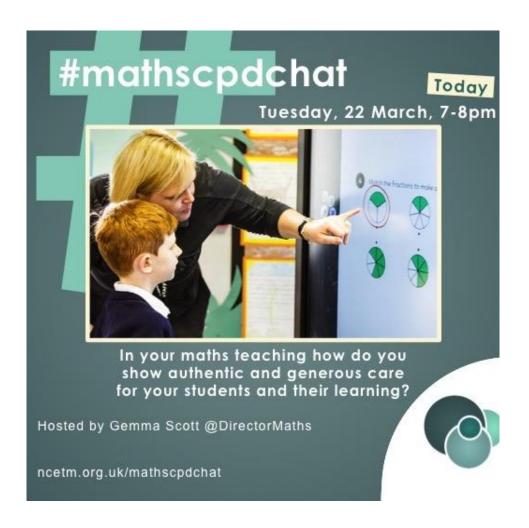


#mathscpdchat 22 March 2022

In your maths teaching how do you show authentic and generous care for your students and their learning?

Hosted by **Gemma Scott**

This is a summary of the discussion – to see all the tweets, follow the hashtag **#mathscpdchat** in Twitter



The links shared during this discussion were:

What is #YesUCan? which is a part of the Glow Maths Hub's website where you can read a description by teachers in the Glow Maths Hub of the #YesUCan Growth Mindset. It includes an image showing 'Four Mindsets that affect whether we learn'. It was shared by Dave Bowman



<u>Mistakes, mindsets and mathematics</u> which is an article by <u>Dave Bowman</u> in *Impact* (a journal of the Chartered College of Teaching). It was shared by <u>Dave Bowman</u> and <u>Teresa Thompson-Pinckney</u>

<u>Conference Keynotes</u> which is a video by Professor Anne Watson which she has provided as a record of her plenary presentation 'Care in Mathematics Education' at the Autumn 2021 Conference of the British Society for Research into Learning Mathematics (BSRLM). It was shared by <u>Mary Pardoe</u>

<u>Care in Mathematics Education</u> which is a book by <u>Anne Watson</u> in the Palgrave Studies *Alternative Education* series. The author describes examples of mathematics teaching in a wide range of contexts and pedagogies, including in current mainstream educational spaces, in which care for mathematical learning and thinking is combined with care for learners. It was shared by <u>Mary Pardoe</u>

A full illustrated summary of the discussions in this #mathsCPDchat follows.

The screenshots below linked to Twitter show some of the conversations generated by Gemma's first main question. Teachers discussed the value of struggle in doing maths, making mistakes, 'can't do maths' attitudes, ways of giving praise, and teachers showing students that they are also human beings. Click on any of the following screenshots-of-a-tweet to go to that actual tweet on Twitter. The following conversations and single replies were generated by this question from Gemma Scott:



Director of Maths @DirectorMaths - 15h So without further ado...

Q1- What strategies do you use, within your maths lessons, to build positive working relationships with students?

#mathscpdchat

This conversation between Martyn Yeo and Gemma Scott ...



Martyn (He/Him) @martynyeouk · 15h Replying to @DirectorMaths

I make mistakes (sometimes on purpose, sometimes for real!) to help the children see its okay and I tell them about which elements I find challenging. Show them its okay to struggle #mathscpdchat



Director of Maths @DirectorMaths · 15h

Great idea! How do you judge the right amount of struggle for a student? Does it carry on ability or other factors? #mathscpdchat





Director of Maths @DirectorMaths - 16h

Replying to @DirectorMaths and @martynyeouk

That definitely said "vary on ability" in my head......



