

00:18:41 Cindy Bryant: Hello from Springfield, MO!
00:18:51 Chance Nalley: Hi from NYC
00:18:56 Loni Picariello: SC
00:19:02 Kelly Pezoulas: Ottawa, Ontario, Canada
00:19:03 Trena Wilkerson: Hello from Waco, TX! #70 tonight!
00:19:04 Elizabeth Baldock: Hello from Houston, TX! 3rd session
00:19:05 Shashidhar Belbase: Hello from the United Arab Emirates (UAE)
00:19:07 Cindy Bryant: Please change your chat setting to "All panelists
and attendees"!
00:19:08 Moreno Tracy: Hello from Phoenixville, PA. I have attended 25
sessions.
00:19:09 Andrea Escarpeta-Davis: Hello from Dallas, TX
00:19:11 Angelita Beltran: Hello from Waukegan, IL
00:19:12 Lawanda Mahomes: Hello everyone! Chicago, Illinois
00:19:15 Kristie Chandler: Hello from VA.
00:19:16 Ann Marie VanSickle: Hi from North Jersey!
00:19:18 Dawn Furstenberg: Hello From PORTLAND OREGON :)
00:19:20 rachel wingo: Hi from Kentucky. I have lost count.
00:19:20 Leslie Texas: Hi from Louisville, KY!
00:19:20 Lesly Brown: Hello from Knoxville, Tennessee! Lesly Brown.
00:19:20 Glenda Escasinas: Hello from Maryland
00:19:21 Katelyn Brophy: Greetings from Chesterfield, Va
00:19:21 Toni Galassini: Hi from Chicago!
00:19:21 Janice Novakowski: Hello from Vancouver, BC, Canada!
00:19:21 Kristen Pratt: Nashua, NH- first session
00:19:22 Vanessa Stokes: hello from chicago area :)
00:19:22 Sharon Black-MacKinnon: Greetings from New Brunswick Canada
00:19:22 Myra Collins: Hello from Greentop, MO
00:19:22 Michael Lanstrum: Welcome from Cleveland, OH - I have attended
all of the sessions
00:19:23 Tricia Kiefer: Hello from Independence, KY . This is my fifth
session so far
00:19:24 Audrey Hodgson-Ward: Hi from Edmonton Alberta
00:19:25 Karen Yancey: Hello from Annapolis, Maryland
00:19:26 Jaclyn Murray: Hi from Cumming, GA!
00:19:26 Dryw Freed: Hello from DC!
00:19:28 Marybeth Spencer: Hello from Ashburn, VA
00:19:29 Fabiana Martins: Maryland!!!
00:19:30 kim bolf: Hello from Duluth, MN
00:19:30 Desiree Merritt: Hello from Maine
00:19:32 Dee Crowell: Hello from Houston Texas.
00:19:32 Harjeet Kaur Ubbi: Hello from Oman
00:19:33 Carmen Guzman: Hello, from Florida
00:19:33 Joan Albers: Hi from Ohio! About 12 sessions!
00:19:34 Jennifer Hahn: Hello from Washington state ... 10 maybe?
00:19:34 PALOMA CARRERA-ANDINO: Hi from El Paso, Tx
00:19:35 Yomary Tarquino: Hello, I'm from West Palm Beach, FL
00:19:35 Bertha Reyes-Pond: Hi from San Antonio, TEXAS!
00:19:36 Rita Shamrock: Hi from Rita Senoia, GA
00:19:36 Meg Dugan: Hello from western New York

00:19:36 Chance Nalley: ALL but I watched some recorded that I couldn't attend
00:19:38 Mary Hill: Hello from New Hampshire
00:19:39 Olga Kosheleva: Hello from El Paso, TX!
00:19:39 Skip Fennell: Hi from Westminster, MD = at least 50
00:19:40 Karen Hoyt: Hello from MA
00:19:41 Nely Ara-is: Hi from Norfolk,VA
00:19:41 Shelley Stocker: New Brunswick Canada
00:19:41 Sandra MacDonald: Hello from Nova Scotia
00:19:42 Archita Vaghasiya: Hello from Boston, MA
00:19:42 Julie Mainwaring: Hello from Portland, Oregon!
00:19:42 Debbie Perry: Hello from Boynton Beach Florida
00:19:43 Emerlina Binuya: Hi! I'm Emerlina from Petersburg,VA
00:19:44 ABDUL OTHMAN: Hi from Penang Malaysia
00:19:45 Mary Butkus: Wauwatosa WI says hi
00:19:46 Cheryl Ann Doyle E Barran: hello from Bronx. ny
00:19:48 Aya Zvaigzne: Nashville, TN represents - best regards to all
00:19:49 Carmen Guzman: I attend 5 sessions
00:19:50 Charleta White-Fletcher: Rocky Mount NC by way of Maryland
00:19:51 Carol Matsumoto: Hi from Winnipeg
00:19:51 Phyllis Poston: Hello from Tennessee!
00:19:52 Wanda Parker: Hello from Virginia
00:19:54 Camille Wilson: Hello Hello from Virginia!
00:19:55 Jet Yeung: Hello Everyone--Jet from Henderson, Nevada
00:19:56 Daniel Irving: Hello from North Providence, RI!
00:19:56 Maria Woehl: Hello from San Diego, CA!!
00:20:00 Deanna Rigdon: Hello from Utah
00:20:02 Helene Alalouf: Hi from NYC!
00:20:02 Crysali Therese Dayaganon: Hello from Philippines, my 3rd session...
00:20:03 Mark Fili: Hello from NYC
00:20:03 Nell Thurlow: Bonjour from Louisiana
00:20:05 Nellie Alvarez: Arizona Nellie Alvarez
00:20:06 Katelyn Devine: Hi from Richmond... this is number I lost count!
00:20:06 Tanya Landry: Hi from Baton Rouge!
00:20:07 Marianne Mammon: Hello from NJ!
00:20:07 Fran Huntoon: Hello from Vermont
00:20:10 Melanie Nan: Hello from Virginia too!
00:20:13 Nell Thurlow: 45
00:20:13 Aya Zvaigzne: Lost count of how many sessions....
00:20:14 Toni Galassini: 30th session
00:20:14 Jennifer Lewicki: Hello from Sonora California
00:20:15 Vasiliki Balaskas: Hello from Chicago!
00:20:15 Lou Darcera: Hello from Maryland!
00:20:15 Karen Hoyt: 1st session
00:20:16 Angela Jeffreys: 1st session! From Oakland, CA
00:20:16 Jenny Cheung: Hi from Okinawa, Japan.
00:20:18 Zita Amor Mankos: Hello everyone, Happy Monday! from Ms. Zita Amor C. Mankos, New York
00:20:21 Carmen Guzman: CGuzman 5 sessions

00:20:22 Noe Eugenio: Hi from Philippines!
00:20:26 Debbie Perry: 6th session
00:20:31 Joanmarie Kulinka: From Joan Kulinka from Virginia Beach, VA
too many to count
00:20:31 Sharon Black-MacKinnon: 70th session:-) Very grateful to be able to
attend
00:20:34 Jennifer Lewicki: Kindergarten
00:20:37 Melanie Nan: I think 3rd
00:20:38 Debbie Calhoun: From Tyler Texas
00:20:40 Phyllis Poston: 20th
00:20:41 Doreen Seaman: Hi from NYC
00:20:44 Debbie Grady: 7 sessions, not including today
00:20:45 Jennifer Lewicki: this is my 15th session
00:20:47 Sandra MacDonald: 35th session
00:20:50 Belkis Ceri: Hi Bay area CA
00:20:52 Melissa Campbell: Melissa Campbell; Fort Payne, Alabama
00:20:57 Terri McCarthy: Hi from Danbury, CT this will be my 18th session
00:21:06 Bertha Reyes-Pond: 5 sessions, 7th grade
00:21:06 Donna Ware: Hello from Alabama
00:21:10 William Speer: Bill Speer from Las Vegas
00:21:10 Claudette S: Hello from Brooklyn, NY
00:21:11 Tamara Dingman: 25th session! Hi from MD
00:21:20 Lisa Aldous: Hello from Maryland, I've done about 30 sessions but
would have to go back and check for an exact number!
00:21:20 Emily Graff: hello
00:21:21 Ramona Hall: Hi from NC
00:21:24 Claudette S: This is my 14th session
00:21:25 Jill Mancini: Hello from Webster NY
00:21:27 Miller Amy: Hello from MD!!
00:21:27 Wanda Parker: 9th session
00:21:31 Lisa Lambuth: Hello from Los Angeles, CA This is my 20th!
00:21:31 Aya Zvaigzne: Mondays are usually for elementary, but this might
be relevant for understanding basis for hs ?
00:21:35 Nellie Alvarez: A lot they were all great Nellie Alvarez
00:21:38 Tawanna Cason: Hello Everyone from Forestville, MD.
00:21:39 LANY JAMERO: good morning from philippines
00:21:42 Jada Pearson: Hello from Beaverton, Oregon. I'm somewhere in the
teens:)
00:21:44 Michael Gougis: Hello from Chicago, IL!
00:21:45 Elizabeth Blankenship: Hello from S. Chesterfield, VA
00:21:48 Luzviminda Bayarong: Hi from Bowie Maryland
00:21:52 Ma.Cecilia Cueva: good morning from Philippines.
00:22:00 Kathleen Farry: hi from PA
00:22:05 Andrea Rochman: Andrea Rochman - NJ
00:22:06 Ashley Edwards: hello from NC
00:22:06 Ivanelisy Mejias: Hi from VA
00:22:07 Denise Huddlestun: Hi from Atlanta
00:22:09 Jacqueline Colbourne: Hi from Temple Hills, MD
00:22:09 Zahra O'Reilly-Bates: Hello from St. Croix, U.S. Virgin Islands
00:22:12 Shailyn Rivas: Hi from the Bronx, NY

