

00:17:38 mike murphy: Hi all, Pa, USA
00:17:41 Cindy Bryant: Hello from Springfield, MO!
00:17:44 Catherine Bronikowski: Hello from Milwaukee, WI
00:17:45 Lorie Huff: Hello from Fayetteville, AR
00:17:45 Tanya Landry: HI from Baton Rouge!
00:17:45 Jill Ethridge: Hello from Smyrna TN
00:17:46 Veronica Kwok: hello from queens Nyc!!!!
00:17:54 Chrystina Harich: Hello from Salt Lake City UT
00:17:55 Angelita Beltran: Hello from Waukegan, IL
00:17:56 Alanna Prudhom: Hi, from Franksville, WI
00:17:57 Thi Nguyen: Hello from Gladstone MO
00:18:00 ANALINE BAUTISTA: good day
00:18:03 Tessie Menta: Hello from Stockton, California
00:18:03 Macobia Harris: Hi from Duncanville TX
00:18:04 Trena Wilkerson: Hello from Waco, TX!
00:18:11 Arnold John Bulanadi: Hello. Arnold from Jacksonville, Florida
USPH
00:18:14 Ratu Ilma Indra Putri: Hello Ratu Ilma South Sumatera, INDONESIA
00:18:14 Catherine VanNetta: Good evening from hot and humid Baltimore
00:18:17 Kathy Felt: Hi from Sherrard IL!
00:18:17 Philip Mojares: Hello from Somerton, Arizona
00:18:17 Michael Lanstrum: Hello from Cleveland, Ohio
00:18:17 Dexter Carpio: Hi from Philippines ♡
00:18:18 harry holloway: greetings
00:18:18 Ron Napper: Hello from Murfreesboro, TN
00:18:19 Justin Klinger: Romeoville, IL say Hello!!
00:18:19 Abdul Razak Othman: Hi From Malaysia
00:18:20 Scott Ing: hi from los angeles
00:18:24 Viragni Chand: Hello, Viragni from California
00:18:24 Robert Berry: Robert Charlottesville, VA
00:18:25 Mark Fili: Queens, NYC
00:18:26 Barbara LaPenta: Big Hello from Philadelphia, PA
00:18:27 Kendra Edwards: Hi from Brooklyn, NY
00:18:30 Arlene Bachinela: Good evening! from Baltimore, Maryland
00:18:30 Rebecca Houdek: Hi from Rock HILL, SC!
00:18:32 harry holloway: greetings from Winchester va
00:18:34 Ashley Dobravolsky: Hi from Austin, Texas!
00:18:34 Jamie Cook: hello from Mesa, AZ
00:18:36 Joyce Meier: Hello from Illinois!
00:18:36 Nick DiGrispino: Hello from Lansing IL
00:18:37 Christy Werner: Hello from Shillington, PA
00:18:38 Laurie James: Aloha from Oahu
00:18:38 Dr Deborah Smith: Hello from Antioch, TN
00:18:39 Susan Danskin: Hi from Ithaca, NY
00:18:39 Stacy Haines: Stacy from Mystic CT
00:18:40 Noe Eugenio: hi from Philippines!
00:18:41 Nora Marasigan: Hello from Philippines
00:18:42 Carly Jardinier: Hello from MD, USA :)
00:18:43 Shashidhar Belbase: Hello from Al Ain, United Arab Emirates
(UAE)

00:18:43 Diana Lopez-Vazquez: Hello from Wilmington DE
00:18:43 Chance Nalley: Chance Nalley, NYC
00:18:44 Belen Chug: Hi from Maryland.
00:18:44 Christina Tully: hi from Las Vegas, NV!
00:18:45 Mary Keane: Hello from Annapolis MD
00:18:46 Wendy Kraft: Hi from WA
00:18:49 Lisa Hennefarth: Hello from the SF Bay Area!
00:18:50 Susan Shuart: Hi from Farmville, VA
00:18:50 Louis Cicero: hello from wilm. NC
00:18:51 G DeGeorge: G D from New Jersey
00:18:54 Leslie Sorace: Hi from AZ!
00:18:54 Ronald Lubatti: Lebanon, Maine
00:18:58 Carole Bamford: Hi from Montreal, Canada
00:18:59 Krystal White: Hiya from Saint Louis, MO
00:19:01 Teresa Bulanda: Hi from Plainville, CT
00:19:02 Rachell Scott: HELLO, from Maryland
00:19:03 Clem Wings: Clem from Albuquerque, NM
00:19:05 Mary Fisher: Hello from Kansas City, MO. I have enjoyed all of
the webinars I've been to!
00:19:07 Cindy Luper: Hi from Arkansas
00:19:08 Olga Kosheleva: Hello from El Paso, TX
00:19:09 Ann Assad: Hi from Paducah KY
00:19:12 Tonya McIntyre: Hi Everyone from Wadmalaw Island, SC :)
00:19:15 Lesly Brown: Hello from Knoxville, Tennessee Lesly Brown here.
00:19:21 Christine Rudakewycz: Hello from New York City!
00:19:23 Maria Casanova: Hi from Denver, CO
00:19:26 Debra Reed: Hello from Las Vegas
00:19:27 Sheila Kirton-Robbins: Nashville, NC

00:19:30 John Simons: Milwaukee
00:19:34 Niniek Budhiastuti: Hi from Indonesia!
00:19:45 Meg Crenshaw: Durham, NC
00:19:52 Martisha Dunn: Hi everyone from Richmond virginia
00:19:55 Dave Hankin: Hello again from Globe, Arizona!
00:19:56 Lucinda Lawson: Lucinda from Pine Bluff Arkansas!!!!
00:19:56 Beth Kobett: Hello All! Beth from Maryland!
00:20:00 Necole Atkins-Dowd: Hi from Las Vegas,NV
00:20:07 jill brown: Hi From Australia :)
00:20:08 Ronald Austria: hi from North Carolina
00:20:09 Saul Gonzalez: Howdy from Bakersfield, CA. It is about 100F!
00:20:11 Emerson Roman Sanchez: Hola from Mexico City
00:20:12 DawnMarie Gaghan: Hello from Long Island, NY
00:20:14 Claudia O'Keefe: Hello from Buffalo, NY
00:20:18 Russell Maciag: Hello from Oak Park, MI
00:20:18 Rusmayris Guillermo: Hello from The Bronx, NY
00:20:18 Nell Thurlow: Hello from Lafayette LA
00:20:18 Gail Saltveit: Portland, Oregon
00:20:21 Kim Petersen: Hello from Calgary, Canada!
00:20:23 Daniel Irving: Hello from North Providence, RI!
00:20:24 Danielle Grenader: Hi from Wheeling, IL

