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[Aug 2, 9:30 AM] Guest1432: LOVE her work. Saw her at NCTM. WISH she visited the East Coast MORE!

[Aug 2, 9:31 AM] pearse_margie: So excited about learning more about numeracy!

[Aug 2, 9:33 AM] txgingerbread: This is Sue Simmons, I am on Pam's team. I'm representing her today since she is doing a live workshop in MI.

[Aug 2, 9:33 AM] mrbb321: Same here, @pearse_margie. I teach the upper grades where I feel the teaching of numeracy is very much misunderstood.

[Aug 2, 9:33 AM] pearse_margie: Hi Sue!

[Aug 2, 9:33 AM] txgingerbread: Guest 1432, where on the east coast do you want her to come?

[Aug 2, 9:34 AM] Guest6578: Excited to learn about teaching numeracy!

[Aug 2, 9:34 AM] Christina Tondevold: Welcome to Day 3 everyone!!

[Aug 2, 9:34 AM] pearse_margie: You are speaking my heart with Teaching Numeracy!

[Aug 2, 9:34 AM] Guest156: Thanks! I have loved this Summit!

[Aug 2, 9:35 AM] pearse_margie: Thanks Christina for providing all this math awesomeness! #VMS17

[Aug 2, 9:35 AM] Guest4063: Best virtual summit EVER!!

[Aug 2, 9:35 AM] Christina Tondevold: You bet, Margie!

[Aug 2, 9:35 AM] pwharris: Hi Everyone! Thanks for joining me in building powerful numeracy!

[Aug 2, 9:36 AM] Ken Sarber: When I clicked the link to the get handouts for this sessions, I was sent Angela Watson's handouts instead.

[Aug 2, 9:36 AM] Heather Kirk: That happened to me, too, Ken!

[Aug 2, 9:36 AM] Guest650: I requested the handouts for this session and I received the ones for Angela Watson's session.

[Aug 2, 9:36 AM] pearse_margie: 4% of the time!!!! Love this truth about how mathematicians think!!

[Aug 2, 9:36 AM] Guest4063: me too

[Aug 2, 9:36 AM] Christina Tondevold: Uh, oh....I'll get on that ASAP!

[Aug 2, 9:37 AM] Pam B: Very refreshing to be learning something new! As I special educator I often see my students struggling with the curriculum because it focuses so much on memorizing facts.

[Aug 2, 9:37 AM] Guest650: Thanks!

[Aug 2, 9:37 AM] CoachG4Wildcats: Excited to dive in! Currently working on my capstone for master's in K-6 math and am looking for great number sense strategies!

[Aug 2, 9:37 AM] pwharris: Thanks Guest1432! I'd love to come out east more often! Let's make it happen! #VMS17

[Aug 2, 9:37 AM] CoachG4Wildcats: I also got Angela Watson's handouts.

[Aug 2, 9:37 AM] pwharris: I agree Pam B! #VMS17

[Aug 2, 9:37 AM] Pam B: I love the idea of giving them opportunities to explore numbers and develop their number sense

[Aug 2, 9:37 AM] pwharris: Welcome CoachG4Wildcats! CoachG4Wildcats

[Aug 2, 9:38 AM] Guest4063: Come to King of Prussia!

[Aug 2, 9:39 AM] Susan Davis: Lower Dauphin School District in PA

[Aug 2, 9:39 AM] pwharris: Guest 4063, where is King of Prussia?

[Aug 2, 9:39 AM] Guest4063: Outside of Philly

[Aug 2, 9:39 AM] Christina Tondevold: Here is the link to Pam's handouts <https://s3-us-west-2.amazonaws.com/bmmcommunity/VMS17-downloads/Harris.pdf>

[Aug 2, 9:39 AM] pearse_margie: Sorry, just lost contact and then refreshed, so I will be way behind but loving the comments.

[Aug 2, 9:39 AM] Guest650: Thanks for the link!