Martyn (He/Him) @martynyeouk · 15h

Its all about coaching and knowing your children I guess. We also talk about being the challenge zone being the place where best learning happens! #mathscpdchat



Director of Maths @DirectorMaths . 15h

Love the challenge zone idea. Do you find this idea is infectious amongst the children and they support each other to challenge themselves #mathscpdchat



Martyn (He/Him) @martynyeouk - 15h

Hmmmm sometimes - takes quite a lot of training. Even at primary age they have a sense of not being able to achieve in maths #mathscpdchat



Director of Maths @DirectorMaths - 15h

This is something that they can carry with them for years. How do you try and break that belief? #mathscpdchat



Martyn (He/Him) @martynyeouk · 19h

Show them it can be done? I do wonder where it comes from because in 5 year olds have these thoughts #mathscpdchat



Director of Maths @DirectorMaths · 19h

Replying to @martynyeouk

We are going to come on to parents in a moment. How much comes from home do you think? #mathscpdchat



Martyn (He/Him) @martynyeouk · 18h

Interestingly I just types in cant do maths into twitter and lots came up. Tried with cant do reading and cant do writing and nothing came up... #mathscpdchat



Director of Maths @DirectorMaths · 19h

There's enough here for a whole #mathscpdchat but why not pop over now and give your ideas on beating this.



Martyn (He/Him) @martynyeouk · 19h

Replying to @DirectorMaths

Interestingly I just types in cant do maths into twitter and lots came up. Tried with cant do reading and cant do writing and nothing came up... #mathscpdchat





Martyn (He/Him) @martynyeouk · 19h

Replying to @DirectorMaths

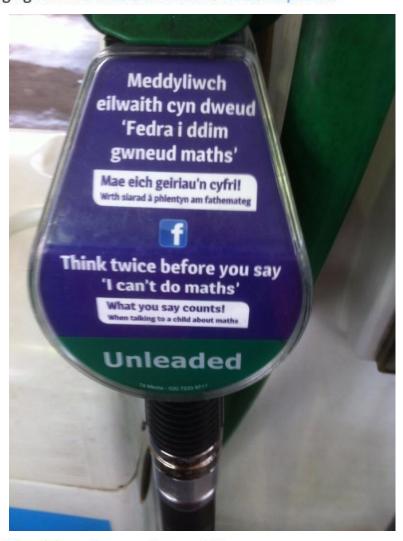
I put in "I love Maths" and a lot came up too - maybe we need to promote those more #mathscpdchat

... was picked up and extended into a conversation between <u>David Bowman</u>, <u>Alice Ward-Gow</u> and <u>Martyn Yeo</u> ...



Dave Bowman @Maths4ukplc · 18h

'Twas every thus. @joboaler Elephant in Classroom identifies how it is changing with a #YesUCan attitude #mathscpdchat





Miss Ward-Gow @mcwardgow · 18h

What happens when a student responds with "no I can't" ? #mathscpdchat



Dave Bowman @Maths4ukplc · 18h

Add "yet". This can be a game changer. It shows learning moves from not knowing to knowing and requires time. Primaries have a Yeti monster! #mathscpdchat





Martyn (He/Him) @martynyeouk · 18h

Yes! I always put the yet on the end! #mathscpdchat

@ClassDojo has a whole video on the power of yet



Miss Ward-Gow @mcwardgow · 19h

Replying to @Maths4ukplc @martynyeouk and 2 others

And if they say "No I can't yet and won't ever" ? #mathscpdchat



Dave Bowman @Maths4ukplc · 19h

Start a discussion with "why?" First step is they want to do it. Then with brain plasticity, your great teaching and their effort they can.

#mathscpdchat



Miss Ward-Gow @mcwardgow · 19h

I understand what you're saying and can see that for most this would probably get them onside, but some students do not want to do maths and having a positive mindset will not be enough to turn them 🧟 #mathscpdchat

... and extended further by **Gemma Scott** and **David Bowman**:



Director of Maths @DirectorMaths - 19h

Replying to @Maths4ukplc @martynyeouk and @joboaler

How have I not seen this before? Petition to get them at every filling station across the land! #mathscpdchat





Dave Bowman @Maths4ukplc · 19h

@WG_Education @PrifWeinidog ran it over five years ago. Would be great if run again with @educationgovuk @MathsHubs @nadhimzahawi

The following comments from <u>David Bowman</u> and <u>Mary Pardoe</u> were both replies to a comment by Martyn Yeo followed by a question from Gemma Scott during the first conversation shown above:





Martyn (He/Him) @martynyeouk - 15h

Hmmmm sometimes - takes quite a lot of training. Even at primary age they have a sense of not being able to achieve in maths #mathscpdchat



Director of Maths @DirectorMaths - 15h

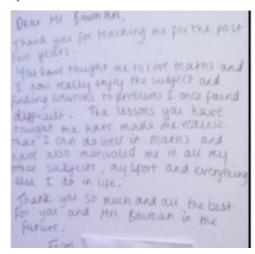
This is something that they can carry with them for years. How do you try and break that belief? #mathscpdchat



Dave Bowman @Maths4ukplc · 19h

Replying to @DirectorMaths and @martynyeouk

#mathscpdchat total belief in #YesUCan is contagious and has positive impact

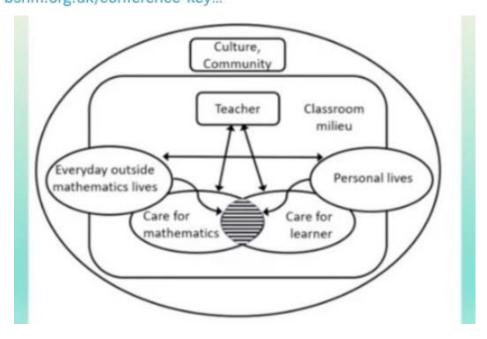


Thank you for teaching me for the past two years. You have taught me to love maths and I now really enjoy the subject and finding solutions to problems I once found difficult. The lessons you have taught me have made me realise that I can do well in maths and have also motivated me in all my other subjects, my sport and everything that I do in life. Thank you so much and all the best to you and Mrs Bowman in the future



Mary Pardoe @PardoeMary · 15h

Keep/have in mind a 'whole picture' of what 'surrounds' their (view of) learning ... another slide from Anne Watson's talk, here: bsrlm.org.uk/conference-key...



...



The following conversation between <u>Alice Ward-Gow</u>, <u>Martyn Yeo</u> and <u>Gemma Scott</u> followed directly from Gemma's original first question ...

Q1- What strategies do you use, within your maths lessons, to build positive working relationships with students?



Miss Ward-Gow @mcwardgow · 15h

Replying to @DirectorMaths

Lots of praise for working hard, not just praise for getting the answers right when questioning, letting students know that their ideas are valued #mathscpdchat



Martyn (He/Him) @martynyeouk · 15h

Yes! Sometimes I give them the correct answer so they don't care so much about it....but I care about how they get there #mathscpdchat



Miss Ward-Gow @mcwardgow · 15h

Yes - love an opportunity to extend a question... how did you work out an answer? Is this the only possible answer? #mathscpdchat



Director of Maths @DirectorMaths · 18h

Replying to @mcwardgow

Do you use verbal praise or other tools? Does "praise" look different for different students do you think? #mathscpdchat



Miss Ward-Gow @mcwardgow · 18h

We have stamps for praise, and use them alongside verbal praise. Yes it might look different - but should always be meaningful to the individual student #mathscpdchat



Director of Maths @DirectorMaths . 18h

Do students know the difference between genuine praise and "trying to find anything to praise". Does it matter? #mathscpdchat



Miss Ward-Gow @mcwardgow · 18h

Definitely! A teacher saying "well done" to all students doesn't have the same impact as individualising the praise e.g. "Really impressed with your problem solving skills [name]." Yes it does matter - it impacts on how students feel and this is important #mathscpdchat

... as did this conversation between Anthony Shaw and Gemma Scott:

Q1- What strategies do you use, within your maths lessons, to build positive working relationships with students?



Anthony Shaw @ShawMaths · 19h

I'm me. My students don't see an act, they all get to know the real me.





Director of Maths @DirectorMaths - 19h

This is really interesting. I would say for me personally there are definitely some days I need to act! How do you do this on the tougher days? #mathscpdchat



Anthony Shaw @ShawMaths - 19h

Replying to @DirectorMaths

I let kids know I'm tired or struggling and am honest as possible about my coping strategies. Modelling how we deal with difficulties could help one of them?