00:20:27 Karoulin Aljoris: hellooooo
00:20:28 Lesa Turner: Hi from Springfield, TN
00:20:29 Jeff Shih: Hi from Las Vegas!
00:20:29 Alana Wolfer: Hello from Phoenix, AZ!
00:20:32 LeAnna Deveaux-Miller: Good Evening, NEW PROVIDENCE, THE BAHAMAS
00:20:35 Alana Viverito: Hello from Westchester, NY!
00:20:39 Henry Kepner: hi from. here. hank
00:20:41 Stephanie Ruggiero: Hello from Monroe, North Carolina
00:20:47 Donna Misciagna: Hello. I am Donna from Tucson, AZ.
00:20:52 Mary France Imperial: Hello from Manila Philippines!
00:20:56 Eboney Mckinney: Hello from Chandler,AZ
00:20:57 Kuniko Hall: Hi, Kuniko from New York, NY
00:21:00 Denise Griffith: Hello from Wilmington, Delaware!
00:21:03 Haohao Wang: hello from southeast MO state University
00:21:21 Brenda Strassfeld: Brenda from Touro College
00:21:32 dana dulzo: dana-hello from novi mi
00:21:38 Greisy Winicki Landman: Claremont, CA
00:21:46 Patricia Sampaio: Hello from Portugal
00:21:52 Jeanetta Glass: Hello from Memphis, TN!
00:21:53 Rosalyn Bantay: Hello from PH
00:22:12 Katherine Raiguel: hello from Willow Grove, PA
00:22:21 Rebecca Peiffer: Hello from Phoenix, AZ
00:22:29 Eko Yulianto: Hello from Indonesia
00:22:38 Jennifer McMillen: Hi from Fort Worth, TX
00:22:54 Cindy Bryant: Remember to change your chat setting to "All panelists and attendees" so that everyone can see your posts.
00:23:01 Jet Yeung: Hello Everyone-Jet from Henderson, Nevada
00:23:11 Sandhya Raman: Is it possible to turn CC on for this please?
00:23:14 Paige Whitacre: Hello from Tucson Arizona
00:23:20 Caitlin Maguire: Hi from Providence, RI
00:23:22 Lawanda Mahomes: Hello everyone! Chicago, Illinois
00:23:26 DILEK GUVEN: Hello from Staten Island NY
00:23:38 Lam Le: CC was on earlier, now I notice it
00:24:04 Jeevitha D: hello everyone
00:24:27 India Puch: India from SC
00:24:31 Aya Zvaigzne: Nashville represents
00:24:39 Hee-Joon Kim: Hello from Richmond, CA
00:24:46 Robin Schwartz: Hi from Robin NYC
00:24:49 Jeanetta Glass: Hi Ava!
00:25:09 Roberta Ludwigsen-Hill: Hello from Alabama
00:25:26 Rommel Daz: Rommel Daz, from Zambales Philippines
00:25:57 harry holloway: rigorous proof disappeared from geometry years ago.
00:26:19 Nick DiGrispino: and that's a shame, Harry
00:26:26 Ronald Lubatti: Can we get get close cap now? thanks
00:26:28 harry holloway: yes,
00:26:34 Beth Kobett: These quotes are powerful.
00:26:36 Cindy Bryant: You should be able to adjust the slide size by viewing options at the top of the page and selecting zoom ratio.
00:26:55 Cindy Bryant: They are working on close cap now.
00:26:59 Krystal White: YES! Math can be liberation!

00:27:03 Hilary Omokafe: Hilary from Muscat in Oman.
00:27:47 Faith Peddie: Yes, a certificate will be emailed tomorrow
00:27:58 Ana Guerrero: Ana from IL
00:28:04 Clem Wings: thank you for centering equity and facing the
systemic racism in the educational system
00:28:26 Nick DiGrispino: "Mathematics teaches systematic thinking in
problem solving" – Dennis Cymbal
00:28:27 Wendy Kraft: challenging; why
00:28:37 David Barnes: @Wilma - Just getting started. And I loved my time
in Cebu!
00:29:07 Scott Ing: tough
00:29:22 harry holloway: define mathematical proof.
00:29:37 nancy: patient
00:29:44 Anne Marie Hohman: complex
00:29:47 nancy: students feel challenged
00:29:52 Trena Wilkerson: I love teaching geometry! Reasoning and
proof are front and center!
00:29:59 William Sabor: maverick
00:30:01 Rachell Scott: challenging
00:30:02 Martisha Dunn: thought provoking
00:30:02 Dave Hankin: Teaching them the logic and perseverance is
something I'm fine doing, but many don't see the point of going through the whole
process.
00:30:04 harry holloway: define what you mean.
00:30:16 Scott Ing: depends on rigor
00:30:20 Lynda Stahl: I think teaching proof is not just a geometry lesson
00:30:22 Lucinda Lawson: Rewarding
00:30:32 Christine Rudakewycz: scared
00:30:34 Nell Thurlow: Anxious, anxious
00:30:42 Nick DiGrispino: apprehensive,
00:30:59 Shashidhar Belbase: Exciting, Frustrating
00:31:00 Sandhya Raman: Thank you so much
00:31:14 Mohamed Jamaludeen Thirapusa Mohaideen: Hi This is Mohamed from CT
00:31:18 mike murphy: that's our book!
00:31:19 Robin Schwartz: Eureka :) Challenging
00:31:38 harry holloway: Proof is not taught in most geometry books
00:31:45 Chance Nalley: Laurie, if your watching that's your book!
00:31:59 harry holloway: just rote two coulum things
00:32:14 Rommel Daz: True, proof is less important in some books
00:32:44 Shauna Brown: hi from New York
00:32:57 Trena Wilkerson: @katy turned out to be an amazing part of my
teaching journey!
00:33:01 Macobia Harris: Great quotes!
00:33:02 Cindy Bryant: Powerful quotes!
00:33:04 Lucinda Lawson: I find that students can't explain why they bough a
particular outfit or pair of shoes.... My students receive information but don't
understand making decisions.
00:33:13 paloma carrera: relatable quotes
00:33:53 Mr Louis: that's my neighborhood. how nice
00:34:00 Trena Wilkerson: @katy turned out to be an amazing part of my

teaching journey!

