00:19:42 Stephanie Wilson: Education Consultant and math coach
00:19:46 Margaret Dreier: K-8 Math and writing specialist
00:19:57 Margaret Dreier: Very small school☺
00:20:17 Tim McAndrew: Tim McAndrew, K-5 Math Coach near Boston, MA
00:20:37 John SanGiovanni: 5 b/c it's my bday
00:20:57 Betsy Todd: 6 for my birthday, but 3 is a magic number :)
00:21:00 Chonda Long: 11 - Kids jersey number
00:21:00 Danette Woods: 13, I really don't know why. It's always been lucky for me. Plus, I'm a sucker for prime numbers.
00:21:05 Karen Malhiot: 0- makes big numbers possible
00:21:06 Erin Minick: 10 soccer uniform number
00:21:07 Edmond Lau: 5 for me too. birthday
00:21:08 Tim McAndrew: 12 because it was often my jersey number when playing sports as a kid.
00:21:11 Margaret Dreier: 6. It’s a special number for my students because it's the favorite of our stuffed animal squad (has to do with the 6-letter name of the first one)
00:21:16 Stephanie Wilson: 7 because my BD is 3/3/73 Same forward and backward!
00:21:16 LaJuana Armstrong Jean: 22, It was my high school basketball number.
00:21:18 Juliet Shagoury: 42 because you can do so much with it
00:21:48 Crystal Pergram: 8. I kept changing my favorite as a kid. It always matched my age until I finally decided to stick with one
00:22:01 Teresa Barber: Teresa Washington State 20!
00:25:48 Danette Woods: Maybe 6 is how many days you are in to your new school year.
00:25:52 Stephanie Wilson: 2 kids
00:26:01 Teresa Barber: you enjoy life
00:26:08 Juliet Shagoury: siblings
00:26:08 Tim McAndrew: 2 kids, 6 nieces/nephews, weight 204?
00:26:19 Betsy Todd: People in your family, SAT math score, or temperature today…
00:31:07 Teresa Barber: Create a net for a cube. Get-to-know you project. We start Sept. 6th.
00:32:00 John SanGiovanni: excellent idea teresa! love it
00:32:15 John SanGiovanni: and then each face of the cube would have different numbers/images. right?
00:44:09 John SanGiovanni: https://docs.google.com/document/d/1FsSg1kckx1Xj1aL_duXP5enyBdzP-EhL5uodkYqphK8/edit
00:46:33 Crystal Pergram: frustration, time, growth
00:46:39 Erin Minick: challenge, persistence, frustration
00:46:39 Margaret Dreier: try hard worry
00:46:40 Betsy Todd: Anxiety, doubt, success
00:46:45 Edmond Lau: give up, IDK, too hard
00:46:45 Stephanie Wilson: hard, fear, try
00:46:48 Raenon Renfroe: challenge, growth, doubt
00:46:52 Terrie Willard: difficult, frustration, problem
00:46:53 Danette Woods: It's hard, I can't, I give up
00:46:53 Tim McAndrew: Piaget, perseverance, neurons
00:46:54 Chase Piper: growth, perseverance, anxiety

00:47:13 LaJuana Armstrong Jean: wait time, frustration, fear
00:47:18 Laura Morera: fear, anxiety, possible satinfaction
00:47:32 Lauren Mytinger: frustration
00:47:33 Teresa Barber: organizing ideas, reading comprehension, persevering.
00:49:49 Stephanie Wilson: 🤲 to all of that!
01:06:29 Tim McAndrew: John - a common response from teachers re: prod. struggle is the problems are too difficult for some kiddos, and they have a point - we don't want "unproductive struggle." What's your response to this?
01:17:05 Tim McAndrew: John - will this slide presentation be available after the workshop?
01:19:40 Margaret Dreier: What do you say to people who think talking about feelings in math class is soft or “woke”, and that math is about learning and facts and skills. Especially now many people feel entitled to make fun of such things and therefore ignore them.