I'm not perfect and don't manage this all the time! #mathscpdchat



Director of Maths @DirectorMaths . 19h

We are more than teachers of maths! We are humans and humans have tough days. I like it! Would you let a student see that their behaviour had got to you? #mathscpdchat



Anthony Shaw @ShawMaths · 19h

Behaviour only really gets to me if I'm already having a bad day. So I tend to seek out a child after the event when I've let that happen and explain. I give kids a fresh start every lesson and ask for the same opportunity. #mathscpdchat



Director of Maths @DirectorMaths · 19h

Yes, again modelling the behaviour they will need to use in the future both in the classroom and as an adult! #mathscpdchat

Gemma's first main question ...



Director of Maths @DirectorMaths . 15h

So without further ado...

Q1- What strategies do you use, within your maths lessons, to build positive working relationships with students?

#mathscpdchat

... generated other conversations and single comments. This tweet (shown above) ...



Anthony Shaw @ShawMaths · 15h

Replying to @DirectorMaths

I'm me. My students don't see an act, they all get to know the real me.

... also prompted these replies ...

...





Niall Stoddart # @captainstoddy · 14h

I was told I was a nice mix of insulting and humorous 🔣





Director of Maths @DirectorMaths · 14h

you can always rely on kids for a character reference (assassination?) #mathscpdchat



Niall Stoddart # @captainstoddy · 14h

'Sir, I thought you were horrible when I was in year 7, but when you teach it's actually really funny and you know so much rubbish 🤣 🤣'

... and Gemma's first question directly generated this conversation ...

Q1- What strategies do you use, within your maths lessons, to build positive working relationships with students?



Catherine Edwards @Edwards08C · 15h

Replying to @DirectorMaths

Success, if they can feel successful they are more positive and more likely to try challenging things. Although getting the pitch just right is hard #mathscpdchat



Director of Maths @DirectorMaths . 15h

Yes! Success breeds success! Is this easier to do once you know the class better? How might we try it in the early days? #mathscpdchat



Catherine Edwards @Edwards08C · 15h

Prior knowledge checks work

Quick fire sequences of increasingly difficult questions to see where the class is at .

But knowing the class is the best way #mathscpdchat

... and this conversation ...

Q1- What strategies do you use, within your maths lessons, to build positive working relationships with students?



Dave Bowman @Maths4ukplc · 15h

Replying to @DirectorMaths

#mathscpdchat. Let them know you believe all of them can improve and you expect them all to. They need to believe that #YesUCan improve.



Director of Maths @DirectorMaths - 15h

Great answer. Does this all come from repeating "you can do it" or are there other things you try and do? #mathscpdchat





Mary Pardoe @PardoeMary · 15h

This is a slide from Anne Watson's very interesting talk, here:

bsrlm.org.uk/conference-key... #mathscpdchat

Care for learning through relationships

- · mutual respect;
- · learning how to learn in school;
- · whether and how teachers bring themselves into their work, such as being alongside learners;
- tenderness about identity, shame and learners' priorities;
- · the holistic nature of coming to know anything;
- · yarning to reflect on learning.



Director of Maths @DirectorMaths . 18h

Lots of great discussion going on about the role of relationships in teaching on #mathscpdchat. Come on over and join us!



Mary Pardoe @PardoeMary · 15h

Her (Anne's) talk is VERY well worth taking time to watch all the way through ... only about 30 mins!

bsrlm.org.uk/conference-key... #mathscpdchat



bsrlm.org.uk

Conference Keynotes - BSRLM

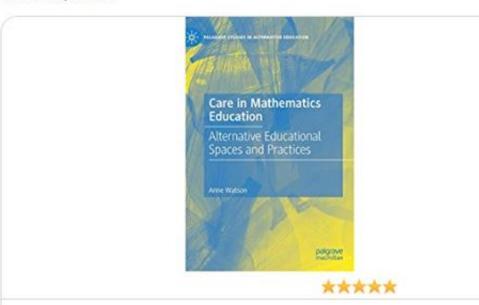
This video has been kindly provided by Professor Anne Watson, as a record of her plenary ...