00:34:16 Steven Jarowski: That's Horrible!!!

00:34:42 Lucinda Lawson: Yes...

00:35:18 Jennifer Knudsen: we used that book in 1986. maybe not second edition :)

00:35:25 Lucinda Lawson: my students don't believe they have a voice...

00:35:25 Eko Yulianto: Structured thinking

00:35:43 harry holloway: Proof is not natural. But it is also done in other subjects. For example, in English students are often asked to support there point of view. This is similar to proof.

00:35:55 Lucinda Lawson: You tell me what to do and I will try... but

00:36:07 harry holloway: Proof has little obvious connection to the real world.

00:36:18 Aya Zvaigzne: woah

00:36:22 Lucinda Lawson: Students, again, don't realize they have a VOICE..

00:37:04 Greisy Winicki Landman: any international perspective?? this is not only an issue in the US.

00:37:20 Catherine Bronikowski: the definition of proof I use w/students is critical thinking w/evidence to convince the skeptics (teacher)

00:37:26 Steven Jarowski: Proof is required in today's life. Way too many opinions and preferences are used in making decisions. Proof and "Facts" show what it really means to be a fact and not just an assumption even in the most basic fundamental thoughts.

00:37:43 Lucinda Lawson: I know. I was in South Africa before... They had no voice..

00:37:48 Scott Ing: today less ready

00:37:56 Robin Alves: I graduated in 1985. I don't remember learning how to construct a proof.

00:37:59 Karoulin Aljoris: more

00:38:14 Mark Vasicek: I graduated in 1975. Geometry was a course of proof.

00:38:22 Claudia O'Keefe: They're more ready today but less prepared. They have more tools now, but don't realize they do

00:38:35 G DeGeorge: How are we answering the. poll?

00:38:36 Jeanetta Glass: I graduated in 1989 and proofs were my least favorite part of geometry!

00:38:47 Rebecca Peiffer: What's the code for the poll?

00:39:03 Tom Jr. Cochran: G060

00:39:08 Nick DiGrispino: Graduated in '81. Geometry was all about proofs

00:39:16 Jet Yeung: more ready because of calculators and computers

00:39:31 Robin Schwartz: graduated HS 1981 NYC and had a full yr of Geo in 10th almost exclusively proof

00:39:44 Lucinda Lawson: Were these from Title I / disadvantaged schools?

00:39:46 Greisy Winicki Landman: hod do you define "ready"?

00:39:47 Robin Schwartz: how can readiness be determined?

00:39:51 Justin Klinger: Does anyone have Geometry in the 3rd year of HS?

00:39:52 Nick DiGrispino: cell phones

00:39:58 Barbara LaPenta: Technology

00:39:58 Lynda Stahl: Because we don't actually teach proofs now?

00:39:59 harry holloway: How do you measure this?

00:39:59 Katherine Chang: less 1985 kids

00:40:02 Shelley Sopa: Proof is no longer emphasized as much universally.

00:40:05 Lisa Bailey: We don't teach it anymore! It was taken out of the curriculum

00:40:06 Wendy Kraft: only "best" take Geo today

00:40:06 Robin Schwartz: Nick what do you mean?

00:40:06 Saul Gonzalez: I taught Geometry proofs this year to my Freshmen and they and I suffered :(

00:40:06 Robin Alves: Could test stress get in the way?

00:40:07 Meg Crenshaw: We don't expect it like we used to

00:40:08 John Simons: More algebraic thinking earlier

00:40:09 Lynda Stahl: Because in the 80s Geo was all about proofs?

00:40:09 Ronald Lubatti: too much spoon feeding at all levels

00:40:11 Sheila Kirton-Robbins: Computers

00:40:12 Aya Zvaigzne: how do you measure readiness

00:40:13 Carole Bamford: short attention span

00:40:15 Robin Koller: Not all students took geometry

00:40:16 Rusmayris Guillermo: Students what the answer not how to get there.. they are not interested in the process

00:40:16 John Simons: But less discourse

00:40:17 Lisa Hennefarth: They do not cover formal proofs in geo today.

00:40:17 Katherine Chang: less opportunities for masses

00:40:18 Ashley Dobravolsky: Algebra I is often taught in middle school now

00:40:19 Mark Vasicek: The rigor of doing step by step

00:40:19 Jill Ethridge: Today students are taught to a test rather than to reason and argue through problems

00:40:19 Cindy Luper: Did all students have to take geometry in 1985?

00:40:20 Janine Addison: Not emphasized

00:40:21 Alana Wolfer: lacking study skills

00:40:22 Shelley Sopa: We don't teach proof the same way with as much rigor.

00:40:23 Rebecca Peiffer: Less of an emphasis on teaching proofing and rigorous reasoning at all levels?

00:40:24 Cobey Davis: Technology increase

00:40:24 Zorica Lloyd: Proofs require some level of intuition which is often drained from kids at this point.

00:40:24 Donna Misciagna: Overemphasis on testing today.

00:40:25 Amy Baniewicz: Less creative thinking across the board

00:40:26 Katherine Raiguel: Not making the connections

00:40:27 ALICIA PARUGINOG: too many distractions

00:40:31 Nell Thurlow: demographics, technology

00:40:32 Michael Sipes: Proof not on the SAT so it is not taught

00:40:33 Kathy Felt: They don't think as much these days

00:40:33 Belen Chug: Students today question why they are learning proofs when they are not going to use it in everyday life.

00:40:34 Nick DiGrispino: Most of my students got their answers off of Mathslayer et. al.

00:40:35 Shashidhar Belbase: More access to resources now than in the past.

00:40:35 Francis Kisner: What does it mean that they were "more ready to engage"? How is that measured?

00:40:37 Terri Taylor: Student expectations are lower

00:40:37 Rommel Daz: There are so much distraction

00:40:38 Wendy Kraft: S don't think as well today? think critically?

00:40:40 Teresa Bulanda: less focused, distracted, not trying, giving up easily

00:40:42 Sheila Kirton-Robbins: not taught

00:40:47 Nick DiGrispino: I agree Terri

00:40:47 Susan Danskin: How do you measure readiness?

