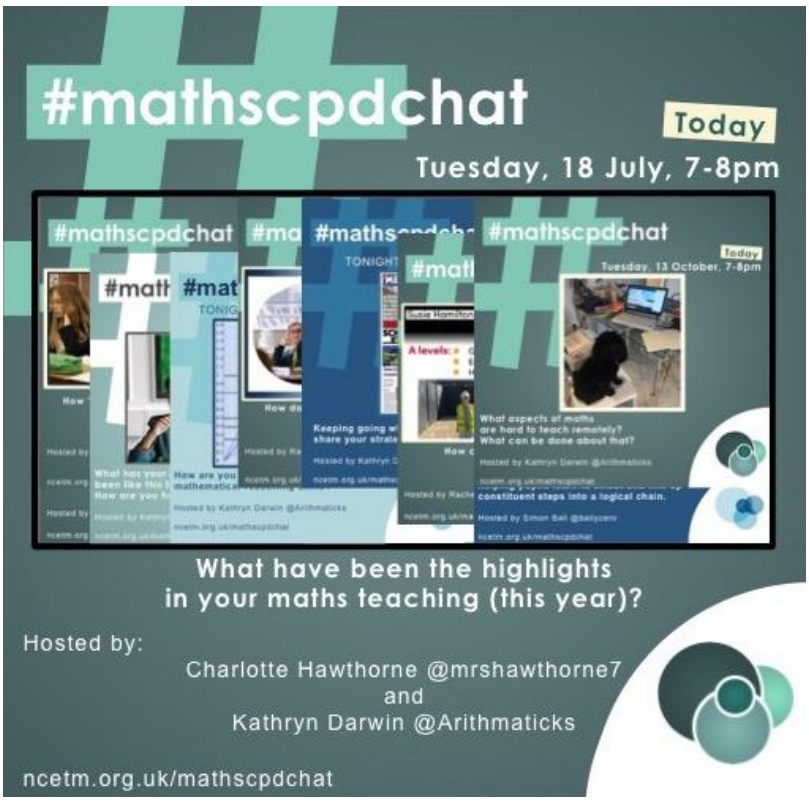
#mathscpdchat 18 July 2023

What have been the highlights in your maths teaching (this year)?

Hosted by Kathryn Darwin and Charlotte Hawthorne

*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:

SketchCPD resources which are free resources created by Charlotte Hawthorne. Her SketchCPD website includes 'Sketchnotes', a wide variety of attractively presented 'Resources' and a blog. It was shared by Charlotte Hawthorne

Register for MEI Deeper Maths which is where you can register for access to the free MEI Deeper Maths resources. The **MEI Deeper Maths Trigonometry Topic Overview** can be downloaded from the bottom of the page. It was shared by Sarah Denison

Checkpoints which are diagnostic maths activities on the NCETM website. These attractive materials are designed to help teachers develop their assessment of students' prior learning for KS3. It was shared by Anthony Shaw

Integrals - Isolating the key ideas which is a resource created by Chris McGrane and located on his Starting Points Maths website. It is a task in which the challenge is to state the appropriate integral-with-limits for each one of a set of images. It was shared by Rob Southern

Average and Range Tiles which is an interactive resource created by Jonathan Hall and located in the 'Manipulatives' section of his MathsBot website. Many different problems can be set up and explored by students/pupils and teachers. It is linked to 'Small data set average problems' on Don Steward's website. It was shared by Jonathan Hall

A simultaneous equations journey from primary to sixth form which is a recent blog by Matt Man in which he describes and discusses a workshop that he delivered in June 2023 on the topic of simultaneous equations. It was shared by Matt Man

Maths Learning Strands which is an attractively presented sequence of images showing how aspects of learning maths may develop from 'Emerging' through 'Evolving', 'Expected', 'Exceeding' to 'Exceptional'. It was shared by Matt Hawes

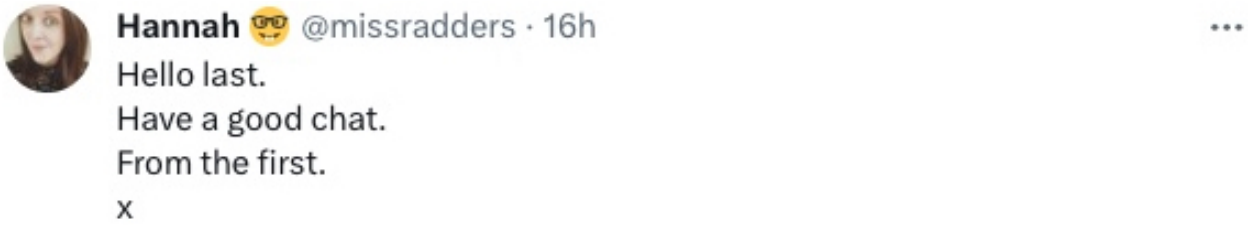
Topical Talk which is a programme from The Economist Educational Foundation which supports weekly discussions about current affairs. They are classroom resources for pupils/students aged 9+. It was shared by The Economist Foundation

An illustrated summary of the discussions in this #mathsCPDchat follows.

Kathryn's welcome message …

… was followed by this reminder:

Hannah Radcliffe (@missradders), was the host of the very first NCETM #mathsCPDchat. The @mathsCPDchat Twitter account, and the #mathsCPDchats, were the 'brainchild' of the NCETM's Director of Communications at that time, Steve McCormack, who established them in 2013. The first NCETM #mathsCPDchat took place, therefore, nearly ten years ago, and teachers have continued to engage in them enthusiastically on every term-time Tuesday evening since then. These facts provide background information for the next tweet that appeared:



There was a reply to Hannah's tweet from Robert Smith …

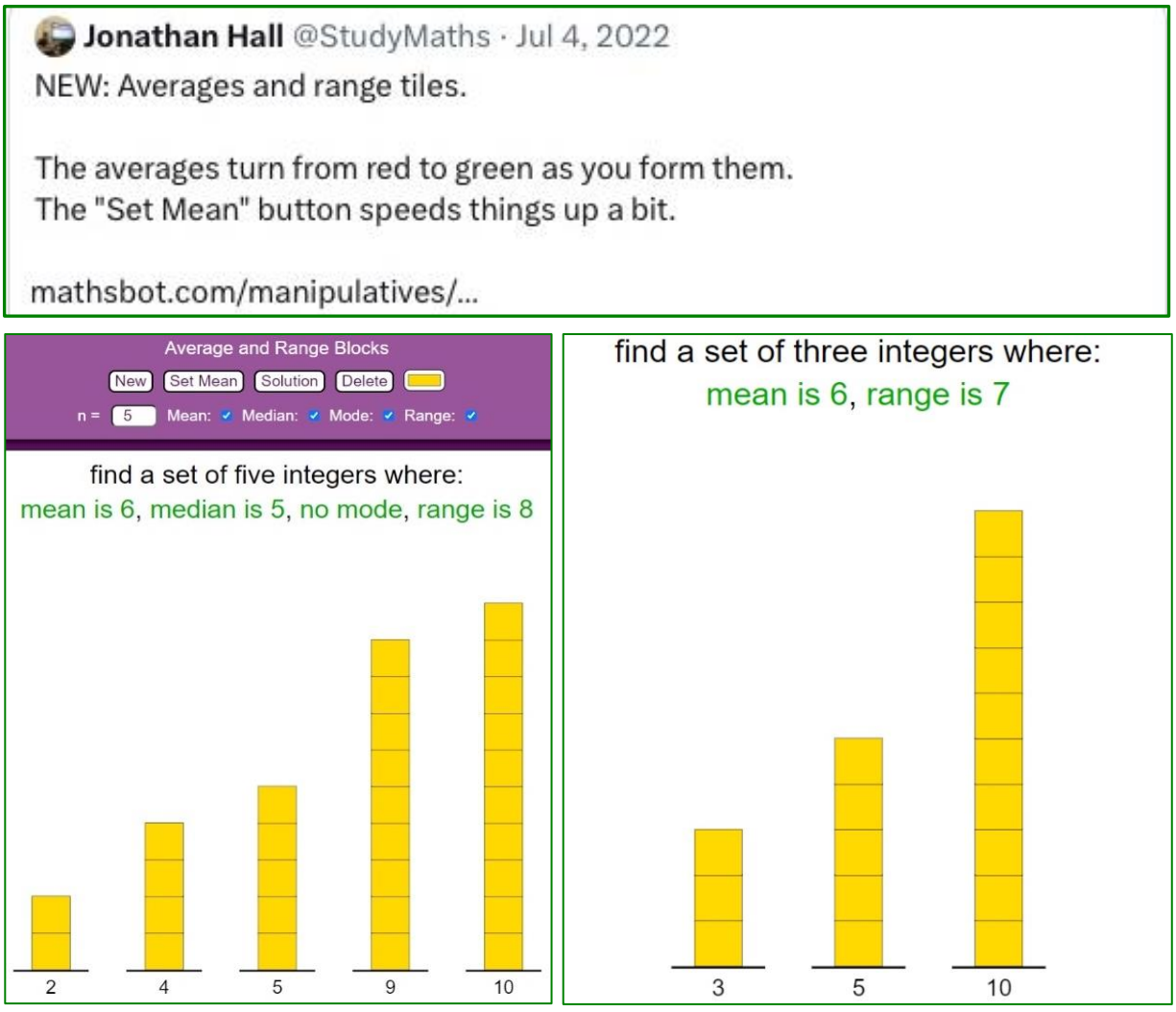
… who refers to the probability that the #mathsCPDchats will continue next term under the joint management of teachers who have enjoyed taking part in them, but independently of the NCETM.

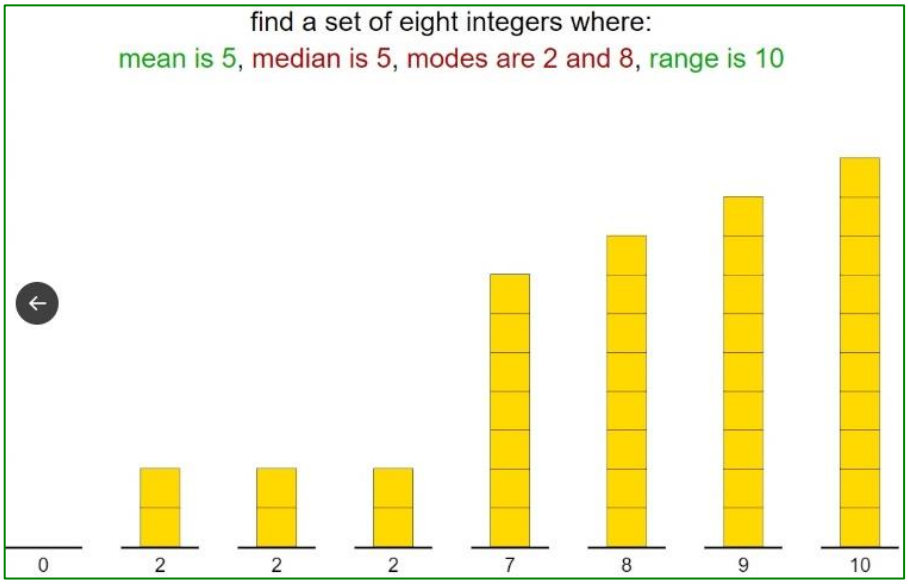
Kathryn then asked the first main question from the hosts …

… which prompted nine conversations, and some 'single' replies, involving about sixty contributions (tweets) altogether.

The first of the nine conversations shown next focuses on an example from a collection/website of useful and popular interactive resources (link provided at top of summary):

(The link to 'Averages and Range Blocks' is in the tweet that Jonathan quoted.)





Kathryn MCCT @Arithmaticks · 17h

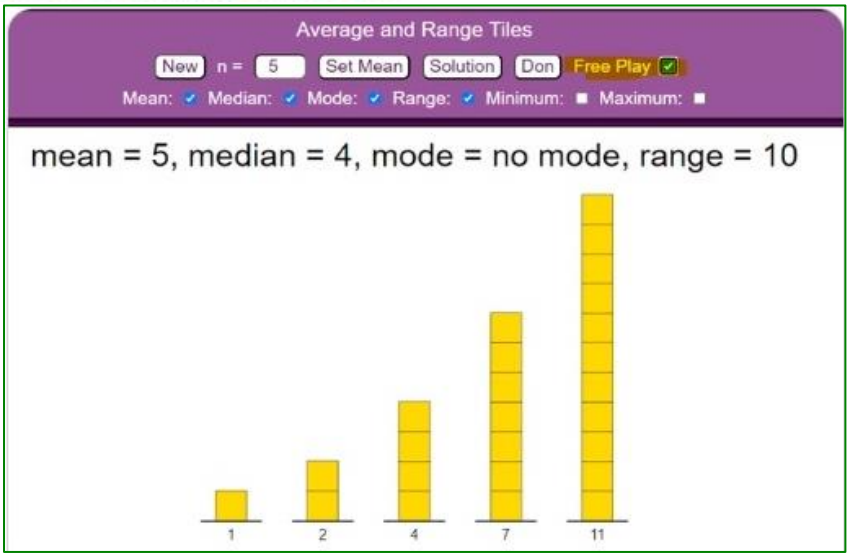
Another classically beautiful King Don idea! Not a single #MathsCPDChat I've ever done goes without us mentioning him!