Mary Pardoe @PardoeMary · 14h

And her (Anne Watson's) book puts everything in her short talk (here: bsrlm.org.uk/conference-key...) into even clearer light ... here: amazon.co.uk/Care-Mathemati... #mathscpdchat



amazon.co.uk

Care in Mathematics Education: Alternative Educational Spaces and ... Care in Mathematics Education: Alternative Educational Spaces and Practices (Palgrave Studies in Alternative Education)

... and this conversation ...



Dave Bowman @Maths4ukplc · 18h Replying to @DirectorMaths

Need to explain about brain plasticity for a how learning occurs. With effort and purposeful practice things become permanent. Emphasis that current high attainers work hard and purposefully. It's not a "natural ability"



Director of Maths @DirectorMaths . 18h

Is this something you echo with parents too? We will be thinking about them later on #mathscpdchat



Dave Bowman @Maths4ukplc · 18h

Yes! Need to get all staff on board too. #YesUCan needs to be in the culture.glowmathshub.com/page/?title=Wh... #mathscpdchat



glowmathshub.com What is #YesUCan?





SteveLoMMXXII @MaxTheMaths - 18h

Replying to @DirectorMaths and @Maths4ukplc #mathscpdchat



... and this conversation about 'routines', and establishing a supportive (conjecturing?) classroom atmosphere in maths lessons ...

Q1- What strategies do you use, within your maths lessons, to build positive working relationships with students?



webmathscouk @Dids31 · 15h

Replying to @DirectorMaths

Regular routines. Lots of use of whiteboards. Students realise very quickly that they are safe and no one will be embarrassed by incorrect answers or the occasional ?? Lots of praise (particularly for great incorrect answers that prompt further discussion)



Director of Maths @DirectorMaths · 15h

I really like the idea of feeling safe. Is this a culture that you work hard on at the start of the year or one that comes naturally? #mathscpdchat



webmathscouk @Dids31 · 15h

It takes time. I started a new school in September after being in my previous school for 16 years. Calm and kind. Smiles and encouragement. Consistent approach.



Director of Maths @DirectorMaths · 15h

Yea it can be hard establishing yourself in a new school but consistency is key. Do you find that when students know what they will get from you it helps to build a relationship even if they don't "agree" with the "rules" #mathscpdchat





webmathscouk @Dids31 - 15h

I have taught across 6 very different schools in my career. No surprises, consistency is key.

... and this conversation:



Mr Mattock FCCT NPQSL @MrMattock · 15h

Replying to @DirectorMaths

They have confidence in me to do a good job in teaching them, and they can see I try hard to deliver #mathscpdchat



Director of Maths @DirectorMaths . 15h

Is this down to reputation or is it something you work hard to build in September? #mathscpdchat



Mr Mattock FCCT NPQSL @MrMattock · 15h

Both at this point #mathscpdchat

There were also two single replies to Gemma's Q1:



Emma Robson @EJRobson1979 · 15h

Replying to @DirectorMaths

Show them how easy it is to make daft mistakes, and why, so the learners know they aren't the only ones who mess up. I ensure I have something to talk to each of them about - their pets, hobbies, English lessons, anything to show I'm interested in them as a learner.



Jasmine Etheridge @Miss_Etheridge · 14h

Replying to @DirectorMaths

Praise, consistency in lessons and taking an interest in them. They are the real me and hopefully the passion for what I teach!

Gemma's second question ...



Director of Maths @DirectorMaths . 16h

Q2- What about students who "don't care about learning maths". How do you share authentic care to them?





... included this interchange ...



webmathscouk @Dids31 · 16h

Replying to @DirectorMaths

I don't believe any student doesn't care. They lack confidence and self esteem. It is a little by little approach to small successes.



Director of Maths @DirectorMaths . 16h

Yes! The "behaviour" we see is often rooted in insecurity. How do we help staff see past that? #mathscpdchat



webmathscouk @Dids31 · 16h

Great, supportive CPD. A chance to discuss different approaches if one isn't working. Sharing and professional discussions with no blame (for the student or the teacher)

... this conversation ...