00:40:47 Martisha Dunn: google more strategies are given

00:40:48 nancy: students are unsure their answers are correct, they are less confident

00:40:48 Janine Addison: teaching more topics so have less time to prove theorems

00:40:48 dana dulzo: rote memorization not actual thinking, validating their thinking

00:40:50 Stephanie Ruggiero: do poorly because teaching it hasnt changed

00:40:50 Lynda Stahl: perseverance is lacking!

00:40:50 Diane Thole: They don't like to productive struggle

00:40:51 Robin Schwartz: Nick Mathslayer? that's a new one for me

00:40:51 Anne Marie Hohman: I loved proofs in high school. I think today's students do less logical/technical writing.

00:40:51 Greisy Winicki Landman: "ready" means motivated?

00:40:52 Diane Butka: They do think it is important to learn

00:40:52 Brenda Strassfeld: Teacher are less ready to teach geometry now if though the students have better content background in geometry

00:40:57 Mr Louis: there is more access to resources but the use of these resources are not consistent

00:41:06 Alana Wolfer: I agree about making connections and less rigor

00:41:06 jill brown: What is your definition of proof?

00:41:07 Mark Vasicek: I thought connections now were better than previous

00:41:07 harry holloway: multiple choice cannot test proof.

00:41:07 Lisa Hennefarth: They are given scaffolded sentence frames or multiple choice options which does not require students to think.

00:41:11 Belen Chug: Students are easily distracted by their cellphone.

00:41:14 Susan Shuart: Kids are tested so often that they stop caring how they do on them.

00:41:20 Arlene Bachinela: it's how they learn their geometry

00:41:20 Claudia O'Keefe: I took Geometry in 1983 - it was all memorization with no connections, but that is easier to replicate. I teach with more understanding and application - harder to memorize, but it makes more sense

00:41:23 Mary Keane: They don't have to use mathematics to justify their answers. It's right because I put in the calculator.

00:41:35 Lucinda Lawson: Please come do a study at Pine Bluff High School or our middle school...

00:41:36 Mary France Imperial: a lot of distractions and also the curriculum change

00:41:48 Greisy Winicki Landman: i want to challenge the idea that proofs have to start in geometry

00:41:54 Lisa Hennefarth: Again, the thinking behind the math they are doing is lost - math is memorized not understood.

00:42:04 Lucinda Lawson: they aren't used to having to justify anything...

00:42:14 Rhonda Prater: students want to ask why, but they expect google to give them the answer

00:42:18 Greisy Winicki Landman: this is a teachers/textbook choice

00:42:24 Robin Schwartz: there is an amazing CPCTC video made in 2008 that s's love

00:42:44 Saul Gonzalez: Too formal, no context

00:42:45 Mike Shaughnessy: Justification can occur in all branches of mathematics, not just in geometry—justification is a bit broader than our usual narrow view of proof.

00:42:47 Lucinda Lawson: \my students receive but not question

00:43:02 Lynda Stahl: yes, please!!

00:43:03 Dr Deborah Smith: Too many theorem to memorize!

00:43:06 Catherine Bronikowski: maybe it's too formatted

00:43:12 Susan Shuart: Most kids are given a selection of answers and they just choose which one goes where.

00:43:13 Ronald Lubatti: with everything on internet, students dont see need to justify

00:43:19 Lucinda Lawson: Rules and vocabulary...

00:43:53 Faith Peddie: Here is a link to the videos that we will use for tonight's webinar: <https://www.pisc.udel.edu/nctm100/>

00:43:58 Chonda Long: <https://www.pisc.udel.edu/nctm100/>

00:44:16 Chonda Long: <https://www.pisc.udel.edu/nctm100/>
PISC

00:44:46 Dave Hankin: Got it...

00:44:52 Chonda Long: PISC

00:45:00 Lisa Bailey: how do you get it to play?

00:45:07 Chonda Long: <https://www.pisc.udel.edu/nctm100/>
Password: PISC

00:45:13 Jenifer Hummer: For now just watch the first video.

00:45:49 Lisa Bailey: There's no place to press play

00:45:53 harry holloway: Is this a middle school class?

00:45:54 Susan Danskin: I cn't get it to play

00:46:00 Russell Maciag: Its working on mine...

00:46:02 Kathy Felt: Mine is playing

00:46:02 Thi Nguyen: it play but no sound

00:46:04 Sheila Kirton-Robbins: nO WORKING

00:46:05 Tessie Menta: Asking me to log in

00:46:06 Trish Harris: It's playing for me – lovely.

00:46:06 Caitlin Maguire: I can get it to play only if i type in the URL not click the link

00:46:07 Jennifer McMillen: It worked fine for me

00:46:10 Lisa Bailey: same

00:46:10 Shashidhar Belbase: It does not play.

00:46:12 Rusmayris Guillermo: scroll down...its at the bottom

00:46:12 Tanya Landry: ALL CAPS
00:46:13 Rhonda Prater: it plays but the sound is really low
00:46:13 harry holloway: scroll down
00:46:17 Karoulin Aljoris: scroll down u can see it
00:46:18 Susan Creenan: THEY need to scroll down
00:46:21 Francis Kisner: Your voices are still playing over the video we are watching.
00:46:21 Chonda Long: Make sure to put in the password
00:46:24 Shashidhar Belbase: Ask more ID and PW.
00:46:26 dana dulzo: its working for me
00:46:29 mike murphy: scroll down, password is all caps, it works
00:46:30 Lisa Hennefarth: You need to put in the password and then hit play.
00:46:39 Carole Bamford: it's playing but very slow to load
00:46:39 Lisa Hennefarth: It's working for me.
00:46:47 Alanna Prudhom: It will not play
00:47:10 Tiffany Jones: I LOVE her use of vocab. I love the construtive feedback and response

00:47:12 Flora Wright: It will not play
00:47:14 Chonda Long: Did you put in the password?
00:47:15 Barbara LaPenta: I liked that there were multiple answers to this quesiton
00:47:17 Phillip Dysart: you can barley see the triangles they are working with
00:47:30 Trish Harris: Love it!
00:47:32 Diane Butka: can u just play the video for us
00:47:34 Ashley Dobravolsky: I noticed the student's enthusiasm as she presented. She was comfortable talking in front of the group and using mathematical vocabulary to do so.
00:47:38 Shashidhar Belbase: Yes, it works now.
00:47:39 Christina Banta: I like that there was more than one answer to the question
00:47:39 Mark Vasicek: That was like a Marilyn Brown movie. I wish it were always that easy.
00:47:40 Russell Maciag: I noticed that students had to present work and justify their answers. Students could comment on each other's work.
00:47:43 Aya Zvaigzne: Multiple solution paths... happiness
00:47:48 Kristen Cooper: I love the way she asks the other students to help
00:47:50 Robin Koller: student was familiar with the vocabulary
00:47:50 Shashidhar Belbase: I was in wrong place, it is working now.
00:47:55 William Sabor: Put the plan before the technical language. It's more important.
00:47:55 Kathy Felt: I like the support the class gave to each other
00:47:57 Emerson Roman Sanchez: Share ideas
00:48:05 harry holloway: were those middle school students?
00:48:12 Russell Maciag: work was open ended
00:48:12 Caitlin Maguire: I love how she addresses the others students acceptable answer
00:48:12 Jenifer Hummer: The task is in the slides. We will be sharing the

slides.