Jonathan Hall @StudyMaths · 15h

UPDATE: 'Free Play' option added to the Average and Range Tiles.

Lets you model how the averages change as tiles are added, removed or moved around.

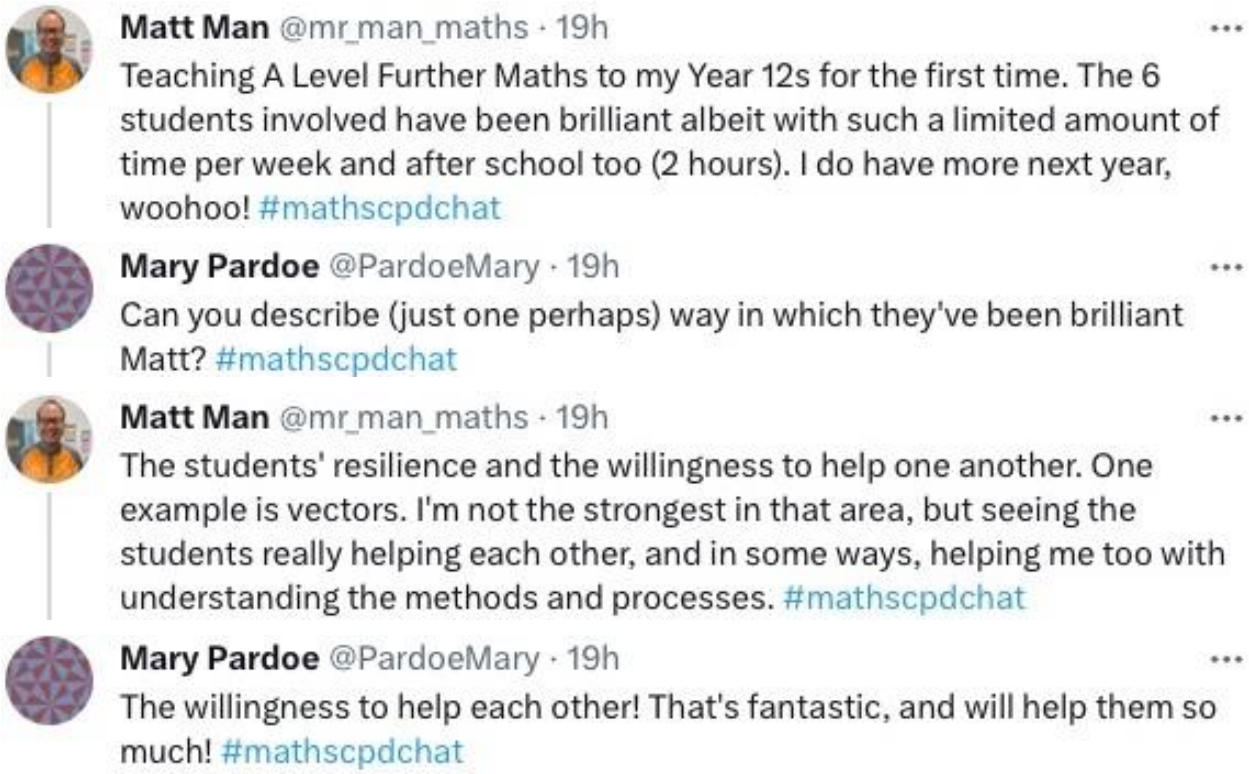
mathsbot.com/manipulatives/...



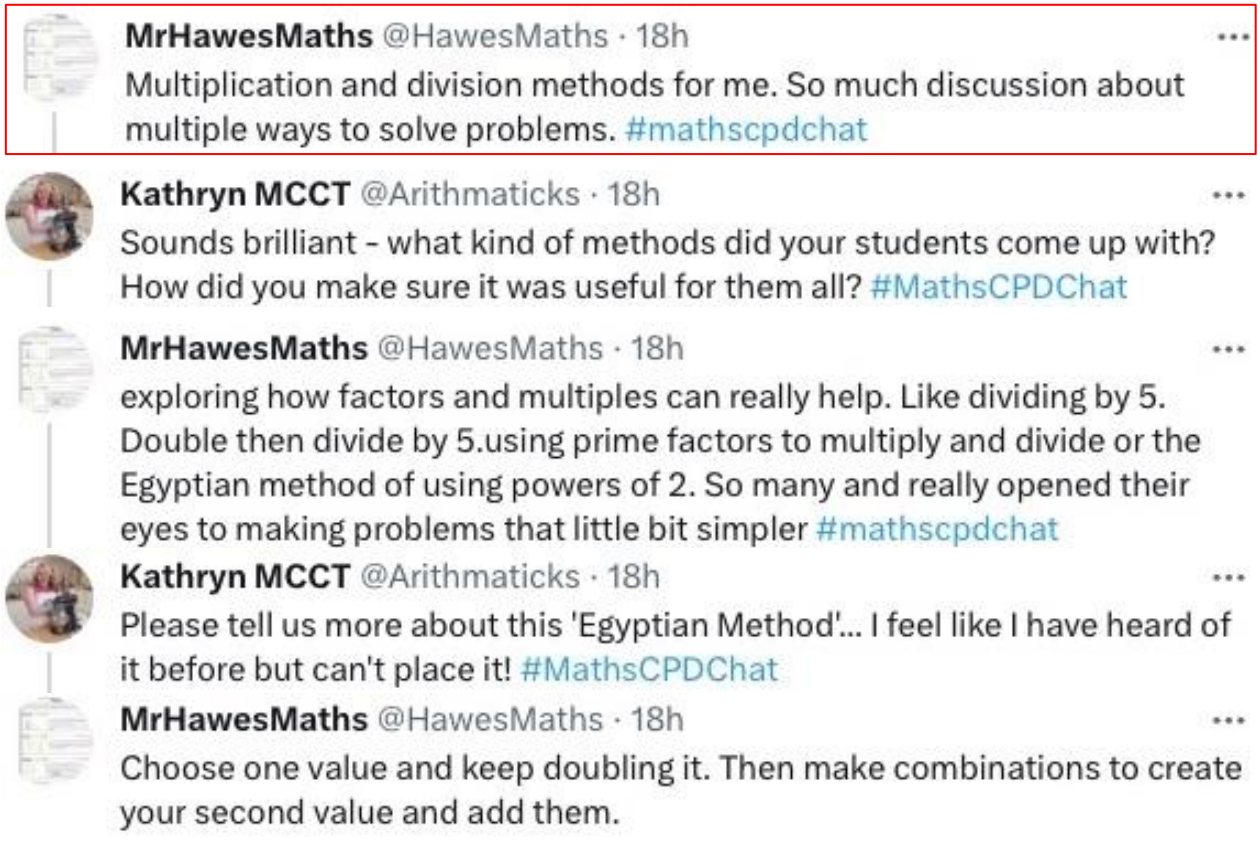
Mary Pardoe @PardoeMary · 1s

This is lovely! Just been playing with it (addictive) ... great for prompting thoughts about different ways of using it in lessons!

The next short 'chat' generated by the hosts' first main question is a reminder that students' resilience and willingness to help one another contributes to the success of maths lessons:



This next discussion prompted thoughts and comments about pupils'/students' ability/readiness to explore/consider/look for different ways to calculate/work-out-results/solve-problems:



Multiplication methods

Key Ideas

Main Notes

As you develop your maths, you will need to become efficient in multiplying more complex numbers. It is important to perfect a method that works for you and keep practising.

Egyptian method 47 X 36 = 1692 ✓

1	36
2	72
4	144
8	288
16	576
32	1152

Add the combination that makes 47
Here it is 32, 8, 4, 2, 1

1152
288
144
72
36
1692

Step by step

- For this method, take one value (here we use 36)
- Double each time to generate some multiples (in powers of 2)
- Find a combination that will add to make your second value (47)
- Add these values together for your solution

- It doesn't matter which value you start with. Some numbers might be easier to work with than others. See the same calculation below but using 47 instead of 36

47 X 36 = 1692 ✓

1	47
2	94
4	188
8	376
16	752
32	1504

Add the combination that makes 36
Here it is 32 and 4

1504
188
1692

- For this method, we started by doubling 47
- The combination that made 36 was 4 and 32
- Adding their values of 188 and 1504 gave 1692

TRY THE METHOD WITH THESE ONES TO DEVELOP YOUR SKILLS

7 × 7
8 × 10
7 × 4
8 × 12
4 × 9
9 × 12
11 × 2
9 × 9
8 × 5
12 × 9

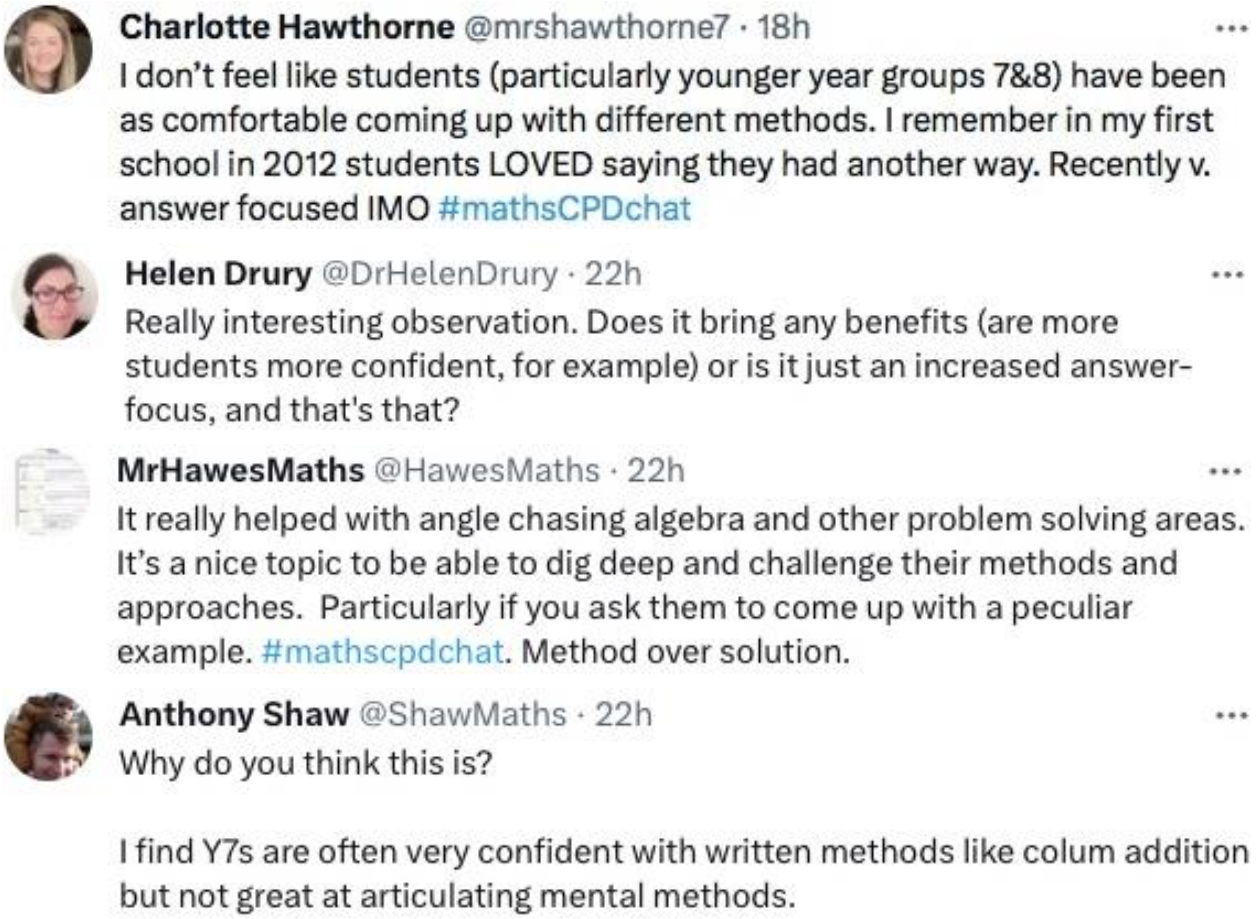
TRY THESE TO STRENGTHEN AND DEEPEN YOUR UNDERSTANDING

42 × 31
31 × 25
17 × 37
42 × 39
23 × 43
45 × 15
22 × 28
46 × 31
23 × 31
23 × 62

Important things to notes

- The more confident you are in your times tables, the more efficient you will become. Here you really need to be able to double numbers effectively
- Double check your answers each time. Mistakes can happen!
- The more you practise, the better you will become
- Remember, you are likely to use the same method for larger or more complex calculations (involving decimals) or percentage calculations. The method is unlikely to change. Just how you present your answer