[Aug 2, 9:40 AM] shawn: You can use the forward button to catch-up on your keyboard

[Aug 2, 9:40 AM] pearse_margie: Wait, who's from K of P? I'm from Delco

[Aug 2, 9:40 AM] Ken Sarber: Thanks. I have the handouts now.

[Aug 2, 9:40 AM] pwharris: Great Guest 4063 - I'll see what I can do!

[Aug 2, 9:40 AM] txgingerbread: Philadelphia sounds like a good idea Pam. We'll build some time into your schedule to drive out to Lititz and buy some Wilbur's chocolate.

[Aug 2, 9:40 AM] Guest4063: I'm from Chester County, but the hotels in KoP have fantastic meeting rooms for large groups!

[Aug 2, 9:41 AM] Myra Collins: I also got the handouts for Anna Watson. I did, however, print what was sent yesterday. Is that all I need?

[Aug 2, 9:41 AM] pwharris: Chocolate! Let's do it Sue!

[Aug 2, 9:41 AM] pwharris: KoP - got it. I'll look into it.

[Aug 2, 9:41 AM] Guest4063: Lancaster County would be good too. I know a bunch of Solanco District people were planning to sign up for the VMS

[Aug 2, 9:42 AM] pearse_margie: Yes, please come to Philly!!! I'm there too!

[Aug 2, 9:42 AM] Dan R: Hi Pam, Dan R here from MLC. Love your ability to demo live.

[Aug 2, 9:42 AM] Christina Tondevold: Myra, the handouts that were sent yesterday are for Tracy Zager's session later. Here's the link again for Pam's: <https://s3-us-west-2.amazonaws.com/bmmcommunity/VMS17-downloads/Harris.pdf>

[Aug 2, 9:42 AM] pwharris: Hi Dan! Thanks! Miss you guys!

[Aug 2, 9:42 AM] pwharris: Margie - that's good to know. Philly, here I come!

[Aug 2, 9:43 AM] pwharris: Lancaster County and Solanco District. Got it. :-)

[Aug 2, 9:44 AM] pearse_margie: I'll go to Lancaster as well. I love it there!

[Aug 2, 9:44 AM] Myra Collins: Thanks. I have the handouts now.

[Aug 2, 9:44 AM] Guest4063: Great shopping in Lancaster or KoP. I'm not a shopper, but it may be an added bonus for some attendees :)

[Aug 2, 9:44 AM] Guest4884: I also received the handouts for Angela Watson's session.

[Aug 2, 9:45 AM] Guest4063: https://s3-us-west-2.amazonaws.com/bmmcommunity/VMS17-downloads/Watson_VMS.pdf

[Aug 2, 9:47 AM] pwharris: I am inviting questions if you have them! What are you wondering about?

[Aug 2, 9:48 AM] Karen Schweitzer: Is there a way to fast forward? I got bumped back to the beginning when I clicked the handout button (didn't see the live link in the earlier and then later chat)?

[Aug 2, 9:48 AM] Susan Davis: It is very difficult for young learners to transition away from finger counting, which then tends to become a crutch. Suggestions?

[Aug 2, 9:49 AM] pwharris: Susan, that's a great question! I didn't have time to work on that here and it's not a short answer, but some things to think about are: using Number Racks (rekenreks) and problem strings are helpful.

[Aug 2, 9:51 AM] Christina Tondevold: Susan...you can check out my session here at the summit about the 3 reasons kids still count on their fingers. It was on Tuesday, if you go back to the main page (after Pam's session) :)

[Aug 2, 9:51 AM] txgingerbread: We play lots of "I have, you need..." to five and ten to get partner relationships owned.

[Aug 2, 9:51 AM] pwharris: Susan, we also want to help students work on the big additive strategies that I am talking about but using them with single digits. Like, adding to a friendly number in single digits could look like Making 10, $8 + 7 = 8 + 2 + 5$. I would prefer to model that with a Number Rack and then later on an open number line.

[Aug 2, 9:52 AM] pwharris: I agree with Christina - she is excellent at working to help students transition from counting to additive thinking!

[Aug 2, 9:52 AM] Christina Tondevold: Thanks, Pam!