00:22:13 Lesley Barrette: Hello from Webster, NY
00:22:13 Nancy Cooper: Hi from Portland, Maine!
00:22:15 Laura Ramp: Hi from New Jersey
00:22:17 Nesrin Stout: Hi from Houston
00:22:21 Valerie Davis-Fells: Hello from Pennsylvania!
00:22:21 deanna brajcich: Canada loves you Marian!
00:22:23 Chimire Owsley: Hello, from Washington, DC
00:22:24 Genesis Docena: hello from Washington dc
00:22:24 Jaclyn Duronio: Hello from Biddeford, Maine!
00:22:24 Debra Cowan: Hello from Mastic Beach, NY
00:22:24 yvette davis: Yvette Davis from Portsmouth, VA
00:22:26 Kelly Coble: Hello from Rockingham, NC
00:22:26 Denise Griffiths: Hello from Denise Griffiths in Wilmington,
DE!
00:22:27 Dorothy Shapland: Hello from Denver CO
00:22:29 MYLA DETECIO: good morning from the Philippines
00:22:30 Kimberly Burch: happy to be here from Prosper, TX
00:22:30 Claudette S: Thank you Lorie! Thank you Chonda!!
00:22:31 Tamika Gaskill: Hello from Kinston, N.C.
00:22:32 Monica Byron: Hello from Minnesota!
00:22:34 Tapati Sarkar: Hello! from Tomball, Tx
00:22:36 JaDawn Wagstaff: Buffalo, NY
00:22:37 Jean Mistele: Hi from Virginia
00:22:37 Tammy Hedgepeth: Hello from Enfield, NC!
00:22:39 Susan Merrill: hi from Susan Ipswich, MA
00:22:41 Zara Simpson: Hello from Maryland
00:22:42 Evelyn Amoah: Hello from Ontario
00:22:42 Wendy Iacobucci: Hello from Eastlake, Ohio
00:22:43 Jacquelyn Smith: HI! From NY
00:22:44 Rowena Duane: Hi all...from Issaquah, WA
00:22:45 Deepti Sehgal: good morning everyone
00:22:48 Jacqueline Colbourne: Hi st. Croix I'm from St.Thomas
00:22:51 Eric Von Valdez: Hello, watching from KSA
00:22:54 Alayne Armstrong: Hi from British Columbia, Canada
00:23:05 Kristin Haynie: Hi, from Maryland
00:23:05 Deborah Bishop: Deborah NC I always learn from you!
00:23:07 Sandra MacDonald: LOVE Marian Small!
00:23:07 Laura Lopez LeRoy: Hi everyone from Laura in Houston
00:23:10 Alicia Scott: San Antonio
00:23:16 John Sasko: GREETINGS from Arrowsic Island Maine (I'm on
vacation)
00:23:30 David Brancamp: Hi from Reno, Nevada
00:23:30 Dawn Ciancaglioni: Hello everyone from Ocean City Maryland
00:23:35 Kristen Perrine: Hello from NJ
00:23:38 Sharon Black-MacKinnon: Thank you Marian for sharing with us!
00:23:52 Sherry Minor: From Perry, GA
00:23:58 Alma McFarland: Greetings from the beautiful Texas Hill Country
00:23:59 Joanne Baker: Hello from Illinois
00:24:08 Randolph Chapman: Hi from NYC
00:24:13 Cindy Bryant: Please set your chat to "All panelists and

attendees" so everyone can see your posts!

00:24:15 KimberlyAnn Currens: Howdy from Texas A&M via St Louis
00:24:30 carolyn: Hello from Carolyn Kieran in Montreal
00:24:35 susie Krier: Hi from Pleasanton, CA
00:24:39 George Litman: Hi from George Litman @ National Louis University in Chicago
00:24:46 Elizabeth Wallace: Santa Clara CA. This is about my 9th session.
00:24:52 Cindy Bryant: Hi Carolyn Kieran in Montreal!
00:24:56 Claudette S: Marian, so happy to learn from you.
00:24:58 Rachelle Broggin: Hello from Harrisburg PA!!!!
00:25:01 Tina Hall: Hello, from West Virginia
00:25:57 Carol Matsumoto: @Hi Carolyn from Carol in Winnipeg
00:25:58 India Puch: India from Columbia, SC
00:26:03 Imelda Valencia: Hello everyone. From Maryland but a native of the Philippines
00:26:09 India Puch: Day 58
00:26:16 Christian Hoeffel: Hello from my house
00:26:27 Nadine Richards-Ramsey: Hello from Maryland.
00:26:35 Nora Marasigan: Hello from Philippines.
00:26:38 Joanne Blake: Hello from MN
00:26:42 Betty Stallings: Hello Portsmouth VA
00:26:50 Sandra MacDonald: it's helpful!
00:26:51 India Puch: Of course!!
00:26:58 Laura Tomas: Hi from West Palm Beach, FL!
00:27:00 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.
00:27:06 Maria Hull: Hello from IL
00:27:07 Emily Graff: Enough math to satisfy the appropriate grade level standards
00:27:11 Catherine Abbott: EL students often have different procedures they were taught in their previous school system.
00:27:17 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments
00:27:24 Dave Hankin: Hello from Globe, Arizona.
00:27:33 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.
00:27:36 Jennifer Hahn: Need to be open to other ways for that exact reason Catherine!
00:27:57 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.
00:28:06 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.
00:28:08 Melonie Smith: Hello from Chicago
00:28:12 Eleanor Ennis: hello from Salisbury, MD on the Eastern Shore between the Atlantic Ocean and the Chesapeake Bay.
00:28:20 Stephenia Courtney: Hello from Las Vegas, NV
00:28:30 SHANKAR SARKAR: Hell from Shankar, NYCDOE.
00:28:44 Catherine Abbott: @Jennifer...true, true. AND not be afraid to let someone else...even a student to Show & Tell their alternate way.

00:28:50 Emily Graff: No more to it than that have to be interested in it
00:28:50 Melissa Luzano: Recognizing if the math is valid when a different
procedure is used
00:28:56 Cicely Washington: Hello from Virginia
00:28:57 Wisnu Siwi Satiti: Hello everyone! good morning from Indonesia.
00:29:13 Emily Graff: Good evening from Ohio
00:29:14 Jesse Taylor: Elanor, where do you teach? I'm in Salisbury too!
00:29:26 Jesse Taylor: Eleanor
00:29:31 Zulema Abreu Hernandez: happy to be here

00:29:50 Ann Marie VanSickle: And able to evaluate if it is a "good"
resource

00:30:03 Eleanor Ennis: I'm liaison from SU TO SMS.

00:30:03 Lorie Huff: Remember to change your chat delivery from all
panelists to all panelist and attendees so all participants can see your comments.

00:30:09 Cindy Bryant: Please set your chat to "All panelists and
attendees" so everyone can see your posts.

00:30:26 Lesly Brown: So true! Each child is different. You must meet
the student at their level.

00:30:27 NANCY MABUNAY: pleasant morning from the Philippines 🌸🌸

00:30:39 Eleanor Ennis: JESSE Taylor where you ?

00:30:53 Jesse Taylor: Oh ok. I teach 4th grade at Prince Street. Nice to
see someone else from Salisbury!

00:30:59 Marcie Schuler: Good evening from STL, MO!

00:31:09 Eleanor Ennis: glad to meet you.

00:31:13 Anupama Anand: hi from california

00:31:23 Sandra MacDonald: CGI types

00:31:24 Lorie Huff: Remember to change your chat delivery from all
panelists to all panelist and attendees so all participants can see your comments.

00:31:24 Emily Graff: Addends

00:31:26 Kelly Kuster: Greetings from New Jersey

00:31:26 Andrea Ogden: All problem-types from CGI - yes

00:31:54 Ann Marie VanSickle: Also [=23-12

00:32:13 Catherine Abbott: Students also need to see the "problem" on
both sides of the equation and the "answer" on the other side of the equation.

00:32:16 Ahmad Queenan: Hi Jesse it Ahmad! How are you?

00:32:24 Andrea Ogden: It can be either.

00:32:25 Sandra MacDonald: could be either - depends on how you solve
it

00:32:30 John Sasko: comparison problem.

00:32:31 Ann Marie VanSickle: both - what is the relationship between

00:32:32 Kathy Smith: Missing addend problem

00:32:34 Andrea Ogden: You can use addition to subtract

00:32:42 Diana Reynolds: $12 + N = 23$

00:32:53 Jesse Taylor: I'm great! How are you? How are you holding up?

00:32:53 Emily Graff: Add up from 12 by 10s plus 1s

00:32:54 Sandra MacDonald: again, could be both

00:32:56 Catherine Abbott: Definitely do this. Ask students to explain
how they find their process to find the answer.

00:32:58 Marianne Mammon: Subtraction is the strategy to use to solve it

00:33:02 John Sasko: start unknown

00:33:11 Thy Dinh: it's both

00:33:15 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:33:17 Emily Graff: Try without numbers too

00:33:23 Stephenia Courtney: inverse operations

00:33:30 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:33:32 Elizabeth Wallace: This would be a great class conversation to have with students. Give them these problems and ask them what they would add or subtract?

00:33:55 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:34:00 Emily Graff: Two different amounts of something

00:34:04 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:34:05 Sandra MacDonald: too many more

00:34:06 Thy Dinh: math is about relationships, and there are diff ways to look at these problems

00:34:22 John Sasko: Subtraction is so much more than "take away." Stop saying take away - say less, minus or subtract!

00:34:32 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:34:42 Valerie Davis-Fells: John, I agree.

00:35:28 Thy Dinh: This is the problem with key words. They take AWAY context (meaning) But in ELA, we say context is important, so why would we do the opposite in math as ELA?

00:35:31 Helene Alalouf: At the Virtual Math Summit this week, I was reminded that fluency is fast, accuracy, AND flexibility!

00:35:34 Emily Graff: $8+8 = 16$ $8-2 = 6$ so $14-8 = 6$

00:35:38 WARASABON DOMINIKUS: hello from indonesia

00:36:15 Jennifer Hahn: what is efficient for one person may be less efficient for another

00:36:23 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:36:35 Tracey Miller: I agree Jennifer

00:36:37 Emily Graff: Accept them even though they may be different

00:36:43 Gary Libby: Usually it comes down to what is efficient for middle and high school teachers.

00:36:49 Wanda Parker: I agree Jennifer Hahn

00:36:52 Emily Graff: Rounding

00:36:55 Catherine Abbott: "We "tolerate" other strategies "7 times 77 times? Better, we should celebrate other strategies and have students discuss which way makes sense tot them? More efficient? How do they judge?"

00:36:57 Cheryl Lowery: hello from west tennessee

00:37:06 Helene Alalouf: Thy Dinh: What do you mean: why would we do the opposite in math as ELA?

