monitor for the learning.
 - If there's time left over, they manage the behavior.
- BUT when you watch an effective teacher, they prioritize learning over misbehavior. Misbehavior is a vortex and we can get overly fixated on it. Focus on what's going to move the learning forward instead.
- Start with a really easy task. It's inclusive. Everyone has access to it. It builds confidence. When we are dealing with tasks that are easy, kids are moving through it quickly. As the lesson moves on and the tasks get harder, the groups move more slowly because the tasks take longer. In that moment, the teacher can gain back their time. It depends on the lesson and the age of the kids, but there's a point in the lesson when things slow down. You have more time on your hands and can more easily deal with misbehavior or do a formative or summative assessment.
- The task starts out frantic but it's relaxed by the end.

Students tend to want every board checked. How can that gradually end where only one to two groups are recognized to share their strategies and solutions?

- When sharing out boards, we only do that when the task is divergent. We look at different boards and honor the thinking that happened on those boards but students can feel like their thinking is being valued even though we're not looking at their board.
- Students do not get to present their own work during a gallery walk. "Can someone not in this group tell us what this group was thinking here?"
 - It turns a not listening activity into a thinking activity.
 - It creates a space where there's a lot of tentative language which invites more language and comments. "I think they were doing this..."
 - The group doesn't present so their work isn't being honored in the sense of we're lifting some group up. The boards are pretty much anonymous at that stage.
- If students are waiting for you to check their work, this is not going to work. You can't get around fast enough. The students are falling out of flow. That's assuming the work is correct. What if it's not correct? Then you have to engage with the problem, which takes even longer.
- The fact that a group comes up with an answer is not impressive. What should be impressive is that they know that it must be the answer. We need students to know it's the answer. They need confidence in their own work.
- What if a group does make a mistake and you don't catch it because you're not checking it? Mistakes don't live very long in a thinking classroom, but what if they don't catch it? If they're making a mistake on #2, they'll probably make it on #4. You'll catch it eventually.
- Students need to move on without us checking. They want us to check it because:
 - Students want to know that they're right. They want that affirmation. If you tell them they're right, they don't have to think so much.
 - They want to show you they're being good students. They're on task.
- We have to get past micromanaging this environment, making sure there are no errors. We'll catch them eventually.
- If you're really uptight about this, you can ask students to divide the board into four quadrants. They'll do the first question in the top left hand corner and the next one in the

top right hand corner. They work clockwise, and when they get back around to the first quadrant, they erase that problem. The work is living on the board for longer. Only do this if you really can't get past this.

- We want kids to keep looking - to seek that certainty for themselves. That's important.

Do you have suggestions for organizing assessment data gathered through observation during the task?

- When things start to slow down, it's a good time for data gathering.
- When you feel like your assessment practice no longer reflects your teaching practice, you want to start looking at chapter 13 and 14.
- Shift from point gathering to data gathering.
- Be a hunter, not a gatherer. If you think, "What learning is happening now?" you'll drown in data and there's no way you can capture it all. Go out in the classroom with a clipboard with three names. Look at the data you already have and who do you need more data on? Watch them and make notes about what you're seeing.

How do you work basic fact practice into the thinking classroom?

- Be careful with the word practice. Practice brings about the idea of automaticity or the muscle memory idea. We want more critical thinking when students are thinking about tasks. We want them thinking and not just reacting.
- If a student knows basic facts, life will be easier for them. However we have to ask ourselves what price we're willing to pay to get them to that point.
 - Math anxiety and self-efficacy: A very small number of adults have a positive relationship with math. When we dive into the stories of these adults, though they passed math, almost always it comes back to a moment in their education that involved the rapid recall of math facts coupled with public shaming. This starts the demise of how they feel about math. It's very difficult to reverse. They're fearful and anxious. That student isn't trying to learn math. They're trying to survive math. That's a steep price to pay for being overly zealous about math facts.
 - Flexibility: This is far more important to future learning. The ability to think about these fact questions in multiple ways is setting them up for future learning. All of this flexibility when learning these fact questions are jumping off points. That richness builds that allows students to move forward with math in different ways. When we focus on the fact rather than the flexibility the curse of knowledge kicks in. Once a student knows that 7×8 is 56, they're then not interested in knowing the six different ways that that is true. It's a steep price to pay. You may be getting them through the facts today, but the next year's teacher will struggle. We want them to remember them as a result of rich flexible experiences rather than to know it instead of.
- Give them the answer. When you ask them a fact question, give them the answer. "Show me three different ways why this is true." Repeated exposure through the same experiences and they will start to remember the facts.

- They're completely surrounded by this constantly if we pose the questions correctly, Keep focusing on flexibility. Keep our eye on flexibility and maintaining a positive emotional stance so students aren't becoming fearful because of our zealous attitudes towards facts.

Do you have strategies for working with neurotypical students who have difficulty organizing their thinking and are lost in the problem and need to hone their focus?