[Aug 2, 9:52 AM] pwharris: Sue, say more about I have, You need - a really great routine!

[Aug 2, 9:52 AM] Guest8954: loving "friendly numbers"

[Aug 2, 9:53 AM] CoachG4Wildcats: What are some strategies for when students have a hard time counting by 10's when not starting at 0. For example, I teach 3rd grade and I've realized that some students have a hard time jumping by 10 from 36. We then have lots of backing up to do, but what do you suggest for when students enter 3rd grade not being comfortable doing that?

[Aug 2, 9:53 AM] pwharris: They are friendly and worth loving!

[Aug 2, 9:53 AM] mrbb321: I find it very difficult for learners to transition away from counting on their fingers...especially if they're in 6th or 7th grade and have spent years with that one strategy!

[Aug 2, 9:53 AM] txgingerbread: And come to Pam's workshop- Building Addition in Young Learners in Spring 2018. <http://www.mathisfigureoutable.com/building-powerful-addition-in-young-learners/>

[Aug 2, 9:53 AM] pwharris: Mrbb321, I completely agree. That's why I wrote, Building Powerful Numeracy for Middle and High

[Aug 2, 9:54 AM] pwharris: OOps - hit enter too soon. Mrbb321 That's why I wrote Building Powerful Numeracy for Middle and High School Students. I recognize how important it is for all students to move through this progression!

[Aug 2, 9:56 AM] mrbb321: Great to hear! This is definitely a year where I want to zero in on using my instruction as a progression of skills in solving problems rather than a race to be better at memorizing steps.

[Aug 2, 9:56 AM] txgingerbread: Let's play to 10. I say "I have 8," kids respond with "you need 2". It works with the relationship of anchor numbers. Lots of short sessions help kids build those partners and strategies to find the partners. We later bump up the rigor by playing to 100 and 1000.

[Aug 2, 9:56 AM] mrbb321: Thanks! Found it on Amazon! :D

[Aug 2, 9:56 AM] pwharris: Great question coach! We like to do Count Arounds where we start at a number like 33 and count around by 10. If students need to count initially, let them but fairly quickly let other students point out the patterns that are happening and pull out the place value. Then rinse and repeat with a different starting number.

[Aug 2, 9:57 AM] pwharris: Mrbb321, what a great goal! Keep me informed about how it's going!

[Aug 2, 9:58 AM] Jennifer Bearss: We use Eureka in all elementary schools in my district...I love it because we all teach multiple strategies now. I teach 1st grade and my kids this past year did not like the traditional algorithm at all, they all add a strategy they preferred better!

[Aug 2, 9:58 AM] pwharris: Mrbb321, love to get your questions too as the year goes along.

[Aug 2, 9:59 AM] CoachG4Wildcats: @txgingerbread - You could even play to all tens! I love it! That would help them with number line strategy! We used a lot of number lines last year!

[Aug 2, 9:59 AM] txgingerbread: Jennifer, kids love to think for themselves, until we train that out of them.

[Aug 2, 9:59 AM] Myra Collins: Additive thinking goes well with the patient work with ten frames and rekenreks. If they can visualize how the ten frame looks, they might easily determine how

to make a more friendly number for their work.

[Aug 2, 9:59 AM] CoachG4Wildcats: @pwharris - Thanks Pam! I like that - that would work in a small group!

[Aug 2, 9:59 AM] pwharris: Great Jennifer! A caution I would add is that you don't want to leave kid in any one strategy. The goal is to empower kids by helping them construct all of the main strategies and then they are empowered to choose. Given the numbers, they can choose the strategy that fits in that situation.

[Aug 2, 10:00 AM] txgingerbread: I use I Have, You Need to 90, 180, and 360 for geometry too.

[Aug 2, 10:00 AM] pwharris: Coach - YES! I have, you need is very helpful!

[Aug 2, 10:02 AM] pwharris: Myra - nice connection with 10 frames. I like 10 frames until students can count. As soon as they can solve problems counting, then I only use pre-filled ten frames, for things like quick images. Why? If I make kids fill in ten frames then they are forced to count by ones to fill them in. That's the time to move to a number rack and then an open number line. Make sense?