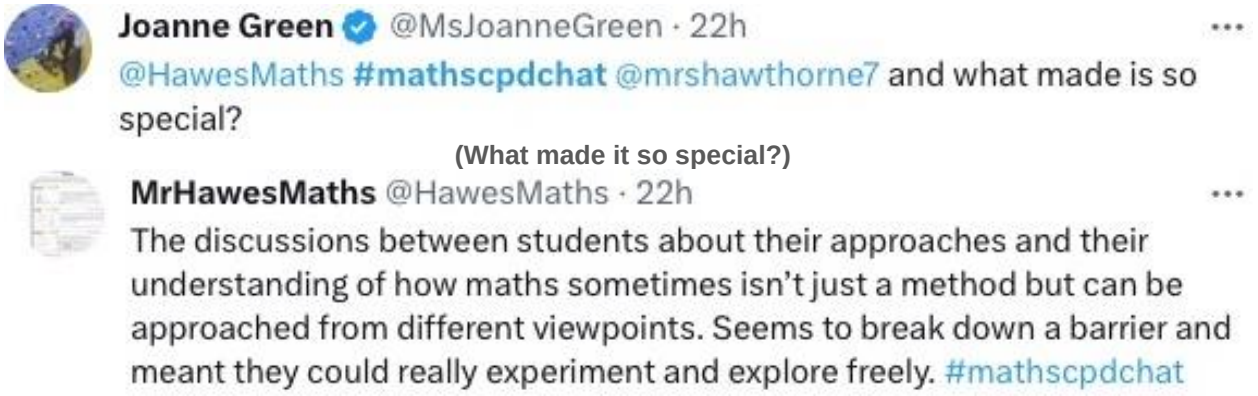
Reflection:



Matt Hawes' reply (already shown above) to the hosts' first main question …

> What is the best lesson/suite of lessons you have taught this year? What made them so good?

… prompted a question from another contributor which provided an opportunity for more clarification by Matt (MrHawesMaths):



Rob Southern's reply to the hosts' question prompted him (in the conversation shown next) to share a task to which students also responded by exploring alternative approaches:

Rob Southern @mrsouthernmaths · 19h

Y10: Constructions! They get a lot of bad press, but the Mathspad resources are superb.

Y12: Integration. We used this lovely activity from @ChrisMcGrane84 They came up with so many different approaches and some beautiful links to graphical transformations

Rob Southern @mrsouthernmaths · 19h

Oh and graphical transformations, but I'm sure everyone is bored of me talking about them.

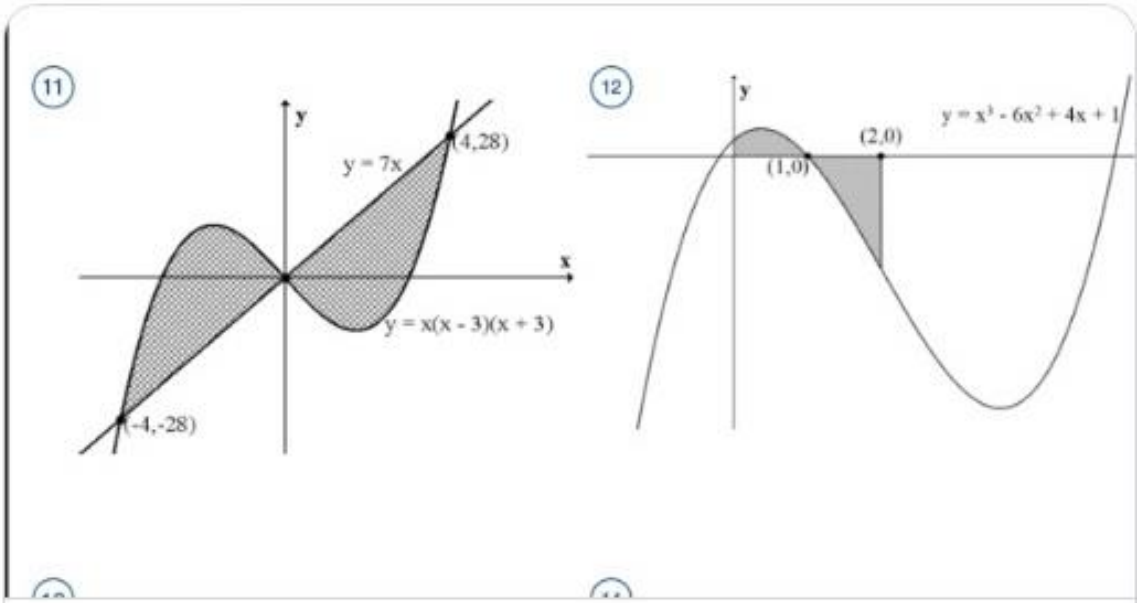
Kathryn MCCT @Arithmaticks · 19h

Goes to find the @MathsPadNicola resources on constructions immediately...
Which resource from @ChrisMcGrane84 !?
#MathsCPDChat

Rob Southern @mrsouthernmaths · 18h

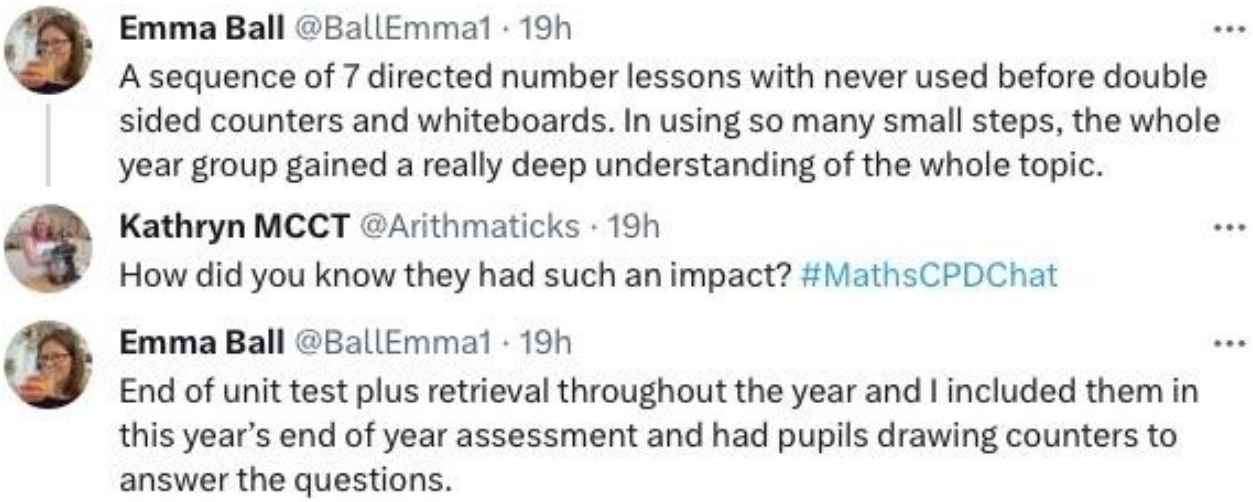
This one.
startingpointsmaths.com/2023/01/14/int...

The idea is to identify the integral without performing the calculations but we had lots of fun doing them a variety of different ways.



startingpointsmaths.com
Integrals – Isolating the key ideas
In this task all the pupils need to do is write down the integrals with limits. I won't ask them to go on and find the areas in this one. We ...

This was another short conversation in response to the first question:



One of the two hosts responded to their question posted by the other host:

More Squares

1. Find the **area** or **side length** of these squares, giving your answers correct to 2 decimal places where necessary.

Side length = 3cm

7cm

____ cm

7.5cm

____ cm

____ cm

2. The **area** of the first two squares **together** is equal to the area of the larger square. What is the side length of the larger square?


____ cm

3. The following problems work in the same way; the compound shape made of squares has an **area** equal to the area of the larger square on the right.
Find the missing lengths in each diagram.

a)


___ cm

b)


___ cm

c)


17 cm

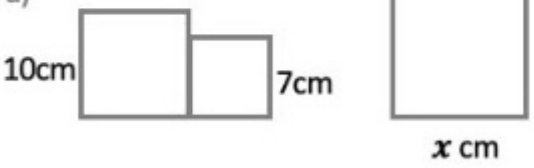
d)


53 cm

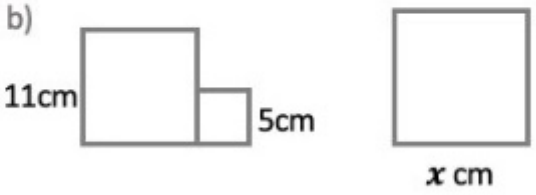
Just like the previous task, the **compound shape** made of squares has an **area** equal to the larger square.
Find the missing lengths, labelled x, in each diagram correct to 1.d.p.

(diagrams are **not** drawn to scale)

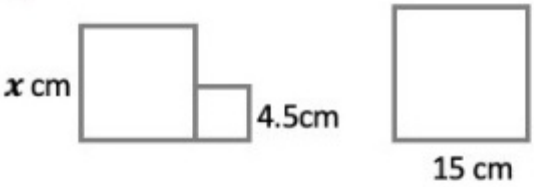
a)



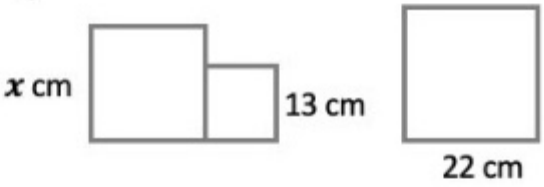
b)



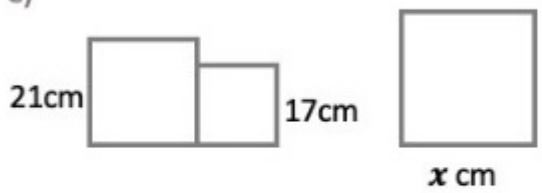
c)



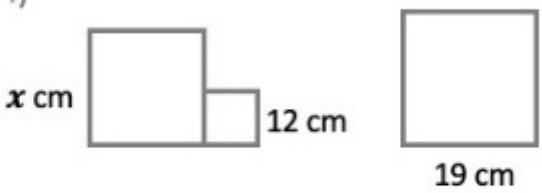
d)



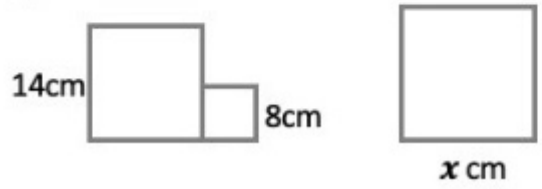
e)



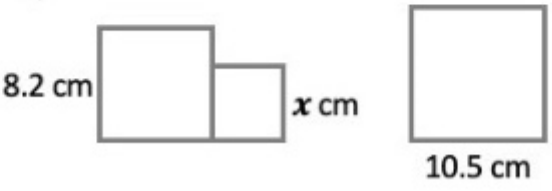
f)



g)



h)



Below is the working out for g) and h)

$$x^2 = 14^2 + 8^2$$
$$x = \sqrt{14^2 + 8^2}$$
$$x = \quad \text{cm}$$

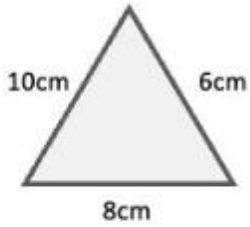
$$10.5^2 = 8.2^2 + x^2$$
$$x^2 = 10.5^2 - 8.2^2$$
$$x = \sqrt{10.5^2 - 8.2^2}$$
$$x = \quad \text{cm}$$

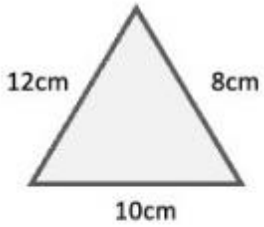
In your books, show the working out for e) and f) in the same way

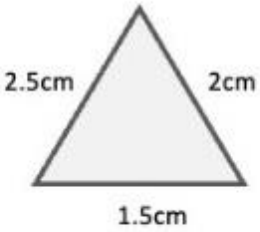
Terrible Triangles

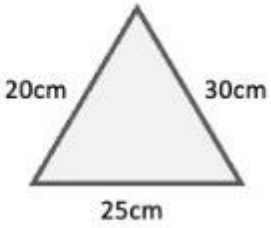
These triangles are not *in any way* drawn accurately!
In fact, the only thing correct is that they have three straight sides!