- Thinking classrooms offer a lot of strategies already built into it.
- The fact that they're in a group of three will strengthen their ability to articulate their thinking.
- The group helps organize the thinking. Closure helps as well.
- Still use teacherly craft to help intervene and support and scaffold, but the group structure will provide a lot of these things for the students.
- Can it be frustrating for these students? Yes, but it can be frustrating for students whether they are neurotypical or not. Some neurotypical students are prone to frustration concerning their own ability to articulate their thinking or at the inability of the group members to follow their thinking or the demand to articulate their thinking. "I know the answer is 7. I don't know how to explain how the answer is 7."
- One of the things that happens in a thinking classroom is that empathy is unlocked. As students work in groups, community is forming and they start to have patience for each other and find ways to help people be the best version of themselves that they can be.
- Create the structure of the random groups and use known strategies for accommodating or adapting to help these students be successful.

The navigation tool is a great way to show the subtopics and building blocks for the whole topic. How can we combine this overview with interleaving practice?

- The navigation tool is a precursor to the tracking instrument that we use to track data rather than points. How do we take what we're teaching and break it into outcomes, standards, goals, or subtopics? This grid will emerge that has all the subtopics and different levels of challenge that exist for each subtopic.
- Interleaving is when we focus on a topic for a while, we leave it for a while, and then come back. Some teachers might look at a topic three times a year. We used to call it spiraling. We'll revisit and keep topics alive throughout the year.
- To merge the navigation tool and interleaving:
 - The first column is the first pass through the curriculum. Do the basic version of everything the first time through. The next time we'll do the intermediate. The next time is the advanced.
 - It's not quite this simple, though. If you're working with a group that gets the basic the first time through, you'll need to advance them. You're going to extend them to more challenging questions. That's the baseline and then go up for them. Each time through, move the line in the sand that you want everyone to cross forward, although some groups might go further.
 - When we're interleaving, as we enter into a topic, we're looking for evidence of learning for that topic. Every time we go through that topic, we have more

opportunities to visit and gather more evidence of learning. At every stage, we're looking to see what students are demonstrating for us.

Would you recommend explicitly communicating the expectations for students when moving to a thinking classroom? What would you set out as the expectations?

- When a teacher has really good routines and norms in their classroom and then implement thinking classrooms, the students take to it really well.
- Do not delay implementing thinking classrooms until these routines are in place, because then we get caught in a slippery slope of prerequisite knowledge and prerequisite competencies and we're never going to start because we'll never get everyone ready to start.
- Teachers with really good routines have good routines in thinking classrooms and teachers who don't have good routines don't have good routines in thinking classrooms.
- Routines and norms are important, but when is it a good time to talk to kids about that? A bad time to talk to kids about that is at the beginning of a lesson. If they've never done thinking classrooms before and the very first time you say, "Today we're going to work at whiteboards and random groups and let me talk to you about how I want you to behave..." You're trying to tell them how to behave in a setting that they have yet to experience and this is the same as trying to give them vocabulary they've never seen before or explanations to things they've never played with.
- Day one, give them a task and say, "I expect you to behave your best," and off they go. When they're working, you go around and offer support and talk about the things that they liked or need to work on at the end of the lesson. Then remind them of those things at the beginning of the next session.
- Experience first. Norms second. It seems backwards to how we usually do things, but it actually works better. When we try to set norms and routines around behavior they haven't experienced, it's all abstraction. It needs to be rooted in concrete.
- Let them play. Micro-manage as you go.

What recommendations do you have for assessments in place of unit tests?

- Mild, medium, spicy is how we label the CYU questions at the end of the lesson.
 - Do your own.
 - Choose where you're going to start. Choose where you'll go next.
 - If you need help, get help from someone around you.
- Peter tried using mild, medium, and spicy with assessments, but the challenge was that mild, medium, and spicy is in relation with that day's lesson. What might be spicy today might not be what is spicy tomorrow. These terms should be used only with CYU for that day's lesson.
- The kids love having leveled questions, regardless of how we label them. They love knowing where they are and where they've going. They become so active in their own learning, because they understand the landscape and how to navigate it.
- Once we shift to standards based assessment, we can annotate it anyway we want with checks and labels. We can do so many different things when it comes to this.

- Students can make up their own tests where they'll get 100% or a quiz where they'll get 50%. This is a strong indicator to you of what they understand, where they are, and where they're going. They can only do that if they're active with the navigation tool. You're doing something right if students can do this.
- Have students tear apart a past test. Have kids tell you what's wrong with it.

As a preservice teacher preparing for my final placement, which of the strategies in Building Thinking Classrooms might be the easiest or most appropriate or feasible to try first?

- Chapter 15 shares where to start. Start with the first three practices.
 - Thinking tasks are relatively easy, because there are many resources out there.
 - Random groups are the easiest, cheapest, scariest, and most important practice to implement. That is where we start to build the community, and everything is predicated on that community.
 - Vertical whiteboards can be trickier, but get some Wipebooks. It's easy and low cost.
- We start there because that has the biggest impact on the students. It's a little outside our comfort zone, but it has a massive impact on students.
- After that, we bring in the practices one at a time.
- As a student teacher, you're kind of in this vulnerable space, because you are a guest in someone's classroom. You have to negotiate some opportunities for yourself.