[Aug 2, 10:03 AM] sjsoltau: @pwharris - you mean you use 10 frames when they can count to 10?

[Aug 2, 10:05 AM] mrbb321: Of course! I will definitely have questions to send you. That's what's fun about being an educator! The quest for solutions is always active. :-)

[Aug 2, 10:05 AM] pwharris: Sjsoltau, sort of. I mean I love ten frames from the start of counting UNTIL students can solve simple addition problems by counting. When they can successfully use counting strategies, then it's time to move to Number Racks and then open Number lines. Ten frames are great to build relationships. They are not great as tools for computation.

[Aug 2, 10:06 AM] pwharris: Mrbb321 - love the "quest for solutions"! Describes my life!

[Aug 2, 10:07 AM] Tracy Roeser Casey: That makes sense to me about moving from 10 frames to number racks!

[Aug 2, 10:08 AM] sjsoltau: dumb question-- is a number rack like a rekenrek?

[Aug 2, 10:08 AM] Tracy Roeser Casey: Yes

[Aug 2, 10:09 AM] pwharris: Yes, number rack is the American way to say rekenrek. :-)

[Aug 2, 10:09 AM] txgingerbread: I love using ratio tables, for myself and with kids.

[Aug 2, 10:09 AM] sjsoltau: so can you make rekenreks with numbers larger than 10?

[Aug 2, 10:10 AM] Geneviève Décarie: I had to change computers and I cannot fast forward...

[Aug 2, 10:10 AM] pwharris: My favorite rekenrek is the two rows of 10 for a total of 20

[Aug 2, 10:10 AM] pwharris: Ratio tables are the best!

[Aug 2, 10:10 AM] Karen Schweitzer: I think that when we call the "give and take" "creating an equivalent equation" (and I do use that with my students which have ranged from 1-6 grade) aren't we using language that helps define the math that is going on?

[Aug 2, 10:11 AM] Guest9670: Bead ropes are awesome and go to 100!

[Aug 2, 10:12 AM] pearse_margie: We love this one too <http://www.hand2mind.com/item/100bead-rekenrek-demonstration-counting-frame/6336>

[Aug 2, 10:12 AM] txgingerbread: Math Learning Center offers a free Number Rack app that can be as big as 100. <https://www.mathlearningcenter.org/resources/apps>

[Aug 2, 10:12 AM] Tracy Roeser Casey: I love using that app!

[Aug 2, 10:12 AM] pwharris: Karen - I love "creating an equivalent equation" but I do that with a lot of strategies with more operations than just addition. So, I might say, "Creating an equivalent equation by giving and taking"

[Aug 2, 10:13 AM] txgingerbread: Pam, is this also called "compensation"?

[Aug 2, 10:13 AM] Guest9670: Many students struggle with addition/subtraction strategies because of their inability to structure numbers. Consider using 10- and 20-frames for structuring numbers rather than a counting tool.

[Aug 2, 10:13 AM] pwharris: If anyone is interested, I actually don't advocate for bigger number racks. I think that once we have really constructed the relationships to 20, then it's time for the open number line..... Thoughts?

[Aug 2, 10:14 AM] pwharris: Txgingerbread - yes, give and take can also be called compensation.

[Aug 2, 10:14 AM] Tracy Roeser Casey: Do you think open number lines are appropriate for kinders?

[Aug 2, 10:14 AM] Guest9670: I love using the open number line, but some students may need a concrete tool rather than the representation. No?

[Aug 2, 10:14 AM] pearse_margie: Like number tracks for K

[Aug 2, 10:15 AM] Christina Tondevold: Geneviève Décarie, try refreshing the page...I just added the controls

[Aug 2, 10:15 AM] Tracy Roeser Casey: Thanks!

[Aug 2, 10:15 AM] Tracy Roeser Casey: Would you use that to help with additive thinking?