01:21:56 Betsy Todd: Call them in and start a discussion. Math is about facts and skills, but much more as well- thinking things through, reasoning, predicting…
01:22:02 Margaret Dreier: Even if they think it's about problem solving, they don't think talking about feelings is part of the teacher's job in math class. And the people I encounter who think that way don't give opportunity to talk to them about it. But yes maybe that's a whole other conversation/webinar.
01:23:56 Margaret Dreier: And I'm talking about colleagues and administrators, not parents. But thanks for the responses (Betsy Todd andJohn); I agree with your points.
01:25:07 Tim McAndrew: this struck me the most in the vignette - the teacher engaged the class with each other - not just individually.
01:47:05 Tim McAndrew: I like #1 because they all have to do it.
01:47:07 Danette Woods: #1 - when I'm struggling, it's nice to know that there are people that "have my back" to give me help.
01:47:34 Margaret Dreier: 1 because they are all taking turns and may have different struggles, but others are ready to help if needed.
01:47:34 Betsy Todd: For me it’s 3, but I like 6, I wonder if students feel like 1?
01:47:34 Stephanie Wilson: #8 is a positive example because their ete is on the prize during the struggle
01:47:42 Juliet Shagoury: #1 the benefits of collaboration in PS
01:47:43 Stephanie Wilson: eye
01:47:43 Edmond Lau: I like #9 because young animals cannot avoid struggles.
01:48:21 Betsy Todd: 9 makes me feel sad.
01:48:58 LaJuana Armstrong Jean: 2, struggle always makes you feel a sense of accomplishment when you meet your goal.
01:50:32 Juliet Shagoury: The guy pushing the rock up hill feels hopeless...not productive.
01:51:21 Teresa Barber: 1 the struggle is real and solved by the team of students.
01:57:10 John SanGiovanni: https://toytheater.com/tangram/
02:08:02 Margaret Dreier: C = 1/16
02:08:04 Tim McAndrew: when I student taught about 500 years ago, I

actually came up with this activity, and the kids really enjoyed it. We kept exploring it.
02:08:04	Danette Woods:	I think F and G are each 1/4
02:08:10	Stephanie Wilson:	e 1/16
02:08:25	Tim McAndrew:	C is 1/16
02:08:29	Stephanie Wilson:	yes
02:08:32	Margaret Dreier:	The smallest triangles (C and E) can be used as the unit with which the other shapes can be built. It would take 16 of them to build the whole thing.
02:08:33	Raenon Renfroe:	yes
02:08:37	Edmond Lau:	B is 1/8
02:08:45	Stephanie Wilson:	yes
02:08:51	Tim McAndrew:	Yes to Margaret!
02:09:28	Margaret Dreier:	I actually started with F and G being 1/4 each. Then I went to the other smaller pieces.
02:09:29	Stephanie Wilson:	f,g 1/4 b,d,a, 1/8 c,e 1/16
02:09:30	Betsy Todd:	1/16 was the easy place to start for me too. Then, as I kept looking I noticed many different fractions and combinations of shapes.
02:10:23	Teresa Barber:	started with e.
02:10:50	Stephanie Wilson:	I couldn't have figured it out without overlapping them
02:11:04	Danette Woods:	1/4
02:12:29	Edmond Lau:	G is 2, if D is the whole.
02:13:24	Betsy Todd:	2D=G
02:15:07	Tim McAndrew:	John - my understanding from the research shows that "productive struggle" is much more effective than traditional "mimicry." Indeed, as Piaget says, how else could we learn ("disequilibrium"). Even though it's messy and takes longer, it's more "sticky" for the brain and long-term memory and understanding. Am I accurate here?
02:16:33	Tim McAndrew:	teachers often argue for "explicit instruction" - where would you argue that should exist in the math program, if it should?
02:16:42	Tim McAndrew:	sorry for all the questions!
02:18:59	Crystal Pergram:	Multiple entry points
02:19:00	Tim McAndrew:	"low floor, high ceiling" - easier said than done!
02:19:03	Danette Woods:	A good math task has the students doing the talking and doing, not the teacher.
02:19:09	Raenon Renfroe:	open ended, multiple entry points
02:19:10	Tim McAndrew:	Offer manipulatives.