00:48:15 Lynda Stahl: So, this webinar is going to help us be able to get students up to the front of the class and talk math??!?

00:48:17 Dave Hankin: I like how the students supported each other and how the teacher invited others to share their thoughts.

00:48:19 harry holloway: so advanced

00:48:20 Christina Tully: I noticed the comfort of the students speaking

00:48:21 mike murphy: that student is very outgoing

00:48:21 Jill Ethridge: I like the dialogue between students and the multiple options of how to write the proof

00:48:21 Kendra Edwards: Students were given a page of theorems to reference

00:48:25 Trish Harris: And students were comfortable both presenting alt views/approaches and receiving them not as corrections but as new/alt ideas. The teacher created a great classroom culture.

00:48:25 Carole Bamford: this is as frustrating as trying to teach proofs! I hear about two words at a time

00:48:27 Christine Rudakewycz: I noticed that the student was always consulting her notes to explain each step. It seemed as though she was going through a list of steps, instead of actually thinking about the problem and how to figure out the proof.

00:48:27 Robin Alves: Love that she asked if there were other ways to look at this.

00:48:28 Lucinda Lawson: MS LONG'S LINK WORKS

00:48:30 Dr Deborah Smith: I noticed that the student was comfortable with the feedback from her classmates on her mistakes.

00:48:31 Shashidhar Belbase: She is using vertical angles

00:48:32 Rusmayris Guillermo: students presented the proof... I wonder why the teacher chose her to present... what were the teacher noticing

00:48:35 Katherine Raiguel: There were at least 2 ways to write the proof

00:48:36 Donald Wahlers: Teachers inquiry as to 1 little thing was disappointing. As we saw there were alternate options for solution. Luckily at least 1 student picked up on that

00:48:39 Jet Yeung: video not working

00:48:42 nancy: Notice: students using academic language, students have theorems list to refer to

00:48:43 Diane Thole: I like how it was a proof with multiple pathways ASA or AAS theorem

00:48:45 Macobia Harris: I like the student presenting proof and other students commenting on their thoughts as well.

00:48:55 G DeGeorge: WATCH VIDEO 4 NEXT?

00:49:01 Jeanetta Glass: video worked fine. audio wasn't great.

00:49:04 Rommel Daz: The student did well in presenting

00:49:05 Nell Thurlow: Awesome

00:49:09 harry holloway: why show advanced students?

00:49:19 Eko Yulianto: Nice doing math, but really it must be take a long time of teching math

00:49:19 Teresa Bulanda: great discourse

00:49:20 Cindy Bryant: She did a great job of explaining her proof.

00:49:23 Lisa Ashe: Absolutely! That's impressive
00:49:30 Ann Assad: Have too scroll down first.
00:49:35 Fatima Sabre: Audio was not great
00:49:55 Viragni Chand: Student presenting did a great job
00:49:57 Susan Creenan: The presenter was awesome. I really liked that
another student felt safe to come up with another way of proving it.
00:49:57 Saul Gonzalez: Excellent presentation of knowledge, skills, and
communication of student!
00:50:01 Lucinda Lawson: This happens when I post a video for MY students....
It's okay!
00:50:04 Shelley Sopa: WONDER: How did the teacher choose which student's
work to show at the front? Did they work in groups or individually?
00:51:27 Ronald Lubatti: in common core, cannot go very deep due to the fact
that so many topics have to be covered
00:51:52 Alana Wolfer: There is so much to cover in such a small amount of
time
00:51:58 nancy: wonder: how do you develop student agency & safe environment
online
00:51:59 harry holloway: 8th grade geometry is very different than high
school geometry because the students are accelerated
00:52:06 Lucinda Lawson: Proofs relate to justification and explanation...
That is how I approach proofw.
00:52:35 harry holloway: If students can't remember what bisector means, this
is hard to do.
00:52:47 Lucinda Lawson: vocabulary and rules...
00:53:14 Lucinda Lawson: YEP
00:54:11 Greisy Winicki Landman: have you seen DeVilliers paper on the roles
that proofs play? Students do not see the need to proof
00:54:26 Shauna Brown: Real world math problems connect more with students
00:54:55 Faith Peddie: <https://www.pisc.udel.edu/nctm100/>
PISC
00:55:01 Lucinda Lawson: GPS is geometry!!!
00:55:09 Linda Damianides: Students don't need real world settings to
want to do puzzles...I think there's an innate desire to solve problems! Not
everything has to be connected to the real world.
00:55:12 Catherine Bronikowski: finally manipulatives!
00:55:15 Chonda Long: <https://www.pisc.udel.edu/nctm100/>
Password: PISC
00:55:53 Jenifer Hummer: Yes videos 2 and 3 are next.
00:56:03 Myrna Cabrerros: what is the password
00:56:11 Jenifer Hummer: PISC
00:56:43 Chonda Long: <https://www.pisc.udel.edu/nctm100/>
Password: PISC
00:57:00 Jenifer Hummer: The task was adapted from Michael Serra's Patty
Paper Geometry. Yes.
00:57:32 Shashidhar Belbase: Students are using vertically opposite
angles to reason about their proofs.
00:58:14 Alana Wolfer: In video 2, the teacher leads them to clarify that
not all angles are vertical, but there are two pair
00:58:20 jill brown: In the US, how do you define a conjecture?

00:58:42 harry holloway: does any one know why they are called vertical angles? I had a student ask once and could never find it.