In both content areas, words can have multiple meanings, depending on context.

00:37:09 deanna brajcich: efficiency still needs to be accurate! Too often kids make mistakes with the algorithm.

00:37:19 Marianne Mammon: It is more efficient but only if the student understands place value and why the standard algorithm works

00:37:48 Sandra MacDonald: more efficient than the previous one

00:37:57 Harjeet Kaur Ubbi: $71 - 30 = 41$ then $41 - 8 = 33$, by partition second number into tens and ones

00:38:06 John Sasko: HUmans are not efficient -- machines are. EFFECTIVE!

00:38:12 Sandra MacDonald: I like that much better

00:38:35 Sandra MacDonald: love the open number line

00:38:41 Ashley Edwards: smh...John

00:38:41 Emily Graff: Let students choose which way they can make sense of

00:38:42 Jesse Taylor: The 2nd student probably has a better idea of estimation and rounding

00:38:50 Catherine Abbott: Machines are effective if they are programmed well.

00:38:53 Sandra MacDonald: very efficient

00:39:05 SHANKAR SARKAR: love this open number line

00:39:30 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:39:52 Thy Dinh: @helene I mean that CONTEXT is very important in both math and ELA, but if you only use key words in word problems, that takes out CONTEXT. Ex. altogether means add. That's always going to be true

00:39:53 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:40:08 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:40:11 Deanna Rigdon: I like shifting on the number line--by adding 2 to both the subtrahend and minuend. The subtrahend is a nice even group of tens.

00:40:32 David Barnes: @Linggou - I think we do. There is a difference in being able to read and teaching reading.

00:40:36 Thy Dinh: That's NOT always going to be true that altogether means to add

00:40:45 Emily Graff: $38 = 3 \text{ } 10\text{s}$ $71 - 30 = 41 - 8$

00:40:59 Jennifer Hahn: so many of my middle school students feel defeated in math because they never figured out a "fast" way to get the answer - it's a balance of finding what makes sense to a student (conceptual) then getting enough practice to get the desired accuracy and speed (fluency)

00:41:52 Mary Butkus: I never did $10 \text{ mines } 8$ then one

00:41:57 Emily Graff: Speed is not always efficient and accurate in math as slow and steady may not win the race the fastest but iw will still get to the finish

00:41:58 Sandra MacDonald: love constant difference!

00:42:00 Helene Alalouf: This is truly eye-opening; you are showing us a "simple" subtraction problem in multiple ways. We could offer these in station teaching and ask students to get into the "mind" to explain, and see what they "see" to raise number sense. It is so important for students to verbalize their mathematical thinking. Thank you.

00:42:22 Deanna Rigdon: I love this idea. Especially when there are many

zeros in the minuend.

00:42:23 Emily Graff: Compensation strategy

00:42:29 John Sasko: Yes Sandra - constant difference very important for later years.

00:42:36 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:42:54 Sandra MacDonald: ooooh! that's nice

00:42:56 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:42:59 Janice Novakowski: These many ways highlight the importance of nurturing flexible thinkers.

00:43:01 Akia Goudy: So much of this has to do with depth of understanding, and whether teachers are teaching to the concept behind the math work, or just the surface level procedure. Short answer is kids need both. Calculators make computation only instruction moot and inefficient to spend an entire year on

00:43:15 Kelley Atwood: Great variety

00:43:30 Tanya Landry: My dyslexic students do better with missing addend / missing factor problems.

00:43:38 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:43:40 Kristen Perrine: I think everyday uses should include both.

00:43:48 Cheryl Ann Doyle E Barran: kid every day uses

00:43:55 Jennifer Hahn: its teaching kids the relationship between numbers, and the idea that you can change numbers like legos to solve a problem

00:44:03 Delores Rushing: This is great Marian because children solve problems differently depending upon the country they are from.

00:44:04 Jacqueline Colbourne: It should be related to the students.

00:44:09 Dave Hankin: It's good to know as many ways as possible as a teacher...

00:44:09 Rachelle Broggin: how do you pretend your adding in that last problem???

00:44:09 Emily Graff: Let the students guide you

00:44:14 Dee Crowell: I like them all! Good to have different ways for different ways kids think.

00:44:16 Lisa Lambuth: I think teachers learn some of these from their students.

00:44:17 Joan Fournier: Open number lines and base ten blocks

00:44:19 Elizabeth Wallace: I think we can address all of these different ways of solving through math talks. Allow students to show what way works for them and why

00:44:19 Mary Butkus: I think students and the teacher should build a class toolbox

00:44:19 Alexandra Collison: numberlines

00:44:20 Brenda McNeese: Yes, they should not a variety of methods to solve any problems. But not necessarily teach all methods.

00:44:20 Tracey Miller: All for all learners!! Flexible thinking is so important!!

00:44:21 Diana Navarro: teachers should know all of it

00:44:22 Sandra MacDonald: I think they need to be open to new ideas from students - but I would look at manips, open numberline

00:44:25 deanna brajcich: my favourite is the number line

00:44:25 Ramona Hall: None of them are wasted time. You never know which strategy a student will come up with!

00:44:26 Laura Tomas: Teachers should know all of them so that they have lots of tools in their toolbox

00:44:27 Ann Marie VanSickle: As a math coach of K-8 teachers, I think all of them because these strategies carry over into upper grades

00:44:29 M Castanares: not all, but def multiple ways

00:44:30 Debbie Calhoun: The hundreds chart would have confused me!

00:44:30 Jada Pearson: Learning needs to be student-focused

00:44:31 Raquel Jones: None of it was a waste of time, it is important to be open minded and flexible

00:44:31 Catherine Lane: The connection between addition and subtraction

00:44:32 Shannon Bessette: Work from concrete to abstract

00:44:32 Dave Hankin: That way you are prepared for whatever students say...

00:44:33 Denise Huddlestun: It's good to know multiple ways!

00:44:34 Audrey Hodgson-Ward: Need to know relationships

00:44:35 Melanie Nan: relationships , flexible thinking,

00:44:35 Kathy Beamer: Teachers should understand all - students might use.

00:44:36 Lisabeth Rice: teachers should "know" all of them but do not need to teach all

00:44:36 Ava Sawin: student guide what's needed

00:44:36 Sandra Zirkes: Just asking them to think about different ways is important.

00:44:36 Emily Graff: Gather their input on how to teach them effectively

00:44:37 Laura Ramp: Number sense, relationship between addition and subtraction, flexible thinking, various strategies

00:44:37 John Sasko: They have to know the ones that will continue in later years. Not just the way they were taught

00:44:37 Michele Moore: know them all

00:44:38 Jacqueline Colbourne: I think teachers should be open minded and explain how they get their answers.

00:44:38 Ralph Connelly: open numbr line is poerful

00:44:39 Twyla Hart: If students are struggling, find a new strategy to help them

00:44:39 Kelly Pezoulas: know many

00:44:39 Deanna Rigdon: Definitely keep the compensation. when you have zeros in the minuend - just subtract one from both numbers. Then students subtract from 9s

00:44:39 Akia Goudy: If teachers understand the underlying concepts they can see the value of them all, and teach them when apporpriate

00:44:39 Leigh Sokoloff: they should know all of them because our students come in with different starting points - comes down to their own comfort with Math

00:44:40 Cashonna Thomas: number line, place value chart, counting up

00:44:42 Sandra MacDonald: It's helpful to be introduced to them all

00:44:43 Catherine Abbott: Using models and concrete objects to

represent subtraction and related ideas

00:44:45 Tina Hall: It depends on the students' understanding.

00:44:45 Fran Huntoon: Teachers should understand how students access the learning and use that as they move forward. Teachers should keep on learning!

00:44:45 Porshia McCall: It depends on the student body and the comfortability of the teachers. Teachers should push themselves to know different strategies.

00:44:46 Ashley Bucklin: Introduce a few and ask students what they see too!

00:44:47 Jesse Taylor: They don't have to know them all but be open to students using any strategy

00:44:47 Lori Martensen: flexibility in thinking is the goal

00:44:47 Imelda Valencia: As teachers we need to know all those different ways since students also learn in different ways.

00:44:48 Lauren O'Neill: Give students opportunities to solve problems and accept different solutions. I have learned so much from my students over the years.

00:44:48 Marianne Mammon: Having number sense and understanding the relationship between numbers; place value

00:44:48 Wanda Parker: Different students learn differently - they are all good.

00:44:50 Etienne Saunders: I think the teachers should be able to know at least 5

00:44:50 Kelley Atwood: Too many ways can confuse them.

00:44:50 Lisa Aldous: It helps to know more because it helps you see what your students are doing/thinking and potential misconceptions.

00:44:50 Jenny Kerven: I like not having to exchange a rod for units.

00:44:52 Christian Hoeffel: They need to know all strategies- the "what the teacher is comfortable with" is bad teaching

00:44:52 John Riley: Let students come up with methods and write them on the board. Push for more so they really think

00:44:52 Dayna Branson: Yes, teachers should know them all.

00:44:52 Harjeet Kaur Ubbi: teacher should know all different strategies

00:44:52 Ashley Edwards: teach in whatever way aligns with the standards

00:44:52 Shelley Stocker: Students should use what they come up with and share with out students. They are the best teachers.

00:44:52 Dawn Ciancaglini: I think making changing the ugly problems instead of regrouping because some many make their errors when regrouping.

00:44:53 susie Krier: Teachers should be aware of multiple methods. Everyone has their favorite

00:44:54 Erica Farnen: Teachers should share all strategies, it helps to differentiate!

00:44:54 Karen Hoyt: Teachers need to know a few ways but do not need to know them all. They need to be open to encouraging students to find various ways to help them understand number sense.

00:44:55 Moreno Tracy: Know as many as you are comfortable and be flexible and listen to students

00:44:55 SHANKAR SARKAR: start with one that easy for your class

00:44:55 Karen Vance: Teaching students and teachers to be flexible with their thinking

00:44:56 Sharon Black-MacKinnon: As a teacher it is great to know them all so you can address the students' needs.

00:44:56 Mary Macias: the students need to know different ways to solve a problem

00:44:56 Diana Reynolds: The more the teachers know the better they will be able to help the student think through.