02:19:13	Margaret Dreier:	Different ways in, open ended,
02:19:30	Lauren Mytinger:	Several Steps to Solve
02:19:33	Terrie Willard:	requires students to think and provides different ways to solve
02:19:37	Margaret Dreier:	something that doesn't look like the math students are used to
02:19:38	Lauren Mytinger:	Different strategies to solve
02:19:41	Juliet Shagoury:	engaging topic or context
02:19:56	Karen Malhiot:	allows student to show different ways of thinking
02:20:05	Edmond Lau:	simple question but with a variety of answers, or even a variety understanding of the question.
02:36:05	Tim McAndrew:	John you mentioned that some tasks promote

"destructive struggle" - can you say a little more about that at some point?
02:36:44 John SanGiovanni: https://docs.google.com/document/d/1FsSg1kckx1Xj1aL_duXP5enyBdzP-EhL5uodkYqphK8/edit
03:00:25 Tim McAndrew: That's a great task. I once did just 7 + 6 and gave the kids various tools they could use, and they came up with a bunch of different strategies - would this be considered a good task? The answer was not really important.
03:03:17 Betsy Todd: This week preparing for school to open next week, I had a teacher express how shocked the students were with the new curriculum last year- so many games! She went on, ‘we’re so used to doing pages of problems’.
03:03:18 Betsy Todd: Gosh.
03:07:22 Tim McAndrew: I like how you distinguish between learning and practice.
03:11:37 Tim McAndrew: Try: look at and sort tasks from our math program (Bridges)
03:11:42 Erin Minick: Something to try….getting to know your students (teachers) with a math biography
03:11:44 Teresa Barber: Thank you! This is so helpful in choosing quality tasks. This training is exactly the support I need to better support my students.
03:11:46 Karen Malhiot: I like how you modified the tasks
03:11:46 Margaret Dreier: Changing a dull/simplistic task into one that promotes productive struggle
03:11:50 Betsy Todd: Bridges! Great!
03:11:57 Danette Woods: I really resonated with your idea of doing "beginning of year - get to know you" tasks all throughout the year. Your ideas of the number quilt and the name tent with numbers were really great.
03:12:21 Crystal Pergram: Math identity is a strong influence in a students willingness to productively struggle
03:12:24 Edmond Lau: It is not about harder numbers, but greater thinking.
03:12:29 Terrie Willard: self-efficacy having the greatest impact on student achievement
03:12:31 Teresa Barber: IM?
03:12:35 Stephanie Wilson: Love everything! AHA - open up tasks to bring on the productive struggle, AHA - math identity is a gap as well
03:12:37 Betsy Todd: Have grade level teacher teams find a poor task and turn it into a super task. Also, the struggle pictures.
03:12:43 Tim McAndrew: Questions: curious to hear more about explicit instruction (which teachers use too often) and how to support students who are very "low" and may not be able to start the task.
03:13:08 Lauren Mytinger: Thank you! I would love to know how to help students stay with the task and not give up so easily! Students are often quick to say “I don't get it”.
03:13:52 Juliet Shagoury: Question: How to steer and capitalize on student conversation/ideas/questions to move everyone forward?
03:14:36 John SanGiovanni: 2:00 est
03:15:06 John SanGiovanni: we'll come back from lunch/brunch/snack at 2:00 EST
04:25:49 Betsy Todd: Would you also use this in the intervention room as well as the classroom?

04:31:23 Tim McAndrew: Thanks - to be clear I think teachers use explicit (I do, we do, you do) way too much.
04:32:48 Tim McAndrew: YES!
04:33:54 Karen Malhiot: do you have the research to show? I am fighting this battle daily
04:34:38 Tim McAndrew: Yes - and connect their strategies (even if not fully formed) to what you explicitly teach.
04:34:41 Karen Malhiot: Thanks
04:35:29 LaJuana Armstrong Jean: How can you front load that model?
04:47:02 Tim McAndrew: I think sharing context is an appropriate place for more explicit teaching.
04:50:55 Tim McAndrew: Or give the answer up front so it's not something they focus on. Then explore strategies/thinking.