00:58:49 Christina Banta: Good conversation between students and teacher

00:58:52 Justin Klinger: video 2: never asked why or explain your reasoning

00:59:05 Kuniko Hall: error404

00:59:08 Rommel Daz: nice exchange of ideas, great

00:59:17 Greisy Winicki Landman: in english they are called vertical because of vertex. In Spanish they are called "opueltos for el vertices"

00:59:25 Lucinda Lawson: two lines meet at a vertex.

00:59:44 Greisy Winicki Landman: two lines meet at a point. vertex is a role, not a figure

00:59:54 harry holloway: but that also applies to adjasunt angles

01:00:06 Shashidhar Belbase: The students are using vertically opposite angles to relate the adjacent angles. They are using multiple concepts of angles.

01:00:10 dana dulzo: the teacher didn't tell them how to do it, they found their own methods and shared with the group

01:00:12 Masoomw Razzak: done!

01:00:16 Lucinda Lawson: vocabulary and rules.

01:00:17 Laura Cranmer: Nice to see students showing their work

01:00:17 Michelle Cirillo: Direct video link:
<https://www.pisc.udel.edu/nctm100/>

01:00:23 Nell Thurlow: Well done

01:00:25 Emerson Roman Sanchez: Video 2 - Self discovery approach

01:00:26 Russell Maciag: In video 2, students would have all different numbers and could use those many cases to come up with the theorems.

01:00:26 Tanya Landry: pretty impressive

01:00:32 Mark Vasicek: Nice videos. Would you show them to students?

01:00:32 Lisa Hennefarth: Loved the different methods for SSS in video #3.

01:00:32 Lisa Ashe: Comparison of the two strategies in video 3

01:00:33 Christine Rudakewycz: This teacher is excellent!

01:00:35 Lucinda Lawson: adjacent line share a line.

01:00:35 Robin Koller: The teacher connected the two ideas well

01:00:35 Shauna Brown: Students fluently explain their work

01:00:40 harry holloway: my Spanish students felt there word was better.

01:00:40 Louis Cicero: Thinking outside the box

01:00:50 Greisy Winicki Landman: no english learners??

01:00:52 Russell Maciag: in video 3, students used different tools to achieve the same goal

01:00:52 nancy: I noticed the teacher used the 5 principles for increasing class discussions, she chose the students

01:00:54 William Sabor: What were the teacher moves prior to the student responses?

01:00:54 Christina Tully: I noticed that the teacher rephrased what the student s said and clarified their process

01:00:55 Diane Thole: I like how the teacher coaches kid's ideas

01:00:56 Rhonda Prater: the teacher accepted what they had done and helped them tweak it together

01:00:56 John Simons: That was great

01:00:58 Saul Gonzalez: Your students used different tools to arrive at the same conclusion!

01:01:03 Mary Keane: Students applied different methods to solve the same problem.

01:01:07 Martisha Dunn: in the third video the student explain the work

01:01:07 Nick DiGrispino: two different approaches in solving

01:01:14 Lisa Ashe: probing questions in video 2 to make sure the students understood vertical angles

01:01:17 Janine Addison: Allowed students to completely describe and then followed up

01:01:28 Viragni Chand: Loved the different ways used by the two students for SSS

01:01:28 harry holloway: good

01:01:29 Robin Alves: Any suggestions on how to get students more comfortable explaining their understanding?

01:01:49 harry holloway: the first proof I do are non-matheamtical

01:01:56 Cindy Bryant: Yes, loved that they used different tools and methogns

01:02:03 Russell Maciag: make them explain. give feedback kindly. give examples

01:02:10 Lucinda Lawson: sorry.. adjacent angles share a side

01:02:12 Wilma Besin: the students have good backgrounds on geometry vocabulary in math is impt.

01:02:22 Lucinda Lawson: yes... vocabulary

01:02:29 Teresa Bulanda: using different tools in second video(very creative)for construction, understanding the way they work for the problem

01:02:39 Lucinda Lawson: and knowing that domain is the same as independent variable...

01:03:04 harry holloway: ajuacent angles share a side and vertex

01:03:24 Cindy Bryant: Using tools of their choice and explaining their thinking gives them a much richer experience than just outlining the proof.

01:03:39 Katherine Chang: Great ideas to increase student talk:

01:03:42 Katherine Chang:
<https://www.amazon.com/Talk-Read-Write-Nancy-Motley/dp/0997740213>

01:03:45 Cindy Bryant: More like to remember.

01:04:06 Dominador Guillermo: Can you comment on pros and cons of oral discourse as opposed to written in their conjecturing and reasoning

01:04:21 Jeanetta Glass: There are similar activities in Delta Math.

01:04:27 Myrs Absim: Excellent tools for students. Thanks.

01:04:41 Greisy Winicki Landman: why not use transformations? that is what common core is requiring

01:04:51 Greisy Winicki Landman: do the proofs with transformations

01:05:04 Lucinda Lawson: yes, but not opposite or created when lines intersect... .

01:05:26 harry holloway: a lot of class time in this.

01:05:42 Chonda Long: <https://www.pisc.udel.edu/nctm100/>
 Password: PISC

01:05:54 Jenifer Hummer: Video 4 :-)

01:06:02 harry holloway: The room is has so much space!!

01:06:42 Carol Treglio: What I noticed as a teacher is that giving time for

student to think, conjecture and justify makes it stick.

01:06:55 harry holloway: good use of language

01:06:55 Shashidhar Belbase: The student had easy proof. Did not require much thinking.

01:07:51 Pamela Liegl: I love Geometry and Proof, however I will have to check out the videos later, as my computer is having issues. Thanks for a useful presentation.

01:07:54 harry holloway: I have done a lot of this discovery approach, and found it took a lot of time.

01:07:55 Shauna Brown: Students were able to verbalize their thinking clearly

01:07:56 Caitlin Maguire: I notice that the teacher is opening up the discussion to other groups once the student has presented

01:07:58 Emerson Roman Sanchez: Self-discovery approach is awesome

01:08:02 Tiffany Jones: I wonder... how the teacher fostered such a safe space... what were the steps over the school year to build this environment #goals

01:08:11 Shashidhar Belbase: The teacher did not problematize it in a creative way. It seemed straightforward proof.

01:08:19 Nell Thurlow: student was very confident

01:08:22 Sheila Kirton-Robbins: Students were comfortable with the vocabulary

01:08:22 Catherine VanNetta: The teacher invited the young man to come to the front of the room to share his conjecture with the class.