Dave Bowman @Maths4ukplc · 16h

Replying to @DirectorMaths

#mathscpdchat Need to work on purpose and belonging for all students in every class. We all need to see a purpose if we are to put effort into learning.

Four Academic Mindsets that affect #YesUCan whether we learn Teaching Adolescents to become learners: Farrington et al 2012 Mangels, Butterfield, Lamb, Good, & Dweck, 2006 Self-Efficacy #YesUCan Belonging Purpose





Director of Maths @DirectorMaths . 16h

Yes! How do you help create a sense of purpose? Is it the grades they have receive or something else that they are working towards? #mathscpdchat



Dave Bowman @Maths4ukplc · Mar 22

Purpose is why study mathematics? Can be because needed for chosen career or need to gain entry to their chosen next stage and or needed for everyday living. Don't focus on grades instead learning what they have chance to #mathscpdchat



Director of Maths @DirectorMaths · Mar 22

This links well to intrinsic vs extrinsic motivation. Do you find students are generally intrinsically motivated or do you find a lot of extrinsic motivation is needed? #mathscpdchat

... this conversation ...



Mr Mattock FCCT NPQSL @MrMattock · Mar 22

Replying to @DirectorMaths

"Dont care" is just another way of saying "have no confidence", at least 9 times out of 10.

Help them get a taste of success, and then more success, and it quickly turns around.



Director of Maths @DirectorMaths · Mar 22

I've been there myself with things- it's better to check out and not try than to fail. What might it take to help students see success? #mathscpdchat



Mr Mattock FCCT NPQSL @MrMattock · Mar 22

Just got to find a bit of maths, any bit of maths, that is at that sweet spot that isnt too easy that they dont feel patronised, but isnt too challenging that they check out. #mathscpdchat

... this conversation about knowing each student's individual maths journey ...



Emma Robson @EJRobson1979 · 16h

Replying to @DirectorMaths

Show them that you are interested in them and their own personal maths journey. Focus on the small wins - let me help you with this (division) you might not care, but I can help you get a little more confident type thing.



Director of Maths @DirectorMaths · 16h

Treating each student as an individual is really important. How do we keep track of each students journey within a large class? #mathscpdchat





Emma Robson @EJRobson1979 · 15h

We have a 'Maths Plan' document they keep in their folders, learners can update throughout the year, focus on what they are strong at, weaker with, and where they are improving.



Director of Maths @DirectorMaths . 15h

This sounds interesting! Is this something that is shared with parents too? #mathscpdchat



Emma Robson @EJRobson1979 · 15h

No it isn't actually, now that's food for thought.



Director of Maths @DirectorMaths · 15h

We have a similar thing after each assessment that is sent home. Some parents won't be interested but even if it only supports a few families we feel it's worth it. #mathscpdchat

... parents were also mentioned in this conversation:



Martyn (He/Him) @martynyeouk · 16h

Replying to @DirectorMaths

Have to help them to see the need to care #mathscpdchat



Director of Maths @DirectorMaths . 16h

Anything in particular you've tried? Is it about helping them see the wins? #mathscpdchat



Martyn (He/Him) @martynyeouk - 16h

Done quite a lot on growth mindset - have used @ClassDojo to help share it #mathscpdchat



Director of Maths @DirectorMaths - 16h

Does that then feed through to parents as well? #mathscpdchat



Martyn (He/Him) @martynyeouk - 16h

Thats certainly something we need to work on - parents need to care! #mathscpdchat

Gemma's Q2 also prompted these comments about generating the curiosity that prompts students to think!



Anthony Shaw @ShawMaths . 16h

Replying to @DirectorMaths

I try to make them think. Use concepts that they have a secure understanding of to explore ideas. Show them that it can be inymteresting, try to engender curiosity. Above all, I love maths, really love maths!





Director of Maths @DirectorMaths - 15h

I like this! Are you saying linking to their prior knowledge helps them to anchor to previous success? #mathscpdchat



Anthony Shaw @ShawMaths · 15h

Not really. It's not about being successful for me. I want the kids to think "what if this..." or "would this work?"