00:44:56 Kelly Coble: I think teachers should know the use of visuals and standard algorithm to give students an option.

00:44:56 Rhonda Coleman: Teachers should not know them all, but learn from students.

00:44:57 Bonnie Angel: Important for teachers to see the relationships between the strategies.

00:44:57 Nadine Richards-Ramsey: Teachers can introduce them all and have students choose.

00:44:57 Melanie Nan: efficient is different for each student

00:44:58 Anne Hartman: I find that I like to see how the children find different ways themselves. The teacher needs to know if they are correct

00:44:58 Deborah Bishop: Deborah Bishop= Know all as to challenge the gifted.

00:44:59 Robin Behrman: I think you should engage in discourse with students and then have that guide you.

00:44:59 Kerry Lindo: I want to know them all even though I may not use all

00:45:00 Kristen Perrine: I think it is important to understand the different strategies, that way students do not think they are wrong when they exhibit divergent thinking.

00:45:00 Regina Mistretta: All wonderful and even better when teachers share how they connect.

00:45:00 Donna Biddulph: Teachers should know them all - see what works for students and see how students grow them...

00:45:01 deanna brajcich: seeing the eight in the tens block is a very important 'aha' moment for teachers

00:45:01 Cherish Alberts: Maybe at least one visual plus symbolic at a minimum.

00:45:01 Gricelda Monroy: I think teachers just need to know and have a solid understanding of the base ten system and the flexibility of the system

00:45:02 Skip Fennell: Building flexibility within understandings

00:45:02 Valerie Davis-Fells: I think it is important to have the students explain their thinking.

00:45:02 De Zhang: Teachers should know all of them.

00:45:03 Cheryl Ann Doyle E Barran: diversity is great, you do not have to teach all at the same time, a bit at a time to encourage flexible thinkers

00:45:08 Donna Ware: Number talks help students figure out what makes sense to them.

00:45:08 Mark Roddy: I'm a big fan of the open number line . I think that over a few years with good professional development, they should develop their understanding of all of these and more.

00:45:09 Mary Landis: good to have different ways! gives kids multiple ways to be successful

00:45:13 Michael Gougis: I liked them all and kids can use what works best for them.

00:45:14 Delores Rushing: Know as many as possible because of our diverse population

00:45:15 Jo Ann Luhtala: From Jo Ann Luhtala You should do them all. It is important that all students can understand in some way.\

00:45:16 Twyla Hart: Teachers should be willing to explore new possibilities and ways of explaining in order to help students

00:45:17 Ashley Edwards: teach according to the standard

00:45:17 Divya Mishra: ask students to come up with different ways to come to the answer!

00:45:23 Ginette Peralta Suarez: i want to know them all but I learn a lot by letting the kids explore them

00:45:25 yvette davis: I feel that a good Math teacher should know what matches the standard. So, therefore give students options to help when you see what works for them.

00:45:27 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:45:27 Laura Chambless: The open number line and shifting on the numberline

00:45:28 Ream Sallaj: find what makes it comfortable for the students

00:45:29 susie Krier: Ask the question and let the students share their thinking

00:45:29 Nell Thurlow: Open number line is helpful for students,

00:45:33 Lauren O'Neill: Teachers can create a classroom where all strategies are valued and teacher and students make an effort to understand each other.

00:45:34 Melonie Smith: There's usually ONE student who will understand ONE of the options presented.

00:45:37 Marcie Schuler: Based on student strengths & level of understanding with place value, should determine the specific strategies that should be modeled and practiced. Through daily Number talks, all students are given ample opportunities to share their understanding.

00:45:40 Sandra MacDonald: Sometimes teachers don't recognize their students' strategies

00:45:45 Melissa Luzano: Students should be able to use any method they prefer. Teachers should know if the math is valid.

00:45:47 Claudette S: Constant difference. As teachers, I think we should be aware of as many strategies as possible. We need to be responsive to students as they explore it.

00:45:56 Melanie Nan: teachers need to be open to the children's ideas

00:45:57 Vasiliki Balaskas: Teachers should teach the strategies and students should teach the strategy they. feel comfortable

00:46:02 Dave Hankin: I wish we had math teachers that only taught math at the lower grades....

00:46:04 Jennifer Lewicki: I think giving students strategies for math is critical--I may not need to be an expert in all strats, but allowing children to solve a problem with the strat that makes the most sense is so important--we then can guide them toward the more efficient strat once conceptual understanding has happened

00:46:05 Kelly Kuster: you could introduce a few and then see if students could figure out if there are other strategies that they could use as based on what you had first introduced

00:46:09 Cheryl Ann Doyle E Barran: true the more you know the more you can share

00:46:11 Kathy Smith: I don't think they need to know all, but they need to be exposed to different strategies, and to look for patterns. The new teacher needs to ask questions to get the students to explain their processes.

00:46:14 Donna Ware: Teachers need to be exposed to all these so they can support different ways of thinking from their students.

00:46:23 Robin Behrman: I teach at the college level, and many of my students come in with a fear of math and/or a poor background.

00:46:26 Emily Graff: It never hurts to show more ways

00:46:35 Judy Whisler: As teachers, we are perpetual learners.

00:46:42 Rachelle Broggin: does she have a book??

00:46:47 Gricelda Monroy: @Donna so true!

00:46:48 Sandra MacDonald: I think constant difference can be taught through number strings - it's a great strategy

00:46:51 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:46:52 John Sasko: Marian Small's FRACTION book is a great resource!

00:47:05 Jennifer Hahn: students who are exposed to these different strategies have an easier time in upper grades - I can tell the kids who have worked with number lines and manipulatives before - they pick up our 6-8 content more quickly

00:47:06 Rachelle Broggin: I teach first grade

00:47:10 Sandra MacDonald: yes

00:47:23 India Puch: It shows when the students get in the 8th grade.

00:47:31 Emily Graff: Also we teach how we were taught as the way easiest and what worked for us but our students may not see it in the same way as us

00:47:33 Akia Goudy: Yet, no one says in literacy - teachers shouldn't know all spelling rules, literary genres, essay writing styles, etc. We certainly need better teacher training and time to help teachers to get over their own math misconceptions and anxieties

00:47:34 Stephenia Courtney: more ways the better

00:47:53 Melissa Luzano: Knowing that multiplying the num and den by the same number is multiplying by 1

00:48:01 Judy Whisler: Yes, Akia!

00:48:02 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:48:22 Ann Marie VanSickle: We need to help teachers unpack the standards as well to understand what they mean

00:48:44 andrea: have to have students write the number every way they can think of that s quival

00:48:51 Sandra MacDonald: it helps to have a context

00:48:52 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:48:53 Regina Ging: what do you notice, what do you wonder

00:48:55 Thy Dinh: yes @Akia

00:48:57 Emily Graff: Transform each to the other

00:49:11 Emily Graff: Proofs are goof early on

00:49:13 andrea: equivalent.

00:49:15 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:49:23 Ann Marie VanSickle: They need to understand the concept of the

Whole

00:49:26 Dave Hankin: Students need to be able to explain their answers with our guidance.

00:49:27 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:49:41 Brenda McNeese: $\frac{4}{5}$,

00:49:48 Ashley Edwards: students need to be taught how to show their work

00:49:49 John Sasko: REASONING about fractions key - not just resorting to the way to make equivalent.

00:49:51 Sandra MacDonald: they are composite numbers

00:49:56 Karen Hoyt: We hope they see patterns

00:49:57 Melissa Luzano: Less than half

00:49:58 Donna Biddulph: multiples

00:49:59 Lisa Aldous: multiples

00:50:00 Cherish Alberts: multiples

00:50:04 Catherine Abbott: even and odd number

00:50:04 Fran Huntoon: Isn't a fraction a number?

00:50:07 Kristen Perrine: The numerators and denominators are multiples of each other.

00:50:08 Harjeet Kaur Ubbi: multiples

00:50:12 Wanda Parker: multiples

00:50:13 Erica Farmen: multiples

00:50:14 Sharon Black-MacKinnon: see the patterns

00:50:18 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:50:27 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:50:30 Gary Libby: A list of multiples or counting bys.

00:50:34 yvette davis: Reduce your answer in simplest form

00:50:38 Shari Samuels: growing proportionally

00:50:53 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:50:56 Donna Biddulph: I did not know that!

00:50:59 Karen Hoyt: interesting

00:51:01 Sandra MacDonald: difference gets larger as the denominator gets larger

00:51:06 Ann Marie VanSickle: interesting

00:51:13 deanna brajcich: great inquiry question

00:51:13 Catherine Abbott: Simplest form the greatest common factor of the numerator and denominator is 1.

00:51:21 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:51:26 Delores Rushing: Important to know

00:51:33 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:51:34 Sandra MacDonald: kids gets tricked by that

00:51:35 Diana Reynolds: I think they need a good mental visual of fractions.

00:51:40 Ann Marie VanSickle: common numerators help with reasoning about size of fraction

00:51:43 Judy Whisler: Understanding adds to comprehension and flexibility.

However, kids and parents will say that you don't need to know how to code to use a computer so why do they have to understand what's happening when working with fractions. Promoting growth mindset is never ending:)

00:51:44 Jennifer Hahn: yes - visual is key!

00:51:59 Catherine Abbott: Fraction closer to above or below $1/2$

00:52:00 Sandra MacDonald: yes

00:52:03 Emily Graff: Take half of 41

00:52:11 melissa magnotta: Because half of 41

00:52:11 Ann Marie VanSickle: yes

00:52:14 Stephenia Courtney: conceptual

00:52:17 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:52:18 melissa magnotta: We need to

00:52:19 Sandra MacDonald: no

00:52:20 Stephenia Courtney: yes

00:52:24 Kerry Lindo: yes we should

00:52:25 Melanie Nan: yes

00:52:25 Jennifer Hahn: benchmark fractions - $1/2$ $1/4$ - I would hope they see those automatically by the time they hit 6th

00:52:26 Ann Marie VanSickle: conversations with students to help them discover it

00:52:29 Kelly Coble: $20/40$ is equal to $1/2$, which is close to $18/41$

00:52:30 Sandra MacDonald: we need to get them to model it and discover it

00:52:30 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:52:31 deanna brajcich: if you do enough they will notice on their own and share in a number talk

00:52:32 Catherine Abbott: Can we let thee kids find the method to compare to $1/2$?