[Aug 2, 10:15 AM] pwharris: Guest9670 - Yes, I agree that we want tools that help construct. I worry that frames force kids to count to fill them. Number racks (rekenreks) don't have that limitation. And they also allow students to move groups of beads at the same time!

[Aug 2, 10:16 AM] Christina Tondevold: Tracy, regular number lines aren't recommended until 2nd grade. I like using a Number Path for K & 1...at the end of 1 you can start doing number lines...but they are tough for young kiddos

[Aug 2, 10:16 AM] Tracy Roeser Casey: number tracks that is to help with additive thinking

[Aug 2, 10:16 AM] pwharris: Tracy - excellent question. Open number line is usually appropriate at the end of first grade or beginning of second. For kinder, stay more concrete

the end of first grade or beginning of second. For kinder, stay more concrete.

[Aug 2, 10:16 AM] Tracy Roeser Casey: got it! Thanks Christine! I have used number paths@

[Aug 2, 10:17 AM] sjsoltau: May I ask? At what general age do we expect students to move from additive thinking?? I understand that it is unique to each child, but generally?

[Aug 2, 10:17 AM] Christina Tondevold: I like using the larger number racks for creating a visual of the larger numbers. Kids can see the groups of tens. But I don't like adding and subtracting on them...unless kids are using them to model these additive thinking strategies that Pam has talked about. Too many kids use them to count one-by-one...just like 100s charts

[Aug 2, 10:18 AM] pwharris: Moving from counting to additive can begin as soon as students are ready, but generally middle or end of first grade. Some students will still be transitioning through second. And as numbers get bigger, students sometimes regress until they are comfortable with the bigger numbers.

[Aug 2, 10:18 AM] Karen Schweitzer: The number path ends up being a tool very similar to a 100 chart using one number at a time, in terms of how they use it. Each box is like a discrete item. I have had great discussions with 1st and 2nd graders about how the number line and 100 chart work differently because of what they represent, what you are counting and what you aren't counting. Each tool brings up different counting issues.

[Aug 2, 10:18 AM] Guest5255: I feel like I've developed a much deeper understanding of the math progression with this workshop

[Aug 2, 10:19 AM] pwharris: And I support Christina's work! She does a great job of helping you understand how to help students transition.

[Aug 2, 10:19 AM] Guest4884: multiplicative comparisons are a big part of 4th grade math, I'm not sure if that is when they first start looking at them or not though

[Aug 2, 10:19 AM] pwharris: Guest5255 - thanks for telling me that! I am so glad!

[Aug 2, 10:19 AM] Valerie Thomason: This is the best Math PD that I have encountered in my 30 years of teaching.

[Aug 2, 10:19 AM] Pam Gordon: Question: So certain strategies work for some but not for others so feeling comfortable and confident in choosing their own strategies would be beneficial for them?

[Aug 2, 10:19 AM] txgingerbread: Larger number racks are good for building the relationships of numbers that add to 100. You can see 92 on one side and 8 on the other.

[Aug 2, 10:20 AM] Tracy Roeser Casey: I feel like I push my kinders too hard because I feel like they won't be ready. I am understanding that it is better to really develop number sense will help them so much more!

[Aug 2, 10:20 AM] Maryanne Ehring Kenly: What App is Pam using on her I-pad for this?

[Aug 2, 10:20 AM] pwharris: Pam Gordon - YES! Stds need to own the major strategies so they can work to choose the nice one for the given numbers.

[Aug 2, 10:21 AM] Christina Tondevold: Good points, Karen

[Aug 2, 10:21 AM] txgingerbread: Notability is a great PDF app.

[Aug 2, 10:21 AM] pwharris: Tracy, well put. Yes, if Kinder builds number sense to 20, they are doing great!

[Aug 2, 10:21 AM] Guest6578: Thank you, great information and advice!

[Aug 2, 10:21 AM] Tracy Roeser Casey: That makes me feel a lot better!

[Aug 2, 10:22 AM] Tracy Roeser Casey: thanks so much for this!

[Aug 2, 10:22 AM] pwharris: Maryanne, I use Notability on my ipad

[Aug 2, 10:22 AM] pwharris: Tracy, you are welcome!