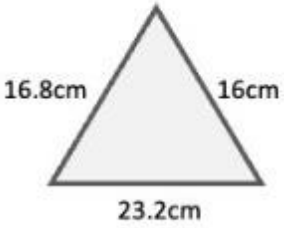
Given the measurements of the sides work out if, when drawn accurately:
- the triangles would be **right angled** and,
- if they are, mark on **where** the right angle would be.

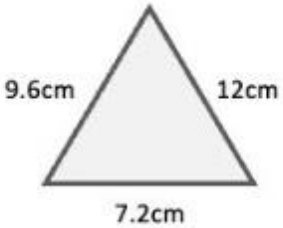






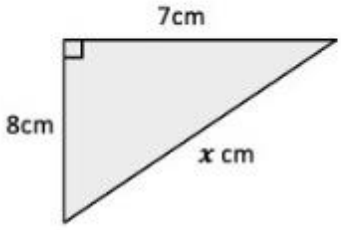






Whose working out is it anyway?

Match the diagram to the correct working out.

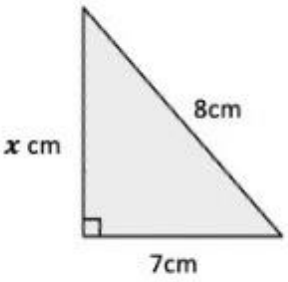


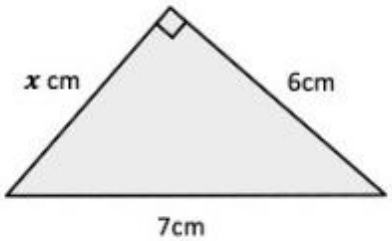
A $6^2 + 7^2 = x^2$

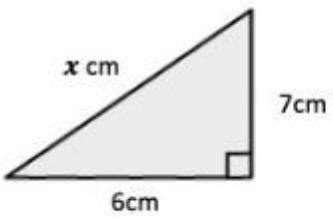
B $7^2 - 6^2 = x^2$

C $8^2 + 7^2 = x^2$

D $8^2 - 7^2 = x^2$







Karen @karenshancock · 19h

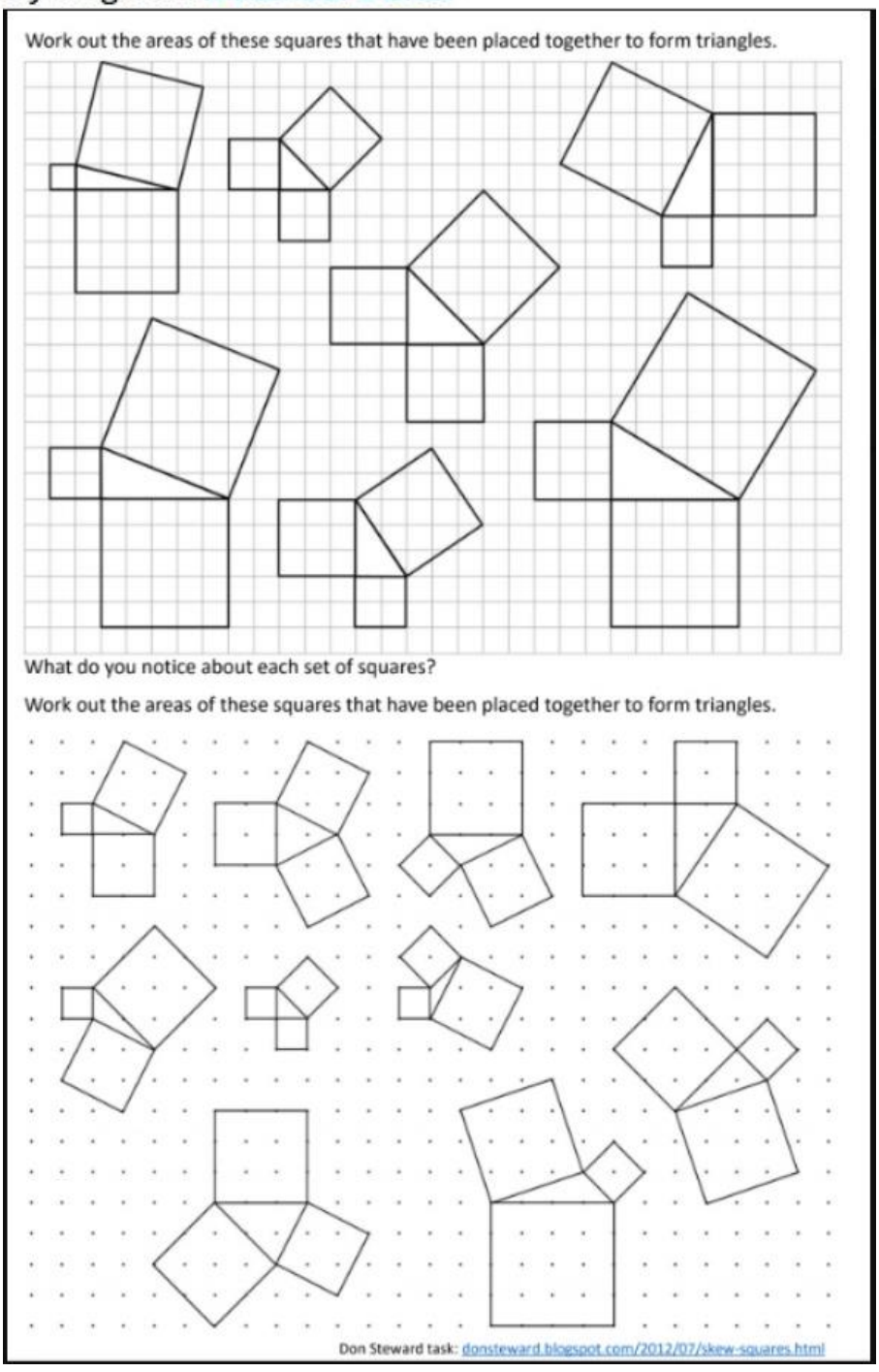
Love this... The Deputy head who teaches the parallel class to me complemented me on the introduction to Pythagoras that I planned for our classes... I did you give you credit! #MathsCPDChat

Kathryn MCCT @Arithmaticks · 19h

Our external visitor for our deep dive also really liked it! #MathsCPDChat

Kathryn MCCT @Arithmaticks · 20h

The Skew Squares bit between these is also just a magical moment. Lovely King Don! #MathsCPDChat



The next short exchange includes a reference to GeoGebra, and a reminder that including the hashtag in all tweets is necessary if the #mathsCPDchat is to be as helpful as possible:

Anthony Shaw @ShawMaths · 20h

Trig

I've been playing with unit circles and similar triangles for years but it felt like it clicked this year. Made it simpler and kids liked it.

Kathryn MCCT @Arithmaticks · 20h

Wahey! Similar to @mrshawthorne7 then! Can you share any resources that particularly made it successful? #MathsCPDChat

Anthony Shaw @ShawMaths · 20h

Most was just a bit of GeoGebra, a whiteboard pen and me. But I made a gap fill using "unit triangles" that makes finding the hypotenuse easier.

Anthony Shaw @ShawMaths · 20h

#mathscpdchat (I'm rubbish at tagging these!)

Kathryn MCCT @Arithmaticks · 20h

In this conversation the focus was on students and teachers using algebra tiles …

Lizi Pepper @mathspeptalk · 21h

Algebraic manipulation using algebra tiles! Particularly completing the square, now they know why to half the coefficient of x! #mathscpdchat

Kathryn MCCT @Arithmaticks · 21h

The first time someone showed me this (I think @StudyMaths) I was just STUNNED! Made me fall in love with algebra tiles. #MathsCPDChat

Charlotte Hawthorne @mrshawthorne7 · 20h

Same! Proper wow moment. I love sharing with trainees but usually @KatefsmathsPGCE gets there before me 😂 #mathsCPDchat

Jacob @WonderingMaths · 20h
Such a great tool for student understanding with completing the square!

Mary Pardoe @PardoeMary · 21h
Can you remember anything that students *said* or did that made you think the algebra tiles 'made all the difference' Lizi? #mathscpdchat

Lizi Pepper @mathspeptalk · 21h
Yesss! After removing them, expanding brackets, one of them literally described the rectangle aloud when doing one as retrieval at a much later date! He had the image there in his head! And no silly mistakes adding instead of multiplying, finding factorising easier! #mathscpdchat

Mary Pardoe @PardoeMary · 21h
At a much later date! Wow ... that's SO worth noting! #mathscpdchat

… and in the next chat thoughts were about helping students use time-telling/recording conventions with understanding and confidence:

Catherine Edwards @Edwards08C · 21h
I've been loving teaching entry level this year. Really enjoyed teaching telling the time, partly because I enjoyed researching the sequence to teach and also seeing the kids succeed. #mathsCPDchat

Kathryn MCCT @Arithmaticks · 21h
Tell us more about the sequencing for the time lessons! I have never had to teach it but I think SO many students would benefit. Many of them have no idea about time when I say things like "20 to 1" instead of 12:40. #MathsCPDChat

Catherine Edwards @Edwards08C · 21h
The vocab practice was huge, making sure we used all the different ways of saying and writing time. Lots of matching and fill in the gap.
Also used a straight number line before curving it into a clock too. #mathscpdchat

Mary Pardoe @PardoeMary · 21h
Interesting Catherine! What worked particularly well? #mathscpdchat

Catherine Edwards @Edwards08C · 21h
Lots and lots of different representations of clock faces with multiple colours for to and past etc. (have a high proportion of EAL too)
Starting with the hour hand only then minutes. #mathscpdchat

These were the remaining responses to the first main question of this #mathsCPDchat:

What is the best lesson/suite of lessons you have taught this year? What made them so good?

Robert J Smith @RJS2212 · 21h
I am sure I here @StudyMaths quote John Mason all the time about this... Now, if only I could remember what Jonny says 🤦‍♂️🤦‍♂️🤦‍♂️

Claire Webster @polomad20 · 19h
Algebraic fractions... loved it for so many reasons

Economist Foundation @Econ_Foundation · 17h
We're excited to join the last #mathscpdchat of the academic year! A huge highlight for us was our recent Special Edition on numeracy in the news. It's been great to hear how students have been getting on with the activities and the confidence they've built across the lessons.... Show more

Economist Foundation @Econ_Foundation · 17h
Another highlight was National Numeracy Day 2023! It was great to see so many teachers highlight the importance of building maths confidence in the classroom and beyond! What's been your #MathsMoment? #mathscpdchat #Learning

The second main question …

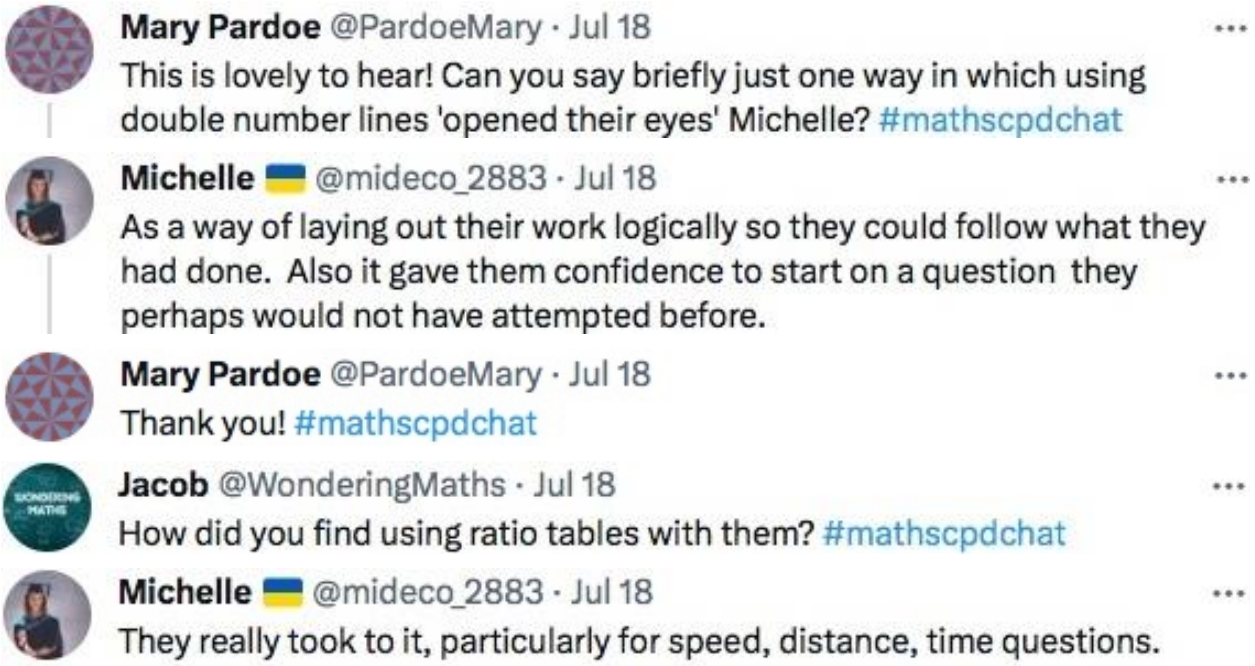
Charlotte Hawthorne @mrshawthorne7 · Jul 18
Next question of the evening

What new things have you tried in the classroom that have been successful?