00:52:32 Emily Graff: Relation of 1 over 2 2 to 1

00:52:40 Emily Graff: 1 if half of 2

00:52:47 Marianne Mammon: Teacher should not tell students

00:52:49 Stephenia Courtney: conver9

00:52:54 Sandra MacDonald: modelling it makes a big difference

00:53:03 Stephenia Courtney: Conversions

00:53:03 John Sasko: REASONING!

00:53:11 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:53:22 Thy Dinh: making sense of fractions by showing how its similar and different than relationships of whole numbers

00:53:23 Catherine Abbott: Precursos to ratios and proportional reasoning.

00:53:26 JaDawn Wagstaff: number sense!

00:53:33 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:53:39 Emily Graff: yes

00:53:47 Judy Whisler: I've pushed benchmarks but discovered that teachers feel they can skip those lessons when there's a time crunch.

00:53:52 Catherine Abbott: Using units "ducks"

00:53:54 Ann Marie VanSickle: understanding of unit fractions
00:53:59 Sandra MacDonald: ducky
00:54:01 Stephenia Courtney: love it
00:54:09 Phyllis Poston: adding the denominators changes the whole
00:54:11 Emily Graff: Parts of wholes need to stay consistent
00:54:17 Christian Hoeffel: FRACTION GREATER THAN ONE!!! No number is improper!!!!!!
00:54:19 Marianne Mammon: Exactly, the fraction size (den) is a label
00:54:20 Ann Marie VanSickle: No - decompose!
00:54:27 Fran Huntoon: It's the noun adjective theme - numerators are adjectives and denominators are nouns.
00:54:29 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.
00:54:30 Akia Goudy: Asking if kids need to know these things is like asking do you need doors on cars driving down the highway. Not necessarily, but it's risky if you don't!
00:54:37 Thy Dinh: You also don't always have to simplify fractions
00:54:43 John Sasko: Thanks Christian - you beat me to it. Algebra does not have mixed numbers.
00:54:51 Catherine Abbott: They teach that different in our districts. Add wholes, add fractions, and regroup as necessary?
00:54:52 Judy Whisler: In Pre-algebra and algebra, we leave improper fractions as is, especially for checking work.
00:54:56 Ann Marie VanSickle: because the division symbol is a fraction :)
00:55:06 Emily Graff: It's division
00:55:20 Sandra MacDonald: half the time we don't recognize fraction.....
00:55:22 Catherine Abbott: Cooking, measurements, rullers
00:55:26 Emily Graff: A fraction you are cutting something into smaller parts/pieces
00:55:34 Kristen Perrine: All of it
00:55:36 Mary Butkus: All of this
00:55:37 Dayna Branson: all of it
00:55:38 Sandra MacDonald: they need to know
00:55:38 Emily Graff: A bag of tricks
00:55:39 jill brown: most +
00:55:39 Catherine Lane: All of it
00:55:40 Judy Whisler: Teachers need it!
00:55:40 HILARY OMOKAFFE: All...
00:55:40 Michele Conyers: All!
00:55:41 Meghann Piwko: I think it's critical
00:55:41 Marianne Mammon: Teachers need to know most of this
00:55:42 Brenda McNeese: Still know all
00:55:43 Valerie Davis-Fells: All of it
00:55:43 John Sasko: They need to know it ALL.
00:55:43 Karen Hoyt: Teachers need to have a fair understanding
00:55:44 Kathy Smith: all of it!!!
00:55:44 Moreno Tracy: They need to all of this!
00:55:44 Tammy Hedgepeth: All
00:55:45 Gricelda Monroy: We need to know this

00:55:45 Delores Rushing: Know most of it
 00:55:46 Loni Picariello: most
 00:55:46 Ream Sallaj: all of it
 00:55:46 Ralph Connelly: most of it
 00:55:47 Jaquetta Watson: Teachers need to know
 00:55:47 Carol Tilley: all of it
 00:55:47 Tina Hall: The more we know the more equipped we are to help students.
 00:55:47 Tracey Miller: number sense!
 00:55:48 Mary Landis: all
 00:55:48 Melanie Nan: they should know the concept - that fractions are division and relationship
 00:55:48 Dave Hankin: To be truly effective we need to know all of it.
 00:55:48 Sandra MacDonald: ALL
 00:55:50 Karen Vance: Teachers need to play with the visuals to understand the skill/concept
 00:55:50 Jennie James: All of this!
 00:55:50 Diana Reynolds: Most
 00:55:50 Akia Goudy: YES! w/o this knowledge that's how misconceptions occur
 00:55:51 Erica Farnen: All of it to be best prepared for your students!
 00:55:52 Lauren O'Neill: They need to resist going straight to showing algorithm
 00:55:52 Michael Gougis: Most of this.
 00:55:52 Kelly Kuster: teachers need to know all this, they need to start with unit fractions and then build from there
 00:55:52 Laura Tomas: Teachers should know ALL of this so that they have tools in their toolbox
 00:55:53 melissa magnotta: The benchmark is really important
 00:55:53 Donna Biddulph: I think teachers need to be able to play with fraction concepts so that they understand
 00:55:53 Sharon Black-MacKinnon: The greater my understanding the better I will be able to help my students
 00:55:53 Shannon Bessette: All of it so students understand
 00:55:54 Sandra Zirkes: They need to know how to reason about fractions.
 00:55:54 Emily Graff: Friends
 00:55:54 Crystal Dutil: most
 00:55:54 Phyllis Poston: all of it and let students discover it
 00:55:55 Jenny Kerven: they should be exposed to it, but not necessarily know it.
 00:55:55 Robin Behrman: They need to have a repertoire of all of it
 00:55:55 Cheryl Ann Doyle E Barran: all of it to make connections
 00:55:55 Chimire Owsley: some. all of this is overwhelming
 00:55:56 Alma McFarland: All of it
 00:55:56 deanna brajcich: the relationship part
 00:55:56 melissa magnotta: No
 00:55:56 Sandra MacDonald: no
 00:55:57 Karen Hoyt: No
 00:55:57 Jada Pearson: I think teachers need to have a deeper understanding of fractions across the board

00:55:57 Denise Huddlestun: all of it - particularly reasoning about fractions for benchmarks

00:55:57 Robin Behrman: No

00:55:58 Loni Picariello: no

00:55:58 Wanda Parker: Need to know all of it

00:55:58 John Sasko: NO1

00:55:58 Meghann Piwko: It's important for teachers to understand the why and not just teach a short cut method.

00:55:58 Catherine Lane: More and more do

00:55:58 Jada Pearson: no

00:55:59 Dave Hankin: No

00:55:59 Sandra Zirkes: No

00:55:59 Dayna Branson: no

00:55:59 Ralph Connelly: not at all

00:55:59 Melanie Nan: they dont

00:55:59 Diana Reynolds: No

00:55:59 Brenda McNeese: Noooooooooo

00:55:59 Marcie Schuler: All of it to differentiate instruction

00:55:59 Debbie Calhoun: most of it...kids see everything differently

00:56:00 Stephenia Courtney: no

00:56:00 Denise Huddlestun: no

00:56:00 Kathy Smith: no

00:56:00 Elizabeth Wallace: I think teachers need to know this from experience using these fractions. Otherwise teachers will rely on algorithms.

00:56:00 Kelly Pezoulas: no

00:56:00 Zita Amor Mankos: most of it

00:56:00 Tammy Hedgepeth: no

00:56:00 Christina Williams: NO

00:56:00 Sara Brannan: no

00:56:01 Moreno Tracy: NO NO NO

00:56:01 M Castanares: no

00:56:01 Cheryl Ann Doyle E Barran: I do

00:56:01 Michelle Taylor: most teachers do not

00:56:01 Judy Whisler: Most teachers DO NOT

00:56:01 Karen Yancey: NO

00:56:01 Padgett Shoemake: NO

00:56:01 Valerie Davis-Fells: No

00:56:01 Gricelda Monroy: NO they do not

00:56:02 Sharon Black-MacKinnon: yes

00:56:02 Honey Sacro Swem, Ed D: No

00:56:02 Etienne Saunders: No not really

00:56:02 Jaquetta Watson: Not coming in

00:56:03 yvette davis: Most of the information

00:56:03 Sandra MacDonald: sadly no

00:56:03 Bertha Reyes-Pond: all of it for sure

00:56:03 Donna Biddulph: No most teachers do not.

00:56:03 Christian Hoeffel: Unit by unit PD is essential so teachers know all important concepts before they teach

00:56:03 Debbie Wells: need to have a deep understanding

00:56:03 Shannon Bessette: In my district yes

00:56:03 Rudy Salas: no

00:56:04 Gary Libby: I think they need to understand the relationships between the operations and how it applies to fractions.

00:56:04 Tracey Miller: Yes

00:56:04 Alma McFarland: No

00:56:05 Ashley Edwards: no we don't know it

00:56:05 Marcia Balkin: They need to know all of it or be willing to be flexible and open when a kid comes up with something they are unsure of.

00:56:05 Fran Huntoon: They need all of it. Fractions are a gateway to algebra

00:56:05 Andrea Robinson: no

00:56:06 Rachelle Broggin: noooooo

00:56:06 Ava Sawin: all of it because the more strategies the better it is

00:56:06 melissa magnotta: They are more scared than the kids!

00:56:07 Akkya Majors: No

00:56:07 Rebeca Rodriguez: students will experiment and teacher will guide

00:56:07 Meghann Piwko: No I don't think people understand why we are doing something

00:56:08 Zahra O'Reilly-Bates: no

00:56:08 Crystal Dutil: most of it

00:56:08 Mary Butkus: improving

00:56:08 deanna brajcich: no - just how they were taught

00:56:09 Ann Marie VanSickle: We teach with Eureka and it teaches the teachers how to do these

00:56:09 Bertha Reyes-Pond: no

00:56:09 Wanda Parker: No

00:56:10 courtney dickerson: most of it

00:56:10 Catherine Abbott: Need to know most of this to answer students observations.

00:56:11 Phyllis Tam: all of us to build proportional thinking

00:56:11 Thy Dinh: Need to know if a fraction closer to 0, 1/2 or whole

00:56:11 Melonie Smith: Most teachers do NOT know most of this.

00:56:12 Donna Ware: Benchmarks are super important. Most teachers don't realize this.