[Aug 2, 10:22 AM] Maryanne Ehring Kenly: Thank you!!

[Aug 2, 10:22 AM] Guest5255: Thank you so much, awesome presentation!

[Aug 2, 10:22 AM] mrbb321: Thank you for all of this!!!!

[Aug 2, 10:23 AM] pwharris: Thanks everyone for joining! Love to hear from you on twitter or facebook or MathIsFigureOutAble.com!

[Aug 2, 10:23 AM] pearse_margie: Great presentation!! Thank you!

[Aug 2, 10:24 AM] Guest7998: Learned so much. Thank you!!

[Aug 2, 10:24 AM] Myra Collins: I wish we had had more time with this. Great ideas. I have learned a lot once again.

[Aug 2, 10:27 AM] Myra Collins: I subtracted 25 because many students understand money well enough to go from 100 to 75. Very interesting how this will differentiate based on the expertise of the students.

[Aug 2, 10:28 AM] pwharris: Myra - I agree - it's very interesting!

[Aug 2, 10:31 AM] sjsoltau: This was fantastic!!

[Aug 2, 10:32 AM] Geneviève Décarie: Thanks !

[Aug 2, 10:41 AM] Guest4884: I was not able to get the handouts for this session. Any suggestions?

[Aug 2, 10:45 AM] Nan: Thanks Pam; so much wonderful information. I can't wait to turnkey to my teachers!

[Aug 2, 10:51 AM] Guest7392: I can't wait to use this thinking with students I'm currently tutoring!

[Aug 2, 10:52 AM] Michele Corbin: Thank you! I'm a first grade teacher and we are going to use Bridges this year and I'm really excited and now more so after watching your presentation.

[Aug 2, 11:06 AM] Megundlach: My students build these strategies through our discussions during number talks! It is a wonderful thing to see!

[Aug 2, 11:20 AM] Janelle: I love learning the names of the strategies that I've attempted to

teach with students. Thank you.

[Aug 2, 11:22 AM] Janelle: thank you for emphasizing the transitions

[Aug 2, 11:23 AM] Janelle: excellent explanation for speed... NOT BOGGED down... being efficient. thanks.

[Aug 3, 6:42 AM] Anne Marie: Super!!

[Aug 4, 8:37 AM] Guest2614: Love actually seeing her talk!!

[Aug 4, 8:49 AM] Guest2614: Pertneer...lol!

[Aug 4, 9:17 AM] Guest2614: SHUT UP!!! Then you can take half of 280!!!

[Aug 4, 9:18 AM] Guest2614: So 1400-28!!!!

[Aug 4, 9:18 AM] Guest2614: SO COOL!!!!

[Aug 4, 7:52 PM] Guest8379: AWESOME! Thank you!!!

[Aug 5, 6:47 AM] wtadj: really cool. Agree the alternates are more efficient but may be undercounting the steps a bit :-) Still sold.

[Aug 5, 10:22 AM] melba_quiroz: Wow! Love the getting to a friendly number

[Aug 7, 10:04 AM] Erin Marie: splitting my place value ...love it

[Aug 7, 11:13 AM] Jessica Thorpe Etter: Wow! I think I needed this math when I was a kid! :)

[Aug 7, 11:15 AM] Guest8380: It's so interesting to compare to how I learned math

[Aug 7, 11:16 AM] Guest8380: I learned algorithm--> get the right answer

[Aug 7, 11:16 AM] Guest8380: No one cared if I made sense of what I was doing!

[Aug 7, 11:55 AM] Alexis Arrigo: I am completely mind blown at how students are able to think about math these days. I NEVER was taught math this way. Thanks so much for this vision. I definitely want to learn more about these strategies and implement them.

[Aug 7, 6:59 PM] Guest1481: this is going to help me so much as my daughter moves up the grades!!! i teach k and LOVED the counting & additive thinking!

[Aug 8, 10:12 AM] Guest5708: I think most of the mathematicians all solved the problems differently</pre></body></html>