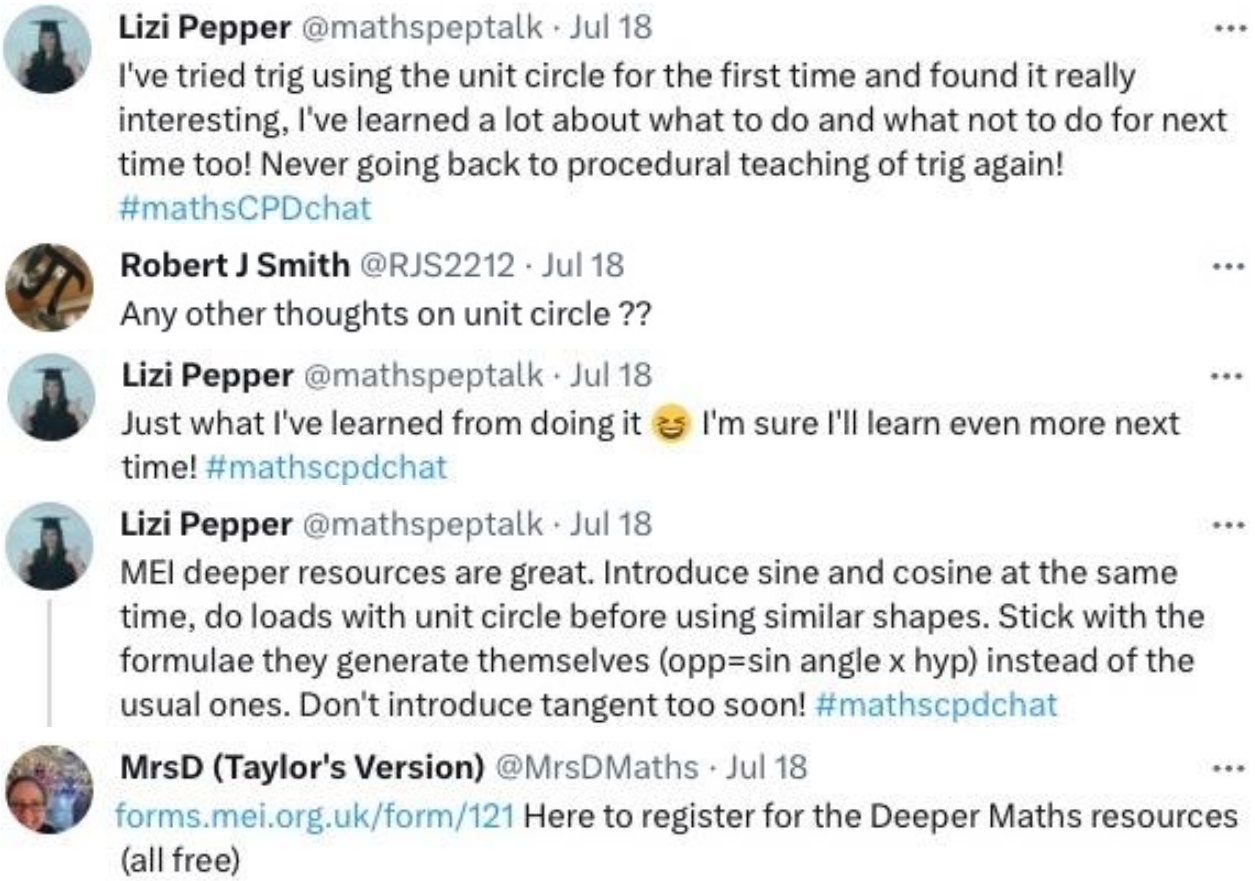
#mathsCPDchat

… again prompted several (eight) conversations, and some single replies. This next one was about '<u>opening a whole new version of maths</u>' for some students:

Michelle 🇺🇦 @mideco_2883 · Jul 18
Bar modelling, ratio tables and double number lines with my Resit students. It was like opening a whole new version of maths to some of them. Seeing their confidence grow was amazing! #mathscpdchat

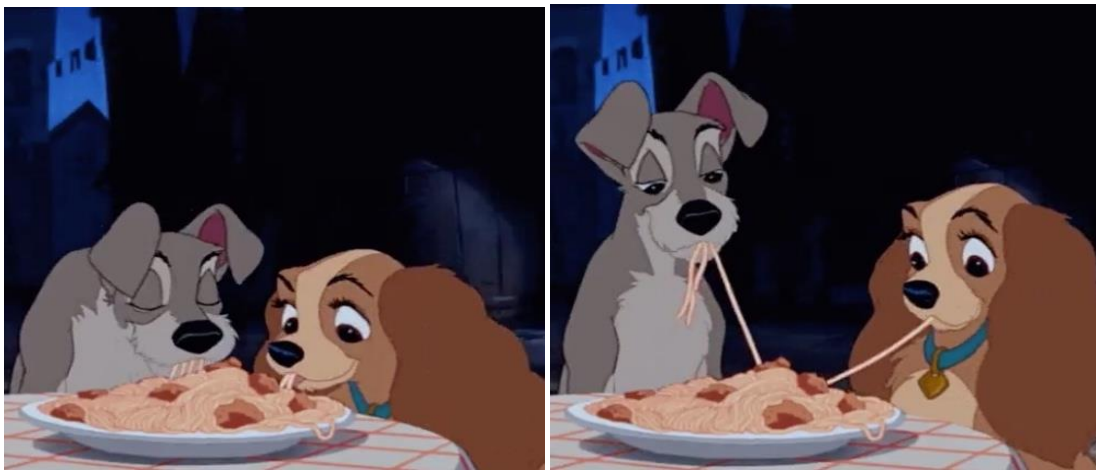


In the long conversation shown next positive consequences of using the MEI's *Deeper Maths* resources are discussed, as is spaghetti, and benefits of sometimes working with teachers from other schools (photographs of a session led by a #mathsCPDchat contributor/host, Matt Man, are included from a tweet that he quoted):



Matt Man @mr_man_maths · Jul 18
Oh trigonometry and spaghetti and unit circle resource from @Integral_Maths and @MEIMaths. The students found it so useful! #mathscpdchat

Kathryn MCCT @Arithmaticks · Jul 18
I need to find this now... spaghetti?! Please tell me they made a joke about the unit circle being a giant meatball...? (And also why it is pedagogically brilliant, obviously!) #MathsCPDChat



Charlotte Hawthorne @mrshawthorne7 · Jul 18
You've never done a spaghetti trig graph? 😱 #mathsCPDchat

Karen @karenshancock · Jul 18
Phew - I was worried it had died out. Pleased to see it hasn't #MathsCPDChat

Kathryn MCCT @Arithmaticks · Jul 18
NO!? WHAT?! #MathsCPDChat

Karen @karenshancock · Jul 18
I've got a worksheet somewhere if you can't find the webpage... give me a mo... #MathsCPDChat

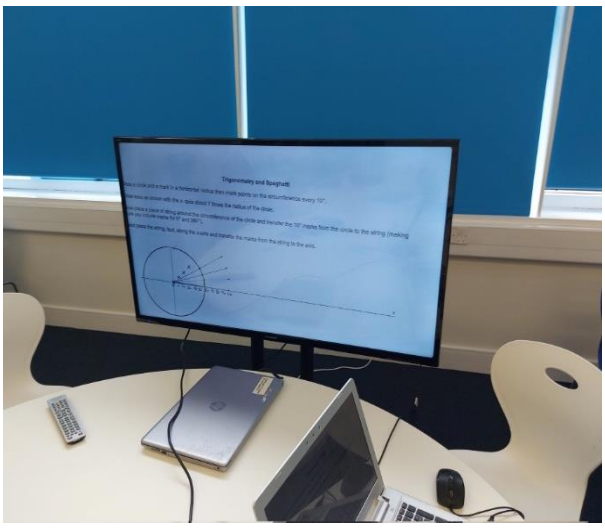
Karen @karenshancock · Jul 18
Oh, google will be your friend - there's loads out there "Spaghetti Trig" - use Sellotape to stick down the spaghetti - and if if you draw a small circle you can get teh tangent graph by creating tangents which is nice. #MathsCPDChat

Kathryn MCCT @Arithmaticks · Jul 18
My mind is blown. #MathsCPDChat

Matt Man @mr_man_maths · Jul 18

Here it is @Arithmaticks, I did this as part of one of the workshop sessions for @GLOWMaths **#mathscpdchat**

> **NBHS Maths** @NBHSMaths · Feb 15
>
> Following on from the morning, Mr Man used the ideas from teaching Year 12 on trigonometry and tested this with colleagues from @BaxterCollege and @StourportHigh for @GLOWMaths. Lots of probing discussions and ideas shared to be taken to their classrooms. @NorthBromsgrove



(This is the tweet that Matt quoted.)

Matt added the next two comments:

Matt Man @mr_man_maths · Jul 18

Being an LLME for "Developing A Level pedagogy" for @NCETM @GLOWMaths. It has really helped me in 1. Leading high quality CPD to colleagues from different schools and 2. Helped me to really reflect on my A Level teaching which leads to better results. #mathscpdchat

Matt Man @mr_man_maths · Jul 18

Another thing is continuing to embed A Level teaching right down to GCSEs and increasing the student's belief and confidence that actually the gap between GCSE and A Level is not as big as it seems. Reminds me back to one of the earlier #mathscpdchat that I led!

The use of individual (mini) whiteboards was discussed in the next thread:

Conor Jones @conorjone93 · Jul 18

Getting students to write down examples right at the end of the lesson rather than as I am teaching/after I have modelled an example. I felt like students get more time to practice and are more focused when I am teaching. Will do more of this in Sept! #mathsCPDchat

Jacob @WonderingMaths · Jul 18

This sounds great! Will have to try it.