00:56:13 Lisa Aldous: no, but it would really help if they did!

00:56:13 yvette davis: Need to share the other ways

00:56:14 Karen Hoyt: Lots of teachers have math anxiety

00:56:14 Debbie Grady: Teachers are weak with number sense.

00:56:15 Lauren O'Neill: Many teachers at my school know of it, but not so comfortable spending time in front of students

00:56:15 HILARY OMOKAFFE: Only the problem solvers.

00:56:16 Akia Goudy: Unfortunately no because our culture is generally apathetic towards math

00:56:17 John Riley: KNow some of it and let the students teach you the rest

00:56:19 Jennie James: No teachers do not know this stuff

00:56:19 Emily Graff: A small taste of all

00:56:21 Joan Albers: My resource does show some of these.
00:56:21 Stephenia Courtney: no
00:56:23 Mary Landis: they need to understand
00:56:25 Melanie Nan: i think some teachers get worried about their math abilities
00:56:31 Donna Biddulph: Teaching fractions virtually is going to be a bear!
00:56:31 Rhonda Coleman: They need to have a good sense of numbers so that they can make sense of the answers the students give.
00:56:36 Kristen Perrine: Many stick to the "traditional" but the students really benefit from understanding the why of the math.
00:56:36 Divya Mishra: Most teachers just stick to the teachers' manuals, and it is sad.
00:56:37 Honey Sacro Swem, Ed D: Need to know relationship between numerator and denominator
00:56:37 Kelly Coble: Teachers need to have knowledge about fractions, more so if it is part of the standards they are required to teach.
00:56:37 Catherine Abbott: Many adults are TERRIFIED of fractions, including non-math teachers
00:56:46 Jennifer Hahn: honestly - people don't know how the words/procedures they use create misconceptions that upper grades have to fix
00:56:47 Elizabeth Wallace: Many teachers just skip math if they can because they are afraid of it.
00:56:53 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.
00:56:56 Thy Dinh: Many teachers don't want to teach 4th grade or up because they don't understand fractions
00:56:58 andrea: you need your medical professions to get this down for sure
00:56:59 Kelly Kuster: more and more teachers are improving on knowing about fractions from more PD and webinars like this
00:56:59 Cindy Bryant: So very true @Catherine!
00:57:02 Cherish Alberts: I think comparison to benchmarks helps with the big picture and reasoning.
00:57:02 Charleta White-Fletcher: As long as teachers are capable of testing the process everyone learns more as they go.
00:57:07 Emily Graff: Of not teaching it right/how
00:57:12 Judy Whisler: I think we're here because we have Marian's mindset. Strategies for getting the message across to other faculty members are needed.
00:57:13 John Sasko: FRACTIONS, like algebra, is a gateway topic, so teachers really need to know them!
00:57:17 Sandra MacDonald: sometimes we can tell students we DON'T know the answer
00:57:19 Ann Marie VanSickle: Eureka math teaches teachers how to do all of these
00:57:20 Jennie James: Counties and schools need promote more collaboration between teachers
00:57:24 Karen Hoyt: I think sometimes teachers may not know how to look for the information they need
00:57:25 Mary Landis: so true Catherine....many folks are nervous about fractions
00:57:29 Claudette S: Most teachers desire to give their best but lack the

knowledge and flexibility.

00:57:34 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:57:35 Akia Goudy: Admittedly, the way that many of us were taught math was incomplete because our teachers didn't know much of this content, and hence we repeat the pattern in our teaching

00:57:36 Delores Rushing: We experience using fractions in everyday life

00:57:37 Moreno Tracy: Teachers need to NOT feel embarrassed that they bare learners too!

00:57:40 Stephenia Courtney: vocabulary

00:57:41 Catherine Abbott: Also....in researching a topic, teachers may find OTHER resources than their textbook to help them see the topic more broadly.

00:57:46 Gricelda Monroy: Yes! @Jennie

00:57:50 Charleta White-Fletcher: Eureka Math is excellent for the various processes

00:57:51 Muhammad Johnson: rate and ratio are also fractions

00:57:58 Sandra MacDonald: context is really important - connect to real like

00:58:04 Fran Huntoon: Multiplicative comparison in grade 4 is one place that it is present

00:58:09 Elizabeth Wallace: By really knowing this math, teachers help students break through math which is a gate keeper for many students in title 1 schools.

00:58:14 Catherine Abbott: ALL fractions are ratios. NOT ALL ratios are fractions.

00:58:39 Akia Goudy: Yes @Elizabeth

00:58:45 Ann Marie VanSickle: When is a ratio not a fraction?

00:58:46 Sandra MacDonald: both

00:59:09 Fran Huntoon: 3:4 is a ratio but not a fraction

00:59:10 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:59:14 Phyllis Tam: part to part and part to whole ratio confuse students

00:59:17 Michele Conyers: What is the context?

00:59:22 Ann Marie VanSickle: Oh -- read that too deeply :)

00:59:24 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.

00:59:27 Catherine Abbott: For each 5 there are 4.

00:59:36 Judy Gerwe: Judy Gerwe. Helpful if teachers have knowledge of all but I don't think that all of the strategies need to be presented to all students. This is my 48th year of teaching elementary math, so I've had the chancer to learn many strategies sand one to present to all to start usually from the textbook, then evaluate what might be better for individuals

00:59:44 Sandra MacDonald: yes

00:59:47 Emily Graff: groupingd

00:59:50 Jennifer Hahn: yes - we spend lots of time in 6th talking about what are the parts and what is the whole

01:00:03 Sandra MacDonald: yes

01:00:13 Emily Graff: Across

01:00:14 Sandra MacDonald: and 4:6
01:00:15 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.
01:00:18 Emily Graff: Matches up
01:00:23 Stephenia Courtney: 4 to 6
01:00:25 Donna Patron: Visuals are so important in math!
01:00:31 Emily Graff: Top bottom rows
01:00:38 Melissa Luzano: I see green lol
01:00:43 Catherine Abbott: I LOVE Thinking Blocks for Ratio Problems
01:00:44 andrea: a special educator freaked out when I said $3 \frac{1}{4} - 2 \frac{3}{4}$ is the same as $2 \frac{5}{4} - 2 \frac{3}{4}$ do the problem is really what does $\frac{5}{4} - \frac{3}{4}$ leave you
01:01:12 Jennifer Hahn: gah horizontal tables!! the more vertical they see the easier it is to transition to graphing!
01:01:21 Michele Conyers: Equal ratios
01:01:22 Catherine Abbott: How can you have a 0.5 people?
01:01:28 Michael Gougis: Students knowing their math facts is critical!
01:01:30 Judy Gerwe: Judy Gerwe. Visuals and manipulative are critical
01:01:35 Emily Graff: $\frac{1}{2}$ people
01:01:39 Sandra MacDonald: I multiplied 10.5×3
01:01:45 Phyllis Tam: Is it additive or multiplicative?
01:02:03 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.
01:02:09 Catherine Abbott: Most teachers are better with multiples in Ratio Tables.
01:02:12 Emily Graff: Unit rate how much for 1?
01:02:19 Dave Hankin: yes
01:02:21 Sandra MacDonald: double
01:02:23 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.
01:02:24 Sharon Black-MacKinnon: yes
01:02:24 Ann Marie VanSickle: yes
01:02:32 Emily Graff: 1 unit is always 1 as unit means 1
01:02:35 Dave Hankin: I agree...
01:02:35 Sandra MacDonald: absolutely
01:02:42 Stephenia Courtney: per 1
01:02:43 melissa magnotta: I think kids naturally go to that
01:02:49 Sandra MacDonald: ask how much 7 would cost
01:02:53 Karen Hoyt: Yes, not only teach rates but give examples of applying various types of thinking.
01:02:56 Gricelda Monroy: Yes, when you want to know if there is a good deal at the store
01:03:02 Cheryl Ann Doyle E Barran: we have to set up these situations
01:03:06 Lorie Huff: Remember to change your chat delivery from all panelists to all panelist and attendees so all participants can see your comments.
01:03:11 Catherine Abbott: The questions we ask can help students to notice particular things.
01:03:11 Jennifer Hahn: and modeling discussing why unit rate ISN'T as efficient in this situation
01:03:12 Debbie Wells: real life solving here for doubling the boxes
01:03:13 India Puch: Thank you for bringing this up!! I have to ask

myself the same question

01:03:15 Stephenia Courtney: once you find out per 1 then multiply
01:03:16 Emily Graff: Gym membership problems...
01:03:17 Lorie Huff: Remember to change your chat delivery from all
panelists to all panelist and attendees so all participants can see your comments.
01:03:26 andrea: it is important for kids to take a few seconds before
immediately acting
01:03:31 Elizabeth Wallace: Teachers that teach math need to know more
math than just an algorithm. Otherwise we bore the kids to death. Math needs context
and students need to make connections to the math they are learning.
01:03:40 Mark Roddy: Pedagogical content knowledge...
01:03:44 melissa magnotta: Set it up that way and then ask if there is
an easier way to solve.
01:03:49 Emily Graff: Yes take time to think what the heck is being asked
of me to do?
01:04:16 Sandra MacDonald: love the double numberline!
01:04:16 melissa magnotta: Love the double number line.
01:04:27 Thy Dinh: Love double number lines
01:04:39 melissa magnotta: Yes it helps so many kids
01:04:40 Ann Marie VanSickle: Double number lines are great transitions to
percents as well
01:04:42 Emily Graff: How many groups of 6 to 10 is in 96?
01:04:47 deanna brajcich: clotheline is very useful for so many
concepts
01:04:53 Catherine Abbott: Missing the "Adults" number line
01:05:32 Emily Graff: Each column is 10 percent
01:05:43 Thy Dinh: 10 X 10 grid is 100 and percent is per every 100
01:05:45 Jennifer Hahn: never thought of it that way - cool!
01:05:54 Ann Marie VanSickle: Take 10% and then take 1/2 of that number
01:05:56 Catherine Abbott: 10% plus 1/2 or 10%
01:05:58 Melissa Luzano: 10% and then half
01:05:59 Sandra MacDonald: 10 percent and half of 10 percent
01:06:00 Emily Graff: B is 60
01:06:01 Michele Conyers: Figure out 10% than add half
01:06:25 Bertha Reyes-Pond: ten plus half
01:06:45 Regina Ging: greg tang - number bonds
01:06:53 Stephenia Courtney: 10 and then half of 10 added
01:07:13 Sandra MacDonald: I would say 333
01:07:16 Ann Marie VanSickle: 333
01:07:17 Kristen Perrine: 333
01:07:22 Michele Conyers: 333
01:07:26 Catherine Abbott: Tis is where double number lines will help
01:07:29 Muhammad Johnson: find the 1/2 or 50 %
01:07:52 Emily Graff: Yes!
01:07:56 Sandra MacDonald: yes
01:08:09 deanna brajcich: proportions
01:08:22 Sandra MacDonald: so helpful to have a context
01:08:23 Fran Huntoon: Percent is a ratio normed to 100
01:08:29 Catherine Abbott: Equivale Ratios are Proportions by another
name.