01:08:23 Caitlin Maguire: I wonder how if they did a proof for every parallelogram property

01:08:27 Alana Viverito: I like how there was scaffolding based on what the teacher noticed the tables talking about. She strategically chose a student to go up first and then other tables built on his idea

01:08:34 harry holloway: some students would look it up.

01:08:34 Christina Banta: Good collaboration

01:08:38 Justin Klinger: I wish she let the students come up with the wording of the conjecture.

01:08:38 Christine Rudakewycz: The teacher made a great point, that just because the diagonals bisect each other doesn't mean that they are congruent.

01:08:40 Laura Cranmer: I wonder how she assigned table groups to foster teamwork

01:08:41 Mark Vasicek: I notice that using the segment addition, as the boy did, does not necessarily mean that the two segments are congruent. Nothing was said about that. Why didn't the teacher draw a counterexample? I wonder.

01:08:43 Dr Deborah Smith: I noticed that the groups came to the same conclusion in different ways.

01:08:49 Belen Chug: Good class size. More challenging when you have 30 or more students in a class.

01:08:50 dana dulzo: cooperation and comfort in the classroom is great for student talk and sharing

01:08:52 Robin Schwartz: yes Harry where do your s's look things up most often?

01:08:54 Macobia Harris: Getting everyone else's proof and opinion, agree/disagree is very important to have all parties engaged and involved

01:08:55 Diane Thole: Loved it! Kids take ownership and they make the

rules.

01:08:59 Rebecca Peiffer: I loved seeing the student who presented having an "ah-ha" moment in the background when other students were able to use the vocabulary of "bisector" to say what he noticed more simply

01:08:59 Linda Rodriguez: I'm pretty sure the last time I did proofs was in the late '80's – and I wonder how I did it then...

01:09:01 Nick DiGrispino: good discourse among the students

01:09:01 Martisha Dunn: some students just agreed with their peers

01:09:05 nancy: I noticed that the students did not add ideas to the conjecture after the student used the appropriate mathematical language

01:09:07 Susan Shuart: The students should come up with the final conjecture.

01:09:07 John Simons: Her delivery with the students was very down to earth and I like how she encourages mathematical talk without being the semantic police

01:09:12 Fatima Sabre: They came to the same conclusion using different ways

01:09:13 harry holloway: did the whole table get ti because one student looked up properties of a parallelogram

01:09:14 Saul Gonzalez: I like how students are using a wide variety of tools to arrive at a conjecture.

01:09:27 harry holloway: time is a killer.

01:09:31 Jennifer Knudsen: what happened to the first kid's conjecture?

01:09:58 Scott Ing: wow they've got so many large screens by their tables just like Buffalo Wild Wings LOL

01:09:59 Viragni Chand: Good class size

01:10:06 harry holloway: CAmp? students doing geometry over the summer? so not a normal class.

01:10:08 Russell Maciag: the teacher came back to the first table and checked back in with them

01:10:14 Wilma Besin: Mathematical Investigation

01:11:45 harry holloway: I did this all the time in my honors 8th grade, but can't really do it in my regular classes.

01:11:51 Jennifer Knudsen: I missed that

01:12:03 Janine Addison: trouble reading math terminology

01:12:28 nancy: students might be afraid to be wrong, might choose to look up on phone

01:12:32 harry holloway: The level of English is very high. The sentence structure is high.

01:12:45 Arlene Bachinela: identifying which will be the premise and which works be the conclusion

01:12:54 Russell Maciag: why students might not get it: the if statement seems redundant, why should you have to state it is a parallelogram

01:12:59 Robin Koller: This would be tough for most students

01:13:01 Anne Marie Hohman: this is something that we can coordinate with ELA classes on in middle school. It speaks directly to their standards in ELA

01:13:11 Robin Schwartz: yes the language needs to be very precise

01:13:20 harry holloway: Fi then is not natural language. for EL students it is very hard.

01:13:30 Robin Schwartz: in video 1 the first student made a slight

misstatement saying exactly what you mean is a challenge

01:13:31 Jennifer Knudsen: what do you think of conjecture in the form of "for all" statements rather than conditionals?

01:13:51 Robin Schwartz: also a challenge for s's with IEPs

01:13:52 Robin Koller: Having a diagram would help students

01:14:00 harry holloway: for all is much easier, lower level.

01:14:16 Saul Gonzalez: I wonder what the criteria is for a student obtaining a 2 or 3?

01:14:25 Anne Marie Hohman: Yes, RK, sentence diagraming makes this much easier, especially for my ESL students

01:14:42 jill brown: Yes, where is the marking scheme

01:14:56 harry holloway: and if then is not a normal diagraming exercise.

01:16:00 Russell Maciag: if students can not do something you expect them (assume them) to do, then teach them. It shows you care about them as learners and individuals if you actually help them with the skills they need.

01:17:28 harry holloway: yes, great to do, just hard with the time.

01:17:40 Shauna Brown: Sometimes it's hard for students to not feel their right

01:17:44 Russell Maciag: skipping past it doesn't make math faster, it makes students not understand.

01:18:04 harry holloway: my honors 9th grade would love all this stuff.

01:18:18 G DeGeorge: That was great!

01:18:28 Chrystina Harich: how many days would you spend on proofs

01:18:29 harry holloway: 8th grade.....

01:18:32 Jennifer Knudsen: this can't be only for honors students

01:18:34 Susan Danskin: Why wouldn't your non-honors class enjoy it as well?

01:18:48 Emerson Roman Sanchez: I have found it takes longer to teach but it saves lots of Whys later on.

01:19:22 Cindy Bryant: Longer to teach definitely pays off @Emmerson.

01:19:25 Russell Maciag: Like Corilli said, you have to front load it. but it makes everything else faster

01:19:38 Kendra Cole: this was an exceptional webinar. please share if the presenters have any other webinars in the future. a lot of my improvement focuses were highlighted here.

01:19:46 Ana Guerrero: Thank you for all the great ideas!

01:19:51 Eko Yulianto: Good teaching time for mathematics should not be inserted between the schedules of teaching other subjects, because we cannot be in a hurry :D we must look at the progress of each student carefully

01:19:52 Ronald Lubatti: when you teach a subject longer, what do you give up by end of year

01:20:05 Karoulin Aljoris: thank you

01:20:05 Lesly Brown: Was the certificate suppose to come up at the beginning like it had been doing, or will we receive a link tomorrow?