I think there is a danger of linking enjoyment with success. I'm the most happy doing maths when I'm stuck and trying to work something out!

The host's (Gemma's) third question ...



Director of Maths @DirectorMaths . 19h Great responses so far 😄

Q3 - has the pandemic changed the role of a maths teacher? Do you relate differently to students in 2022 than in 2018?

#mathscpdchat



... prompted this discussion ...



Simon Ball @ballyzero · 18h Replying to @DirectorMaths

I think the role of the teacher has had to change generally, not just in maths. We have to be more sensitive to the increased gaps in knowledge, gaps in confidence, and gaps in stamina to last through lessons, even. #mathscpdchat



Director of Maths @DirectorMaths · 18h

Do you think this change is a permanent one? #mathscpdchat

...





Simon Ball @ballyzero · 18h

Big question. I'd like to think 'No', but the change to whatever 'normal' is going to be next is going to take a long while. Students meaningfully affected by Covid-19 are going to go through the system for many years. I'm hopeful the extra care will stick around. #mathscpdchat



Director of Maths @DirectorMaths . 18h

Teachers turning something negative into a positive! #mathscpdchat

... and this conversation ...



Mr Mattock FCCT NPQSL @MrMattock · 19h

Replying to @DirectorMaths

Yes and no

The role of the maths teacher is still to teach maths in a way that allows pupils to make sense of it. That hasnt changed. What has changed for some is what that has to look like in order to cope with what they have been through

#mathscpdchat



Director of Maths @DirectorMaths . 18h

What kind of things that students have "been through" do you think are affecting them most in maths lessons? #mathscpdchat



Mr Mattock FCCT NPQSL @MrMattock · 18h

Everything from lack of structure to learning through to bereavement and trauma. #mathscpdchat

... and this single reply:



Emma Robson @EJRobson1979 · 19h

Replying to @DirectorMaths

Yes! Without a doubt. I have more empathy and am far more patient with my classes. I am also more reflective within my own teaching

Gemma's fourth question ...



Director of Maths @DirectorMaths · 19h

Q4 - What role do parents play in all of this? How can we show students the value of succeeding on maths if this message isn't consistent at home? To what extent is this effective?





... prompted these linked comments ...



Dave Bowman @Maths4ukplc · 19h

Replying to @DirectorMaths

There is a phrase "inoculate students" that I use. If the school environment provides sufficient #YesUCan message then child has their own agency to overcome negatives from wherever they come #mathscpdchat



Director of Maths @DirectorMaths . 19h

A positivity injection! How successful to you think this is being across your lessons/ department? #mathscpdchat

... and these single replies:



Jasmine Etheridge @Miss_Etheridge · 18h

Replying to @DirectorMaths

Invite them to take part. Look at maths for parents to support parents knowing how they can help their child and increase their confidence.



Mary Pardoe @PardoeMary · 19h

Replying to @DirectorMaths

Remember always that students live in a community!

Another very useful slide from Anne Watson's talk, here:

bsrlm.org.uk/conference-key...

(EHSM: European Heritage School Mathematics) #mathscpdchat

Care for community

- support from outside the classroom, constructing a balance between the values and goals of EHSM and local sources of knowledge and need;
- entwining EHSM with other sources of knowledge of space and quantity;
- relationships between local methods and conventional mathematical terms;
- how everyday experiences give purpose and insight into quantification, movement, position and shape;
- the difference between grafting mathematical abstractions onto everyday experiences and recognising abstract structure in everyday experience.

The host's last question ...





Director of Maths @DirectorMaths · 19h

Final question of the night!

In our faculty vision we talk about "championing students". How do you create a culture of care across your faculty/ department/ team/ school?

#mathscpdchat



... prompted a final message from this #mathsCPDchat:



webmathscouk @Dids31 · 19h

Replying to @DirectorMaths

Care as part of the school vision, communicated with staff and students. Model it, live it, challenge it, celebrate it. #mathscpdchat



Director of Maths @DirectorMaths · 19h

Yes! A vision is only impactful if it's lived! No point having it as a lovely message on the website if it's not tangible in the school atmosphere #mathscpdchat