01:08:30 Emily Graff: no

01:08:35 Sandra MacDonald: not always

01:08:44 Dave Hankin: It depends

01:08:58 Catherine Abbott: Yes. ALL fractions are rations. NOT ALL ratios are fractions.

01:09:08 Emily Graff: Tests

01:09:26 Leigh Sokoloff: number sense

01:09:32 Emily Graff: Just too much

01:09:36 Donna Biddulph: kids could get really confused....

01:09:43 Sandra MacDonald: we need regular PD

01:09:44 Jennifer Owen: I teach 6th grade, this really good.

01:10:06 Sandra MacDonald: ongoing professional learning

01:10:07 Emily Graff: Almost have to go quickly a taste of something big to conserve time

01:10:13 Denise Huddlestun: Many were only taught procedures and not encouraged to look at relationships between numbers

01:10:22 Dave Hankin: It's important for students to know how to recognize irrelevant information. We need to show them how.

01:10:24 Catherine Abbott: Can District Math Departments provide exemplar lessons with correlated ideas as part of the discussion?

01:10:47 Jennifer Hahn: these are all concepts that elementary teachers can help their students see in their early years

01:11:22 Jennifer Hahn: seeing the basic patterns is possible at younger ages

01:11:41 Emily Graff: - less than 1 whole

01:11:47 Diana Reynolds: Important to lay the foundation in elementary for those higher maths.

01:11:49 Sandra MacDonald: oh yes

01:11:52 Dave Hankin: I like the "why"

01:11:55 Ann Marie VanSickle: I love teacher negative exponents! I teach with multiplication and division

01:11:56 Catherine Abbott: Break even point are my favorite systems of linear equations.

01:12:04 Kristen Perrine: $1/64$ is the inverse of $64/1$

01:12:22 Catherine Abbott: Ask the students to look it up (ever if you know the answer)?

01:12:31 HILARY OMOKAFFE: Because it is an axiom in math.

01:12:35 Emily Graff: $2001-2000 = .01$ s root

01:12:39 Sandra MacDonald: makes sense

01:13:18 Ann Marie VanSickle: The $kf(x)$ and $f(kx)$ standards and graphing are confusing to some teachers

01:13:34 Jennifer Hahn: we teach a lot of concepts that build on each other - different words/visuals for very related concepts

01:13:38 Emily Graff: Balance with taking the opposite operation

01:13:40 Dave Hankin: It's like a scale...it needs to balance

01:13:42 Cheryl Franks: kids often don't understand the equal sign.

01:13:53 Brenda McNeese: yes

01:14:09 Ann Marie VanSickle: Yes - need to teach them the meaning of $\theta=0$

01:14:19 Sandra MacDonald: yes!!!

01:14:23 Ann Marie VanSickle: yes!!

01:14:28 Emily Graff: Love iy
 01:14:31 Sandra MacDonald: I love algebra tiles
 01:14:33 Judy Whisler: LOVE the algebra tile virtual manipulative on NCTM
 01:14:42 Catherine Abbott: Algebra Tiles, Desmos, GeoGebra
 01:14:43 Ashley Edwards: absolutely yes for manipulatives
 01:14:44 Cheryl Ann Doyle E Barran: yes it is $0=0$ means it has many solutions
 01:15:18 Emily Graff: Any number can and will equal itself
 01:15:32 Melissa Luzano: $x=5$ and $y=-11$
 01:16:12 Emily Graff: Which better buy
 01:16:41 Angela Wilson: Yes, better buy or equations set-up using a balance scale too.
 01:16:50 Jennie James: Agreed!
 01:16:55 Catherine Abbott: Food Math...always delicious
 01:17:00 Sandra MacDonald: This was amazing - just what I expected of Marian Small! I think it's a professional obligation to check out her books!
 01:17:03 Regina Ging: geometry tips?
 01:17:04 Bertha Reyes-Pond: agreed
 01:17:07 Melissa Luzano: nice blouse
 01:17:11 Sandra MacDonald: no
 01:17:13 Emily Graff: Huge realization as a teacher, kids are seeing that we always do not have the answers to there questions
 01:17:15 Lawanda Mahomes: Thank you! Great presentation
 01:17:17 Mark Roddy: Thanks one and all.
 01:17:19 deanna brajcich: that's the word "impose"
 01:17:21 Cindy Bryant: Wonderful presentation!
 01:17:27 Trena Wilkerson: Love Marian's books! Great resources!
 01:17:29 Jorge Veloso: very good webinar. very informative.
 01:17:30 Thy Dinh: Teachers don't need to know it all, but they need to be willing to learn more
 01:17:30 Ann Marie VanSickle: Imposition is the key word
 01:17:35 Sandra MacDonald: oh dear
 01:17:37 Gricelda Monroy: Do more open-approach math
 01:17:38 Emily Graff: This was eye opening and fantastic!
 01:17:41 Delores Rushing: I agree Marian. Thank you so much!
 01:17:49 Sandra MacDonald: YES!!!

 01:17:50 Mary France Imperial: thank you so much

 01:17:57 Stephenia Courtney: Exploration
 01:17:57 Vasiliki Balaskas: Thank you so much!
 01:17:59 Emily Graff: Yes let them find other ways of solving
 01:18:05 Trena Wilkerson: Love it—respond not impose!
 01:18:07 deanna brajcich: teachers are segue makers
 01:18:09 Jennie James: Well said!
 01:18:10 Melanie Nan: Thank you so much! I completely agree - we need to know that there are many ways to solve a problem. The children need to know number sense and we need to value the strategies the children have.
 01:18:10 Etienne Saunders: I agree
 01:18:10 Elmer Mayol: Thank you very much!

01:18:11 Lauren O'Neill: I agree totally!
01:18:13 Erica Farmen: Totally agree!
01:18:16 Alicia Broadwater: Thank you!
01:18:16 Janice Novakowski: Yes, be open to students' flexible ways of thinking!
01:18:17 Valerie Jones: Show the book again please. Is it offered on Amazon?
01:18:24 MYLA DETECIO: thank you!
01:18:25 Gricelda Monroy: "You can not teach what you do not know"
01:18:25 Sandra MacDonald: you have to know them to recognize the strategies when students bring them up
01:18:29 Judy Whisler: Safety and comfort for our students are essential! We need to be comfortable with that.
01:18:33 Thy Dinh: Yes, teachers need to know how and why kids are using these methods. We can help by having kids compare how their methods are the same and different
01:18:34 Kristin Haynie: Thank you!!!
01:18:37 Stephenia Courtney: Thank you so much!!
01:18:39 Nell Thurlow: thank you for the very enlightening presentation!
01:18:40 Marcie Schuler: Would you recommend using Number Strings as whole class activity or small group?
01:18:42 Cicely Washington: Thank you!
01:18:43 WARA SABON DOMINIKUS: thank you for a great presentation
01:18:43 Tammy Hedgepeth: name of book
01:18:45 Betty Stallings: by all means let them use what works for them
01:18:45 Regina Ging: disagree
01:19:00 Emily Graff: We cannot answer questions with what we don't know
01:19:00 Tammy Hedgepeth: link to book
01:19:00 Deborah Bishop: Deborah Bishop-thank you!
01:19:02 Kelly Coble: Do you think you should allow students to select the method of solving?
01:19:08 deanna brajcich: perfect title
01:19:10 Carol Matsumoto: Thanks and great to see you again Marian.
01:19:21 Angela Wilson: Sometimes we have to slow down and allow different methods shown to all students even if we think it is too simple of a solution.
01:19:23 Melanie Nan: I wonder if the big takeaway here is math is about patterns and relationships not just numbers.
01:19:25 Jo Ann Luhtala: from Jo Ann Luhtala, Thank you so much! I have done some of this but you made me expand a lot more!
01:19:25 Denise Huddleston: Teachers need to be able to recognize correct multiple ways to affirm and student thinking and know questions to ask to help students modify their thinking.
01:19:26 Phyllis Tam: link to her book
https://www.stenhouse.com/understanding_math
01:19:29 Cheryl Franks: Math & Reading!
01:19:32 Emily Graff: Freedom of choice and more willing if they feel comfortable
01:19:33 Bertha Reyes-Pond: great presentation, thank you
01:19:33 Jennifer Hahn: teachers need to be able to describe/present