01:20:07 Roberta Ludwigsen-Hill: Thank you!

01:20:07 dana dulzo: thank you for the resources and hearing from a teacher that changed her approach, very encouraging

01:20:07 Jennifer Knudsen: thank you!

01:20:08 Sheila Kirton-Robbins: Thank you.

01:20:08 jill brown: thanks

01:20:09 Rachell Scott: THANK YOU!!!

01:20:10 Susan Danskin: Thank you
01:20:10 ALICIA PARUGINOG: Thank you so much
01:20:11 Nell Thurlow: Thank you!
01:20:12 Niniek Budhiastuti: thank you
01:20:13 Haohao Wang: thank you for the presentation.
01:20:13 Russell Maciag: Thank you!
01:20:14 India Puch: thank you Great presentation
01:20:15 Macobia Harris: Thank you!!
01:20:15 Sharon Ling: Thank you!
01:20:16 Janine Addison: very good webinar. Not what I had antipated, but
got some great ideas!
01:20:16 nancy: thank you
01:20:17 Travis Collier: Thank you
01:20:19 Shashidhar Belbase: Thank you for nice discussion !
01:20:20 LeAnna Deveaux-Miller: Thank you presenters
01:20:22 Tom Jr. Cochrane: What was that 30 hour course?
01:20:22 Dr Deborah Smith: Thank you
01:20:22 G DeGeorge: Thank you.
01:20:24 Daniel Irving: Thank you.
01:20:26 Saul Gonzalez: Thank you for the outstanding webinar!
01:20:28 Mark Vasicek: This is useful. Thanks!
01:20:28 Martisha Dunn: Thank you
01:20:29 Scott Ing: great stuff, thanks
01:20:34 Sunitha Kannenchery: Thank you
01:20:35 Arlene Bachinela: Thank you so much!
01:20:35 Trena Wilkerson: excellent! thank you fur sharing your
thoughtful research in real classrooms!
01:20:37 Belen Chug: Thank you.
01:20:40 Nick DiGrispino: Thanks for wonderful session!!!
01:20:42 Viragni Chand: Thank you for the great presentation.
01:20:43 Barbara LaPenta: Thank you Michelle and others!
01:20:46 Lesly Brown: Thank you. Great presentation.
01:20:46 Kristen Cooper: Thank you so so much!
01:20:54 Carol Treglio: Thank you
01:20:55 Kuniko Hall: Thank you.
01:21:02 Sharon Laahs: Thank you so much!!
01:21:08 Robin Alves: Thank you so much
01:21:09 Eko Yulianto: Nice webinar
01:21:09 Greisy Winicki Landman: how is that readiness to proof?
01:21:10 Fatima Sabre: Thank you presenters, Great Presentation.
01:21:23 Rosalyn Bantay: Thank you so much
01:21:28 Jet Yeung: Thank you for all the information.
01:21:33 Wilma Besin: thank you so much !
I Love Geometry
01:21:43 Arnold John Bulanadi: Thank you so much
01:21:47 Lawanda Mahomes: Thank you! Great Presentation!
01:21:53 Rommel Daz: Thank you Michelle
01:21:58 harry holloway: most of my geometry students failed there geometry
readiness test. I gave it to them in the first week.
01:22:07 Trena Wilkerson: Thank you for an excellent presentation on

an important mathematical process!

01:22:09 Cindy Bryant: Such a great presentation!

01:22:11 Kathy Felt: Thank you!

01:23:01 Asri Alfia Sugiharti: Thank you!

i'm from Indonesia :)

01:23:15 Alanna Prudhom: There were good ideas in the webinar. But, I just want to share with you all that my husband is a police officer. And, I took to heart what you said about how police brutality is affecting the education of our children.

01:23:25 Cindy Bryant: Thanks for joining us from all over the world.

01:23:26 harry holloway: A great way to get kids talking is talking about reasoning in social situations. I would put wrong material on the board, and have them correct me.

01:23:31 Kendra Edwards: Thank you. This was a great presentation!

01:23:31 Rolando II Delos Reyes: Thank you from Manila Philippines! :) PPHPH

01:23:46 Mary Fisher: Thank you!

01:24:07 Wilma Besin: Thank you

Cebu City, Philippines

01:24:46 Jennifer Knudsen: thanks teacher jennifer

01:24:46 Alanna Prudhom: I just want you all to know that many police officers are not mean!

01:25:19 Dave Hankin: Thank you again from Globe, Arizona!

01:25:23 Alana Viverito: Thank you Dr. Cirillo!!

01:25:26 Aya Zvaigzne: Thank you for a really great webinar.

01:25:27 Robin Schwartz: tx

01:25:31 Emerson Roman Sanchez: ¡Gracias!

01:25:32 Angelita Beltran: Thank you!

01:25:35 Francis Kisner: Thank you.

01:25:40 paloma carrera: thank you

01:25:42 Asri Alfia Sugiharti: terimakasih

01:25:43 Thi Nguyen: Thank you1

01:25:48 Justin Klinger: Thank You. The best webinar I have attended so far.

01:25:50 Shashidhar Belbase: Thank you !

01:25:55 Linda Damianides: Thank you!

01:26:12 harry holloway: This is old stuff. The discovery geometry book did this a lot.

01:26:18 Abdul Razak Othman: Excellent presentation!

01:26:28 Wisnu Siwi Satiti: Thank you all!! such a great presentation

01:26:31 Michelle Cirillo: On the police, two people commented on something about the police

01:26:32 Andrea Reeves: Thank you!

01:26:37 Jenifer Hummer: Thanks everyone!

01:26:43 Dominador Guillermo: Thank you for the great ideas.

01:26:46 Michelle Cirillo: They took heart to the opening comments.

01:26:49 Sheila Kirton-Robbins: Great job. Thanks.

01:27:42 Dominador Guillermo: Surveying where students are at the beginning of lessons always help save time.

01:28:00 Caitlin Maguire: Thank you for a great webinar!

01:28:08 Rusmayris Guillermo: Thank you Everyone!

01:28:13 Lisa Heneffarth: Thanks you!

01:28:14 Joyce Meier: Thank you!

01:28:16

Emerson Roman Sanchez: ¡Gracias!

01:28:20

Tessie Menta: Thank you

01:28:22

Gretchen Mae Empuesto: Thank you so much