Conor Jones @conorjone93 · Jul 18

It's also meant they are using whiteboards so much more than they were previously, which has developed their abilities to try things out without worrying about making mistakes! #mathsCPDchat

Mary Pardoe @PardoeMary · Jul 18

Do they look at each others whiteboards much Conor? I often wonder about that, and if so what effect does it have on them (how do they react to what others put on their boards?)? #mathscpdchat

Conor Jones @conorjone93 · Jul 18

Absolutley they do, paticularly at the start! But I feel the more used to a low-pressure environment when it comes to attempting "your turn" type questions they then become more willing to try themselves. This hopefully builds confidence in themselves! #mathsCPDchat

Mary Pardoe @PardoeMary · Jul 18

Great ... and very interesting Conor! Thanks! #mathscpdchat

Homework was the subject of this conversation:

Karen @karenshancock · Jul 18

A lot more providing of answers to homework sheets (we don't currently do online homework) and then Spot test in lesson 7 days later on a couple of questions from the homework. Emphasis on performance in spot test not on homework sheet. #mathsCPDchat

MrHawesMaths @HawesMaths · Jul 18

I so do this with OneNote. Students can work through the tasks and then assess their work straight away. Prints great discussions with pupils when we sit down to identify the mistake/misconception. Early intervention is great #mathscpdchat

Kathryn MCCT @Arithmaticks · Jul 18

Interesting! How have students responded to this? #MathsCPDChat

Karen @karenshancock · Jul 18

Most classes fine. One class needed some support to get the idea... To the extent that they needed two possible answers for each question for a few weeks to help them realise they had to do the work and then check the answer! #MathsCPDChat

Kathryn MCCT @Arithmaticks · Jul 18

I was just going to say, with some classes you run the risk of them opting out with something like this, but just a bit of MCQ resolved that? #MathsCPDChat

Karen @karenshancock · Jul 18

Yes, I find it helps if you then pop one or two of the questions from the homework sheets on an early assessment too. Makes the point that we're trying to make. The best you can hope for is the questions you've done before and got right come up on the tests. #MathsCPDChat

Kathryn MCCT @Arithmaticks · Jul 18

Interesting... do you keep track of who is doing the homework then? Or just hope they see that it is a helpful thing to do? #MathsCPDChat

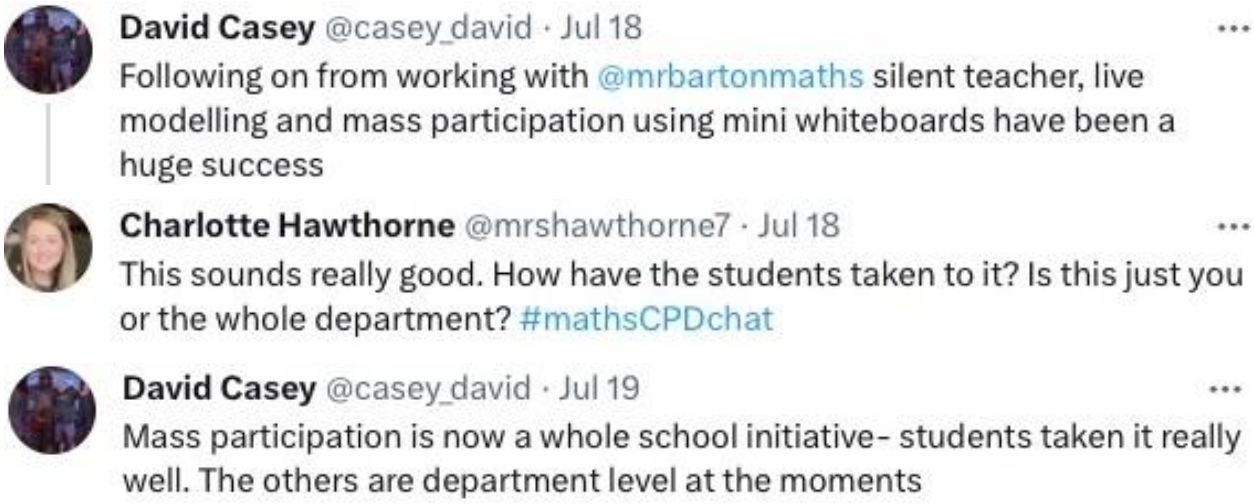
Karen @karenshancock · Jul 18

We expect them to hand in the homework too. Marked and corrected. The spot test is to encourage them not to copy, or if someone else helps them to make sure they understand the help they've been given. #MathsCPDChat

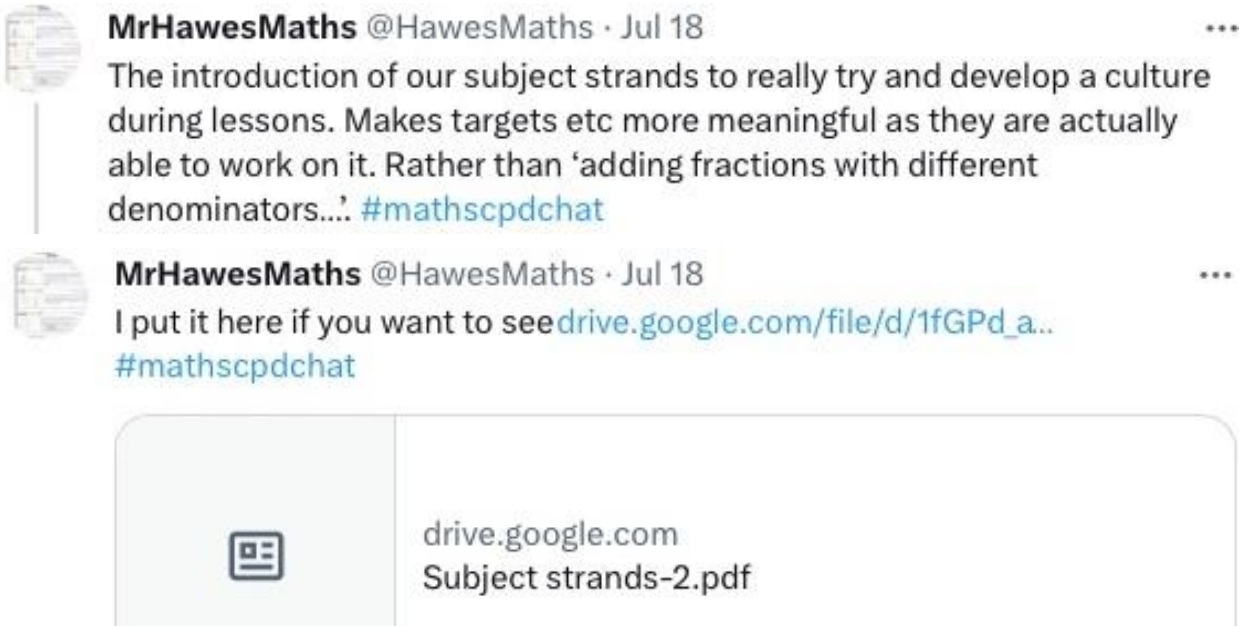
Kathryn MCCT @Arithmaticks · Jul 18

I like this a lot! Thank you for sharing #MathsCPDChat

Mini-whiteboards were mentioned again in the following interchange:

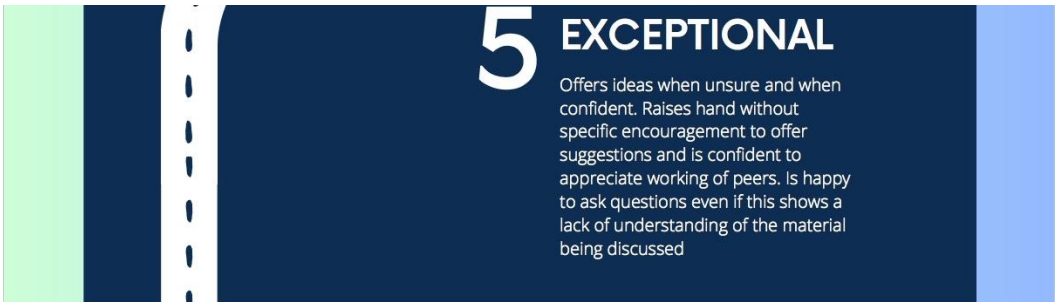


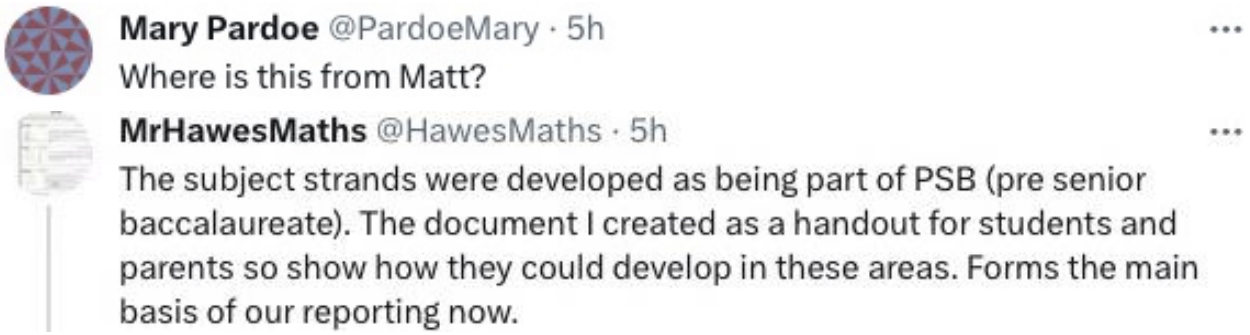
Matt Hawes shared an enterprise designed to help students develop their skills in some aspects of learning and doing mathematics, and thus shift the emphasis, for students and teachers, away from merely 'ploughing through' topics:



The six 'subject strands' (in the resource shared in the tweet shown above) are: Mathematical Knowledge (Number sense and fluency), Contributions in discussions (Making mathematical connections), Problem Solving (conceptual understanding), Communication and Reasoning (Spoken and written forms), Perseverance (Logical and analytical approaches leading to independence, and Reviewing and Improving (Leading to independence). In each strand a short paragraph indicates the meaning of each of the descriptions, which are 'Emerging, Evolving, Expected, Exceeding and Exceptional'. We show one of the strands next, as an example:

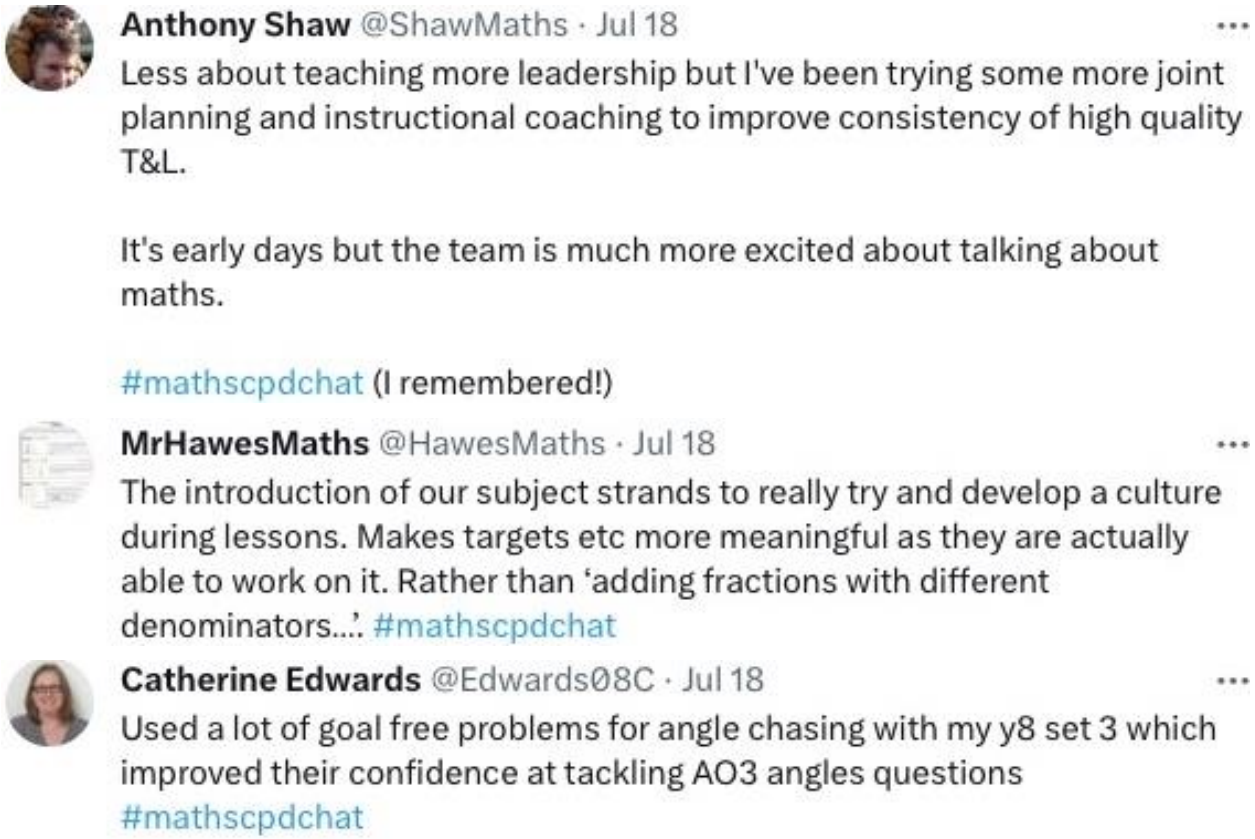

CONTRIBUTIONS IN DISCUSSIONS
(MAKING MATHEMATICAL CONNECTIONS)
1
EMERGING
Prefers to listen to the discussion and is yet to contribute ideas preferring to wait for a solid explanation
2
EVOLVING
Shares ideas when asked and confident that ideas or solutions are correct
3
EXPECTED
Offers ideas independently when confident they are correct
4
EXCEEDING
Offers ideas even when unsure as well as when confident. Raises hand without specific encouragement to offer suggestions and is able and happy to appreciate working of peers





The 'single' replies to the second question are shown next:

What new things have you tried in the classroom that have been successful?