terminology in different ways for our students who are ELL

01:19:34 Dave Hankin: tly!1
01:19:39 Dave Hankin: Exactly!!
01:19:41 India Puch: Yes!!
01:19:53 Ann Marie VanSickle: We have grades 3-8 departmentalized and it works great to have specialists for the students! math/science and ela/ss
01:19:56 Alisha Hart: Yessss
01:20:25 Zulema Abreu Hernandez: thank you
01:20:26 Thy Dinh: if teachers collaborate with other teachers, we are modelling how and why collaboration is important, especially in Math
01:20:33 andrea: just like I am uncomfortable teaching Art
01:20:36 Emily Graff: This was a great session thank you for sharing your wisdom with us
01:20:41 Layal Alsalim: thank you very much
01:20:42 Brenda McNeese: A Compendium Of Mathematical Methods: A handbook for school teachers [Print Replica] Kindle Edition Easy read and multiple methods to teach math
01:20:45 Tammy Hedgepeth:
https://www.amazon.com/Understanding-Math-Teach-How-K-8/dp/1625313357/ref=sr_1_2?crid=SL65GN7QYS4W&dchild=1&keywords=understanding+the+math+we+teach+and+how+to+teach+it+k-8&qid=1596499146&srefix=understanding+the+math+we+tea%2Caps%2C166&sr=8-2
01:20:47 Daniel Irving: Thank you for this incredible presentation!
01:20:49 Elizabeth Wallace: Great Session.
01:20:55 Tamia Welch: What import do you put on memorization of times tables?
01:20:55 Chonda Long: A recording will be available tomorrow at www.nctm.org/100. The PDF of the presentation and the chat will also be posted.
01:21:00 Joan Albers: Thank you!
01:21:06 Cherish Alberts: Thank you so much!
01:21:06 Ann Marie VanSickle: Math nights!
01:21:08 LARITA MITCHELL: Great question!
01:21:19 Gricelda Monroy: Thank you - great session!
01:21:20 Lauren O'Neill: Thank you so much. This was a really important session, and you presented all of this information in a very clear way.
01:21:22 Dawn Ciancaglini: Thank you very much!
01:21:27 India Puch: Thank You!
01:21:27 Emily Graff: To be able to do higher math not hung on on x facts
01:21:28 John Sasko: Thank you Marian Small! I use all of your books in my work coaching teachers!
01:21:33 Nancy Bicknell: mathup....it's awesome!
01:21:33 Ann Marie VanSickle: communication is key!
01:21:34 Payal Arora: Thank you!
01:21:39 jill brown: thanks you :)
01:21:39 Kelly Coble: Thank you so much.
01:21:42 Erica Farmen: Could you send us that parent communication page?
01:21:46 Jennifer Hahn: ooh - do we have access to those materials?
01:21:52 Thy Dinh: Why do some parents who struggled with math want us to teach it the same way the learned when it didn't work for them?
01:21:54 SHANKAR SARKAR: Thank you
01:21:57 Sharon Black-MacKinnon: Thank you so much! Fantastic webinar!

01:21:59 Judy Whisler: Strategies, never tricks!
01:22:01 Selby Gaylock: Thank you all.
01:22:01 Leslie Texas: Great presentation! Thanks for sharing
01:22:02 Judy Gerwe: From Judy Gerwe. Since I have a Learning Disability in ELA. I've been able to trade off ELA for Math & Scienc for most of my 48 years of teaching.
01:22:06 Audrey Hodgson-Ward: I am eager to see this new Canadian resource that includes info to send home to parents. What is the resource, please?
01:22:14 Imelda Valencia: Thank you. Great presentation
01:22:16 Olga Kosheleva: Thank you!
01:22:17 courtney dickerson: Thank you ! A session which gives me reason to think more about math and how to teach it. Thank you!
01:22:18 Valerie Jones: YES!!!!
01:22:23 Delores Rushing: Marian, such a fantastic presentation and a wealth of knowledge for teaching math in the elementary grades. Thank you so very much!
01:22:24 Moreno Tracy: Thank you SO SO MUCH! This was a very purposeful session! :)
01:22:28 Emily Graff: I would say make it more relevant and worthwhile to them
01:22:40 Don Duong: Thank you for your presentation.
01:22:44 Nora Marasigan: Thank you so much!
01:22:49 Sandra Zirkes: Excellent session! Thank you! :)
01:22:52 Deepti Sehgal: thank you so much
01:22:55 Thy Dinh: Thank you, Marian
01:22:56 Miller Amy: Thank you!
01:23:02 Ashley Zarb: Thanks Marian! Very informative as always :)
01:23:03 Sherry Minor: Thank you so much!
01:23:05 Dave Hankin: You need to know why the "tricks" work and explain the reasons to students. The tricks in themselves don't lead to real mastery.
01:23:05 Akkya Majors: Thank you!
01:23:07 Meghann Piwko: Do you have examples/books on your open ended questions that align to our standards?
01:23:09 Robin Behrman: Great presentation!
01:23:13 Cheryl Franks: Number Talks
01:23:14 Delores Rushing: Bringing open questions to the math classroom is great!
01:23:15 Erica Farmen: Brilliant strategy!!
01:23:17 deanna brajcich: Thanks Marian!
01:23:18 doreena fava: Thank you!
01:23:19 Donna Biddulph: This got me excited about teaching Math this year! Thank you
01:23:20 Gloria BrownBrooks: Thank You
01:23:20 Annie Shelby: Thank you!
01:23:20 Gina Lyle: Thanks for great info and ideas!
01:23:21 Angelita Beltran: Thank you
01:23:21 yvette davis: Great Presentation
01:23:22 Sara Brannan: Thank you!
01:23:22 Rachelle Broggin: Thank you!!
01:23:22 Claudette S: Marian, I have admired your work for the past 6

years. Thank you for informing, inspiring and challenging me. I own several of your books. Thank you. Lorie and Chonda, thank you for your work too.

01:23:23 Daniel DeStephano: Thanks!!!
01:23:26 Erica Farmen: Thank you!
01:23:26 Marianne Mammon: Thank you! Great presentation!
01:23:27 susie Krier: Thank you!
01:23:27 Alichia Hart: Thank you!!!
01:23:28 Etienne Saunders: Thank you so much
01:23:29 Laura Ramp: Thank you!!
01:23:30 LARITA MITCHELL: Love your answers to parents
01:23:31 Dave Hankin: Thank you again from Globe, Arizona!
01:23:32 Phyllis Tam: Thank you so much.
01:23:32 Marcie Schuler: Thank you, Marian!
01:23:32 Angela Wilson: Thanks so much for sharing this presentation with us.
01:23:32 Dawn Furstenberg: Thank you
01:23:32 Cheryl Ann Doyle E Barran: thanks marian
01:23:33 Valerie Davis-Fells: Thank you!
01:23:33 Michelle Taylor: Thank you, great ideas!
01:23:33 Carly Jardinier: Thank you!
01:23:34 Melonie Smith: Thank you
01:23:34 Tricia Kiefer: Thank you!
01:23:34 Zahra O'Reilly-Bates: Thank You!
01:23:35 Delphine Stallworth: Thank you
01:23:35 Elisabeth Thibadeau: Thank you!
01:23:37 Rosette Andrews: Great session! Thank you.
01:23:37 Brenda McNeese: Thanks.
01:23:38 Annette Krimmer: I learned a lot of math today!
01:23:39 Sandra MacDonald: that was great! Thanks so much!
01:23:40 Andrea Robinson: Thank you!!!
01:23:40 Susan Nordyke: Thank you so much!
01:23:41 Lisa Aldous: Thank you so much!
01:23:41 Dee Crowell: Excellent presentation! The best one yet!
01:23:41 Emerlina Binuya: Thank you very much!
01:23:41 Janice Novakowski: Thank you Marian!
01:23:42 Jean Mistele: Thank you very much!
01:23:42 Marybeth Spencer: Thank you!!
01:23:43 Nikole Manou: thank you! amazing
01:23:43 Ramona Hall: This was an awesome presentation! Thank you!!
01:23:44 Nancy Cooper: Thank you!!
01:23:44 Rebecca Baris: Thank you!
01:23:45 Bertha Reyes-Pond: thank you!
01:23:45 Betty Stallings: Thank you
01:23:46 Nadine Richards-Ramsey: Thank you!
01:23:47 Terri McCarthy: Thank you
01:23:49 Elaine Boyer: thank you so much from Denver!
01:23:49 Anupama Anand: Thank you
01:23:51 HILARY OMOKAFFE: Thank you.
01:23:55 Marcia Balkin: Thank you for impressing upon us the importance of knowing so much!

01:23:57 Jada Pearson: Thank you Marian!
01:23:57 Maria Woehl: Thank you Marian! There's so much to consider here.
01:23:57 Phyllis Poston: Thank you!
01:23:58 Valerie Jones: Thank you very much!
01:23:59 Leigh Sokoloff: Thank you
01:24:00 Sharon Ledford: Fascinating -- thank you!
01:24:02 Ava Sawin: thank you
01:24:03 Judy Whisler: Amazing webinar! Thank you!
01:24:03 Angela Wilson: Thanks from Chandler AZ
01:24:06 Trena Wilkerson: Thanks Marian!
01:24:06 Kelly Pezoulas: Thank you from Ottawa, Canada!! Dr. Small's
hometown!
01:24:07 Mary Macias: Thank You
01:24:07 Wisnu Siwi Satiti: Thank you so much Marian! Such a great
presentation. So many excellent ideas. Thank you Lorie! Thank you everyone!
01:24:16 Heidi Hewitt: Thank you
01:24:19 Brenda McNeese: Thank you so much for doing this series.
01:24:25 Regina Mistretta: Thank you! Wonderful presentation!
01:24:30 kim bolf: Thank you so much!
01:24:30 Tamikia Greene: Thank you so very much for the session! I am
enlightened :))
01:24:32 Nonye Obiora: Thank You
01:24:37 Wanda Parker: Thank you! Great information!
01:24:37 Marian Small: Good night everyone and thanks for joining
01:25:09 Lisa Lambuth: This was so thought provoking! Thank you!
01:25:11 Judy Gerwe: From Judy Gerwe. Thanks so much, this is great. I
hope to share this with many of my teachers that I work with now as a Math &
Intervention Specialist
01:25:16 Harjeet Kaur Ubbi: Thank you
01:25:16 Tammy Hedgepeth: Great presentation!
01:25:20 sunny thomas: Thank you
01:25:23 Julie Mainwaring: thank you for sharing so many ways to think
about to getting to the answer
01:25:24 Vicki Pace: Thanks... Enjoyed the presentation...
01:25:42 Katelyn Brophy: Wonderful session! Thank you so much for sharing
your knowledge with us. :-)
01:25:48 Zahra O'Reilly-Bates: Relevant and timely presentation. Thank You!
01:25:49 De Zhang: Thank you all!
01:25:50 Ana Cristina Sanz Gomez: Thank you!
01:25:50 Laura Tomas: Thank you!
01:25:52 Muhammad Johnson: Very informative webinar thanks for the
information it has helped greatly
01:25:55 courtney dickerson: I attended using a different name. I am
courtney dickerson
01:25:59 SHANKAR SARKAR: Thank you so much
01:26:02 Judy Whisler: Good night. Thank you!!!!
01:26:10 Sarah Sanchez: Thank you!
01:26:11 Muhammad Johnson: Good Night that was great
01:26:15 Ramona Hall: Hi Courtney Dickerson!!