04:54:41 Tim McAndrew: Getting "unstuck" is a life skill!
05:01:36 Danette Woods: G
05:01:44 Teresa Barber: j
05:01:45 Betsy Todd: Struggle with f, j
05:01:52 Teresa Barber: i
05:01:57 Betsy Todd: Maybe g
05:02:00 Teresa Barber: i
05:02:05 Margaret Dreier: l,f
05:02:06 Lauren Mytinger: Struggle with G!
05:02:08 Betsy Todd: It’s the figure ground illusion
05:02:15 Tim McAndrew: I agree w/ G
05:02:30 Karen Malhiot: j
05:13:55 Tim McAndrew: In other words, you are asking THEM to do the work.
05:28:55 Betsy Todd: Isn’t that a point where you might ask the student- tell me what you mean by the same
05:31:23 Margaret Dreier: These are the same size and shape (or maybe I would ask them what they mean by “even”)
05:32:26 Karen Malhiot: These shapes have the same area, even though they aren't triangles.
05:32:38 Betsy Todd: You’re saying these two parts are equal
05:33:35 Tim McAndrew: Another place where more explicit instruction is helpful - but they are already invested in the problem.
05:33:55 Tim McAndrew: Yes definitely!
05:36:24 Margaret Dreier: The white and blue parts don't look the same, because the blue are next to each other and the white aren’t
05:36:53 Edmond Lau: so, you mean they are equal if the white are together?
05:38:23 John SanGiovanni: 3:32 eastern
05:38:27 John SanGiovanni: 3:35 eastern
05:38:29 John SanGiovanni: for our return
06:05:33 Tim McAndrew: research shows that boys get more of this than girls (praising struggle, perseverance)
06:07:13 John SanGiovanni: https://docs.google.com/presentation/d/167rQnpg7oo_-784o6oxWzle9OK-_dGh28lGyFLwBbVk/edit#slide=id.p1
06:07:56 Tim McAndrew: John - last question. If a student in your class is significantly behind grade-level, what would be your go-to moves?

06:08:11 Tim McAndrew: deal
06:34:05 Terrie Willard: Value the struggle
06:34:17 Tim McAndrew: Kids' math identities are really important! How they see themselves greatly impacts their ability to learn.
06:34:22 Danette Woods: My big idea is the task selection. Being mindful of choosing the right task to make sure my students struggle appropriately and really learn from the experience.
06:34:26 LaJuana Armstrong Jean: Setting the stage with struggle norms...
06:34:30 Karen Malhiot: Taking the time for students to reflect on their struggle and the methods they used to overcome them is essential to productive struggle.
06:34:40 Teresa Barber: Thank you! Everything. Tasks, reflection, elevating the struggle.
06:35:03 Edmond Lau: reverse the do-do
06:35:07 Stephanie Wilson: while working with teachers I will stress creating a math identity
06:35:07 Margaret Dreier: Modeling struggle and helping stronger students value it as well as those with less confidence
06:35:15 Betsy Todd: Understanding myself as learner, why I get stuck and how to try to get unstuck. Circling back to this during reflection.
06:35:18 Stephanie Wilson: Like the reverse the do do! LOL
06:37:08 Betsy Todd: Thank you John, this time was valuable today.
06:37:23 Tim McAndrew: Thanks, John!
06:37:25 Lauren Mytinger: Thank you so much!
06:37:26 LaJuana Armstrong Jean: Can you give us your email one more time?
06:37:37 John SanGiovanni: john.sangiovanni5@gmail.com
06:37:39 Edmond Lau: Thank you
06:37:49 Margaret Dreier: Thank you for a thought-provoking workshop as we start a new school year. Good luck to all this year.
06:37:58 Juliet Shagoury: This was great. Thank YOU!
06:38:04 Stephanie Wilson: thank you!
06:38:36 LaJuana Armstrong Jean: Thank you. I really enjoyed the learning today.
06:39:44 Laura Morera: Thank you very much for the workshop! It has been very interesting! I’m from Spain, but I'll come to LA to the Annual meeting! See you there!