Nyhan @anthhanson · Jul 19

Getting rid of all wall displays and surrounding my room with huge whiteboards. Getting the ss to problem solve in pairs. Person holding the pen takes instruction from the other. 90 min lesson broke up with 2 whiteboard slots lasting 20 mins each. Misconceptions are v visible

Mrs Gilmour @BusyMrsG · Jul 19

Bar modelling and the use of manipulatives in maths especially algebra tiles!

Joanne Green @MsJoanneGreen · Jul 18

@mrshawthorne7 because I travel so much, using a ruler in art class never ceases to amaze me. So many pupils don't realise it's ok to do that. @Arithmaticks **#mathscpdchat** Mental maths with year 7 when doing angles and also algebra. That was great, another proud moment.

Jacob @WonderingMaths · Jul 18

Variation with topics like expanding double brackets. Thinking carefully about the examples that I use and questions that I give to pre-empt any misconceptions. #mathsCPDchat

Educator Supe @ShakinthatChalk · Jul 18

A form of flipped learning using @SparxMaths and iPads where I set the class of a series of unit codes and teach only when help is requested. They often was individually with occasional whole class teaching if common themes emerged.

The hosts' third main question …

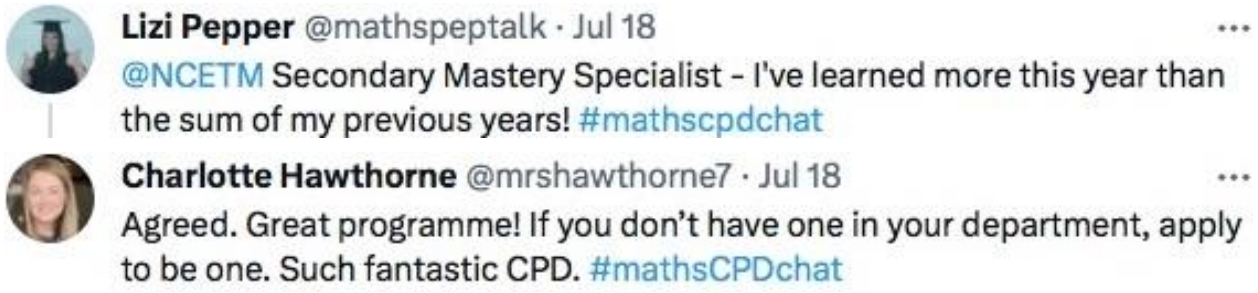
Charlotte Hawthorne @mrshawthorne7 · Jul 18

It's time for question number 3 in our reflection of 2022-23 in maths teaching. @Arithmaticks and I would love to know...

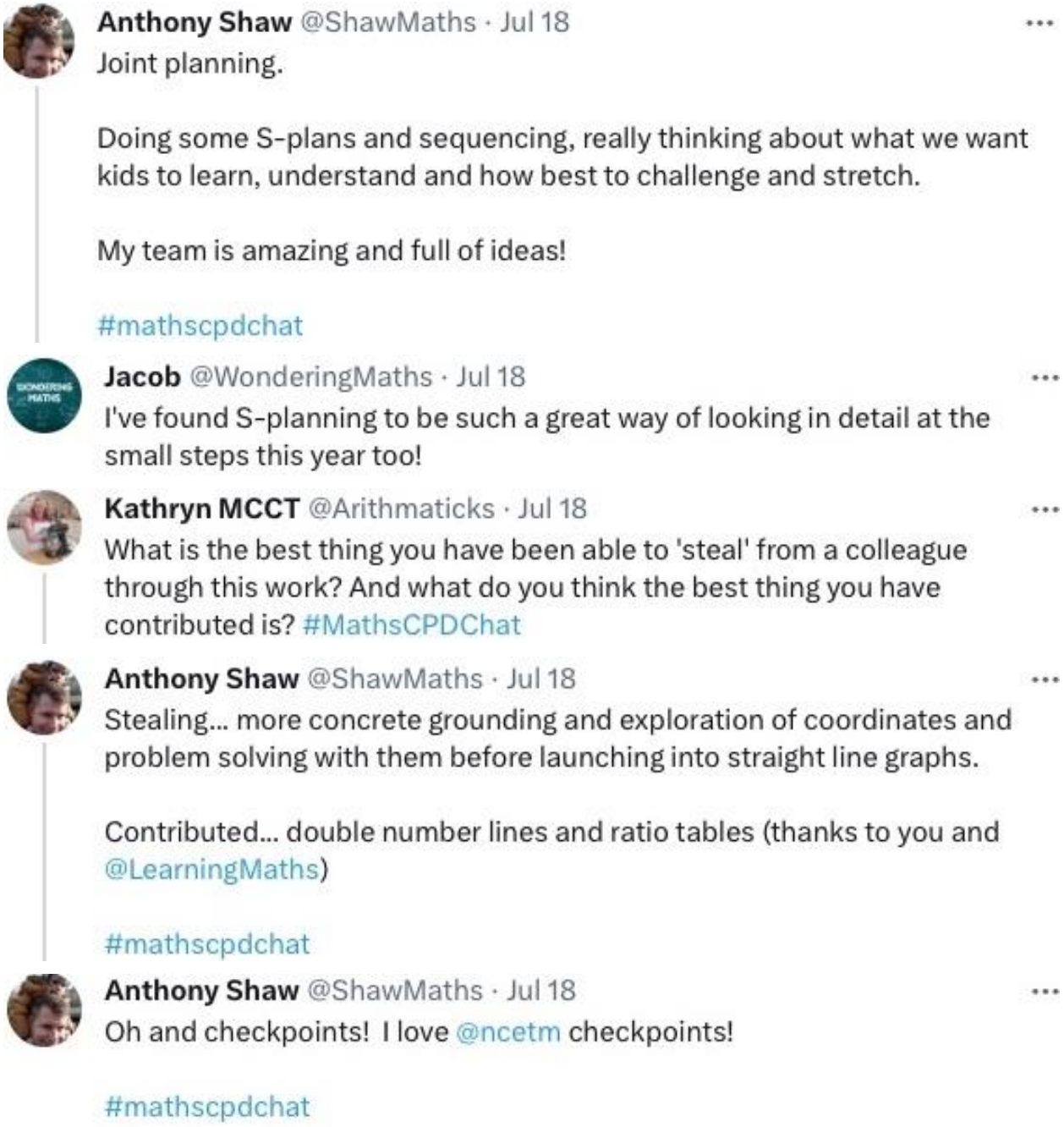
What is the best CPD you have done this year? How did it change your practice?

#mathsCPDchat

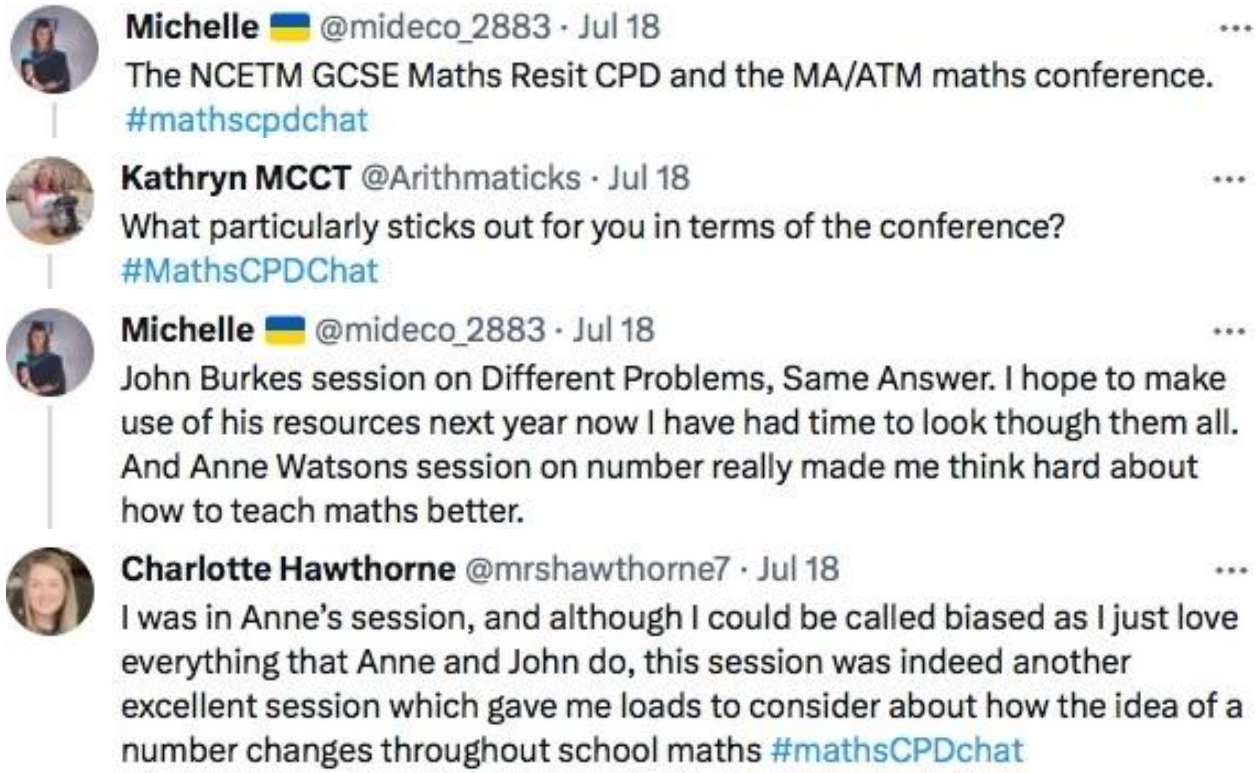
… again prompted several conversations and single replies. Working to become a Secondary Mastery Specialist was mentioned …



… and 'joint' planning and the NCETM Checkpoints were highlights:



Other 'sources' of CPD experienced as effective included a Maths Hub Work Group and the subject associations:

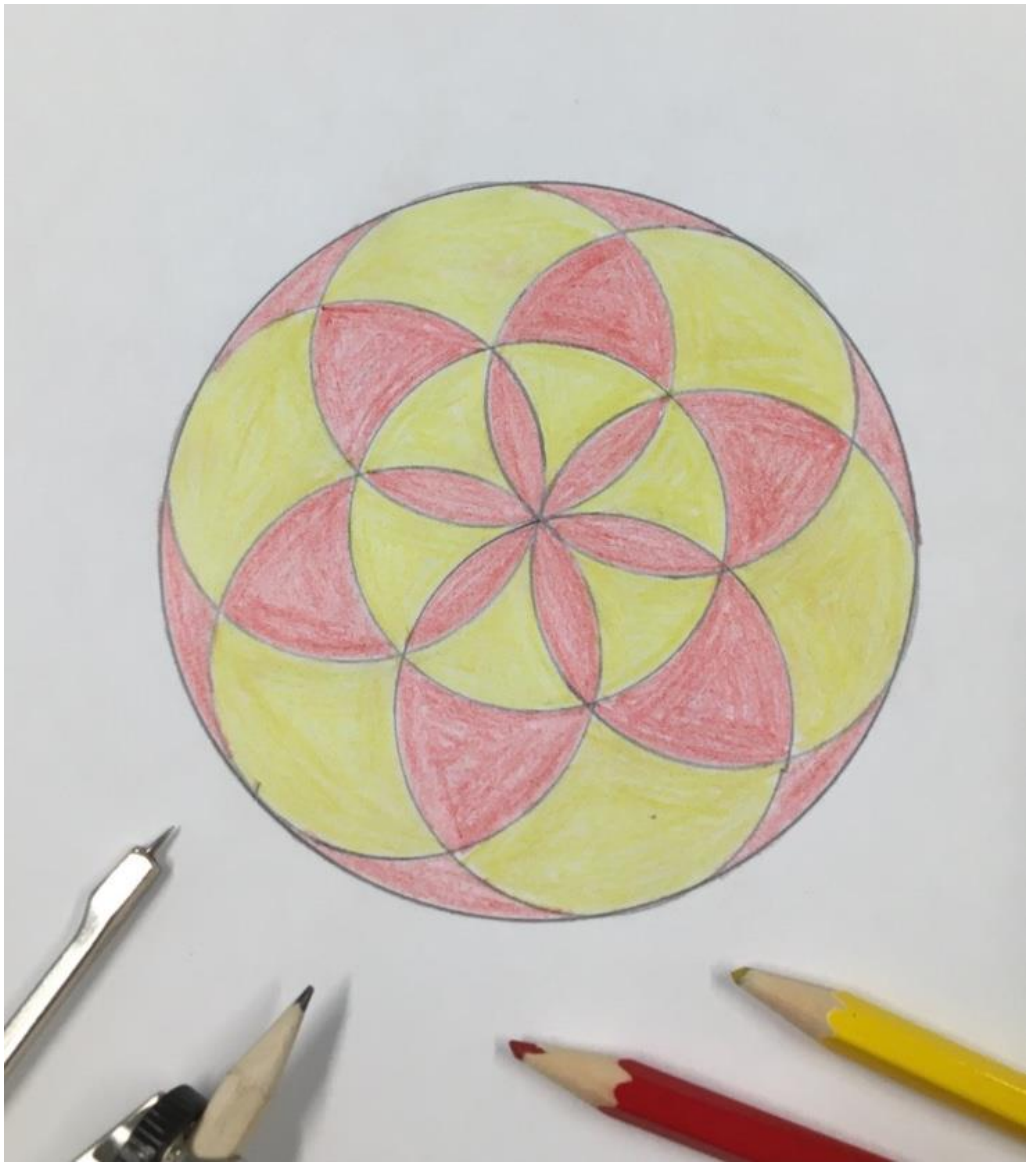


Another conference session was also appreciated and discussed …

Jonathan Hall @StudyMaths · Jul 18

That was fun! Although after 5 hours got a little tiresome. Still can't believe you did more during your lunch break!

> **Jonathan Hall** @StudyMaths · Jul 12
> Tried to make a zero pair Mandala (as you do).
>
> Gut instinct, which colour is there more of?
>
> What's the ratio of red to yellow?



… and there was this (!):

Rob Southern @mrsouthernmaths · Jul 18
And some of the best CPD I have EVER had has been hosting #mathscpdchat

Mary Pardoe @PardoeMary · Jul 18
And WHAT an excellent host you have always been Rob! #mathscpdchat

Matt Man @mr_man_maths · Jul 18
I echo this too Rob! Hosted for the first time in March and think I did three more after. So many great points to reflect and is brilliant for CPD too. #mathscpdchat

Kathryn MCCT @Arithmaticks · Jul 18
SAME! I just get to nick everyone's ideas and amalgamate them into a mega plan... #MathsCPDChat

Mary Pardoe @PardoeMary · Jul 18
54+ times hosting brilliantly Kathryn! You must have nicked quite a few ideas!!! 😄 😄 😄 #mathscpdchat

Kathryn MCCT @Arithmaticks · Jul 18
Many many ideas! I always say that I don't have anything to write blogs about etc as none of the ideas really come from me... I just steal everyone else's! #MathsCPDChat

Mary Pardoe @PardoeMary · Jul 18
We all do ... it's called learning!!! #mathscpdchat

In the next response to the third main question of this #mathsCPDchat …

> What is the best CPD you have done this year? How did it change your practice?

… Matt discusses how he has learnt by working with other teachers in 'delivering and receiving CPD' with teachers in other schools, and by working with colleagues in his own school:

Matt Man @mr_man_maths · Jul 18

For delivering CPD - I did the journey on simultaneous equations from primary right up to sixth form for @GLOWMaths #Mathsfest23 and @LaSalleEd #mathsconf32 #mathscpdchat

Mary Pardoe @PardoeMary · Jul 18

Really great! So interesting/instructive to investigate how concepts are developed both in teaching and in students minds as students mature ... as they move through time! #mathscpdchat

Matt Man @mr_man_maths · Jul 18

It really did push me out of my comfort zone and studied more about linking the Maths curriculum to all the key stages and listening to the view from both primary and secondary teachers. Lots of great feedback including one from @Kieran_M_Ed on one of the podcasts! #mathscpdchat

Kathryn MCCT @Arithmaticks · Jul 18

Oh lovely - could you show us a snippet of the timeline? #MathsCPDChat

Matt Man @mr_man_maths · Jul 18

Check my retweet #mathscpdchat

Matt Man @mr_man_maths · Jul 18

Check out this @Arithmaticks with the PPT on the journey of simultaneous equations from primary to sixth form. **#mathscpdchat**

> **Matt Man** @mr_man_maths · Jun 26
>
> mrmanmaths.wordpress.com/2023/06/26/a-s...
>
> Here is a brief summary of the workshop that I delivered for @GLOWMaths's #MathsFest23 and @LaSalleEd's #MathsConf32 with the PPT attached.
>
> I'll deliver this again at some point in future Maths conferences so that more of you get to experience this!

(The link to Matt's summary of his workshop is in the tweet that Matt quoted.)

Matt Man @mr_man_maths · Jul 18

Receiving CPD - this is the TFM1 and TFM2 course by @Advanced_Maths. It has been a saviour for me delivering A Level Further Maths (Pure elements!) Learning the material, networking with colleagues, doing the assignments whilst reflecting on misconceptions. #mathscpdchat

Charlotte Hawthorne @mrshawthorne7 · Jul 18

If these are the same quality as TAM, which I am certain they are. This is THE best CPD you can have. I recommend to everyone! #mathsCPDchat

Anthony Shaw @ShawMaths · Jul 18

The really are! All of the @MEIMaths @Advanced_Maths extended CPD are amazing.

Matt Man @mr_man_maths · Jul 18

Yes I did TAM too from five years ago. Met great maths teachers including @PixiMaths! Highly recommend all CPD courses by @Advanced_Maths especially if there are face to face sessions. #mathscpdchat

Matt Man @mr_man_maths · Jul 18

I'd also say the conversations that I have with Mel and Seager from @Just_Maths is so invaluable. Sometimes, it's not all about whether CPD is good at that time. What makes quality CPD is the impact it gives say this time next year, or a couple of years time. #mathscpdchat

Charlotte Hawthorne @mrshawthorne7 · Jul 18

Thank you for saying this! You're so right! Some change can be a slow burner, or may take you time to do, but it's shifted your thinking nonetheless. #mathsCPDchat

Kathryn MCCT @Arithmaticks · Jul 18

Agreed. Someone once said to me that when you are in a CPD session you only really hear what you are ready for at the time. I've found more and more that things from years ago come back to me and suddenly feel more relevant. #MathsCPDChat

Kathryn MCCT @Arithmaticks · Jul 18

Also - professional discussion is SO underrated as a form of CPD! The things I have learned on here, and discussing with colleagues is just invaluable.
@mrshawthorne7 and I do a debrief of our lessons on the phone on the way home most days haha!
#MathsCPDChat

Kathryn MCCT @Arithmaticks · Jul 18

I also can't be too nice about him, as I've already hit my quota for the year with my tweets about him yesterday.... but @StudyMaths always comes to my room like "OK, SO HOW CAN WE PUT THIS IN A COMPLETION TABLE" or similar. Been BRILLIANT CPD. #MathsCPDChat

The single replies to the third main question are shown next:

What is the best CPD you have done this year? How did it change your practice?

Simon Ball @ballyzero · Jul 18

@mrbartonmaths came to my workplace and spoke about how to get feedback from all students at once. It was excellent... but hasn't changed my practice yet, because it was after the students had left!
#mathscpdchat

Ben Rooney @benjrooney · Jul 18

The outstanding TFM1 course from @Advanced_Maths (lined up for TFM2) and a brilliant school session on questioning from @MrsR_Sci that transformed how I do whole-class questioning.

Joanne Green @MsJoanneGreen · Jul 18

@mrshawthorne7 @Arithmaticks **#mathscpdchat** @NCETM all of it! I attended The Royal Institution James Webb Space Telescope: A year in Solar System science event Friday. My questions were fantastic, so thank you to all of you lovely people who help to quench my academic hunger🙇‍♀️😇

Tayyub Majeed @tm_maths · Jul 18

I enjoyed maths conf, the whiterose maths conf (met you there in fact), and general reading on Twitter

DMaths MCCT @DeeVijayan · Jul 18

Late to the party and just catching up on #mathscpdchat . The best cpd ever has been this community on Twitter. I wouldn't be the teacher I am if it wasn't for Twitter. Thanks to @PGCE_Maths for introducing me to #edutwitter

Jacob @WonderingMaths · Jul 18

Doing CPD on teaching for mastery, we looked at Representation and Structure and I learned so much about how we use representations in real life for so many things to understand them. Money, drawings, music notation etc.
Really changed how I think about pictures!
#mathscpdchat

To the last question of the #mathsCPDchat …

Kathryn MCCT @Arithmaticks · Jul 18

It's a biggie to end on here, so we are giving you a good chunk of time! @mrshawthorne7

Looking to next year, give one thing from your practice that you will:

1. Keep ✅
2. Bin 🗑️
3. Improve 📈

#MathsCPDChat

… five teachers responded. Their replies are shown next:

MrHawesMaths @HawesMaths · Jul 18

Keep: OneNote/iPad use in the classroom

Bin: End of unit tests/marking

Improve: communication with parent AND student. #mathscpdchat

Kathryn MCCT @Arithmaticks · Jul 18

Oooh how are you binning marking!?!?!?! #MathsCPDChat

MrHawesMaths @HawesMaths · Jul 18

Going for a more feedback focused approach and giving time in lessons to reflect/review work done. More peer/self marking. Only going to mark one assessment per term. Plus our subject strands are the focus.

#mathscpdchat

Karen @karenshancock · Jul 18

KEEP - Miniwhiteboards (Holepunched and in their folders, with nice thin pens so they can write loads)

BIN - (This is a hard one - after 26 years, I've binned a lot of things, but I'm not sure there's much else to bin.)

cont... #MathsCPDChat

Karen @karenshancock · Jul 18

IMPROVE - Looking to develop spot tests post homework to include two homework questions and one question similar to the homework but not identical.

#MathsCPDChat

Emma Ball @BallEmma1 · Jul 18

Keep: mini whiteboards and targeted retrieval starters

Bin: reliance on white rose worksheets

Improve: closing the gap pupil activities after end of unit assessments

#mathsCPDchat

Mrs Zigmond @CZigmond · Jul 18

1. SPARX ✅
2. Half of my starter questions 🏀
3. Mini-whiteboard use in lessons 📈

#MathsCPDchat

BGodfrey @LessaRiel · Jul 19

1. keep reducing examples students write down in favour of key well annotated examples
2. bin using ladies and gentlemen when trying to get attention
3. improve whiteboards and how they are integrated into the lesson

THE CLOSING MESSAGES FOLLOW

Kathryn MCCT @Arithmaticks · Jul 18

Woah, where did that hour go?! Thank you SO SO SO much for joining me and @mrshawthorne7 this evening for the last **#MathsCPDChat** from @NCETM.

We are so happy it was so busy and inspiring, as usual! You are all brilliant and have made this chat amazing for 10 whole years!

Kathryn MCCT @Arithmaticks · Jul 18

From a personal perspective, I want to say thank you so much to @NCETM for providing this platform for us all to discuss our ideas. And for asking me to host it for so many years. It means so much to me to be able to connect with the community like this.

Kathryn MCCT @Arithmaticks · Jul 18

Charlotte Hawthorne @mrshawthorne7 · Jul 18
Virtual one...yes! Maybe a group fist bump instead?! 🤣

Joanne Green @MsJoanneGreen · Jul 18
#mathscpdchat @mrshawthorne7 @Arithmaticks @NCETM Thank you guys here's your presents 🌸🌺🌻🌹🥀🍃🍊🍋🍇🍉🥥🍉🍒🍓

Jacob @WonderingMaths · Jul 18
Thank you for hosting a brilliant CPD chat! Great to connect with so many others and hear so many interesting things! #mathscpdchat

Charlotte Hawthorne @mrshawthorne7 · Jul 18
And tweet of the hour goes to... #mathsCPDchat

Rob Southern @mrsouthernmaths · Jul 18
Replying to @mrshawthorne7 and @Arithmaticks
And some of the best CPD I have EVER had has been hosting #mathscpdchat