#mathscpdchat 13 December 2022

Maths teaching during the autumn term 2022: share your reflections!

Hosted by Kathryn Darwin

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

A full illustrated summary of the discussions generated by the host's questions follows after brief descriptions of links shared during this #mathsCPDchat:

Desmos Classroom which is a collection of free digital lessons which you can browse and/or use. You can also create your own tasks and activities. It was shared by Karen Hancock

Unit 3 Check In which is a Desmos activity (sequence of tasks) created by Karen Hancock. It was shared by Karen Hancock

Make It Stick which is an episode of the Leading Learning podcast in which Peter C Brown, co-author of *Make It Stick: The Science of Successful Learning* is interviewed. It was shared by Karen Hancock

Linear Simultaneous Equations which is a blog that is one of Jo Morgan's resources. It was shared by Jenny Hill-Parker

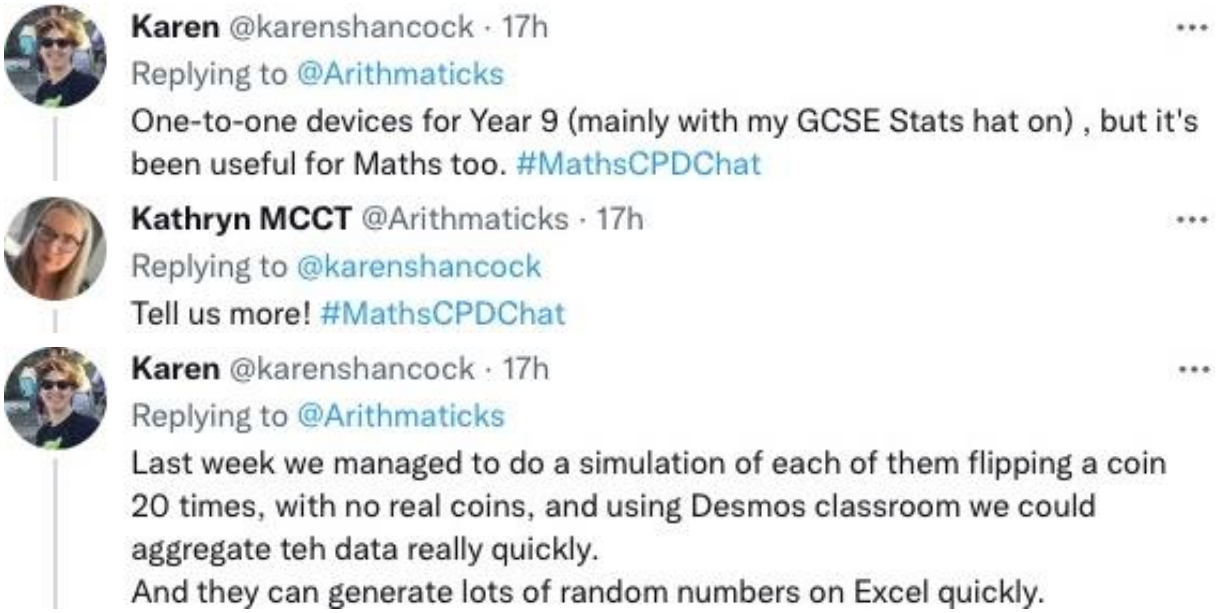
Random Sampling Methods which is a 'two-day lesson'. In the first lesson students carry out tasks, and in the second lesson they reflect on, and discuss, what they did, found and learned in the first lesson. It was shared by James Maloney

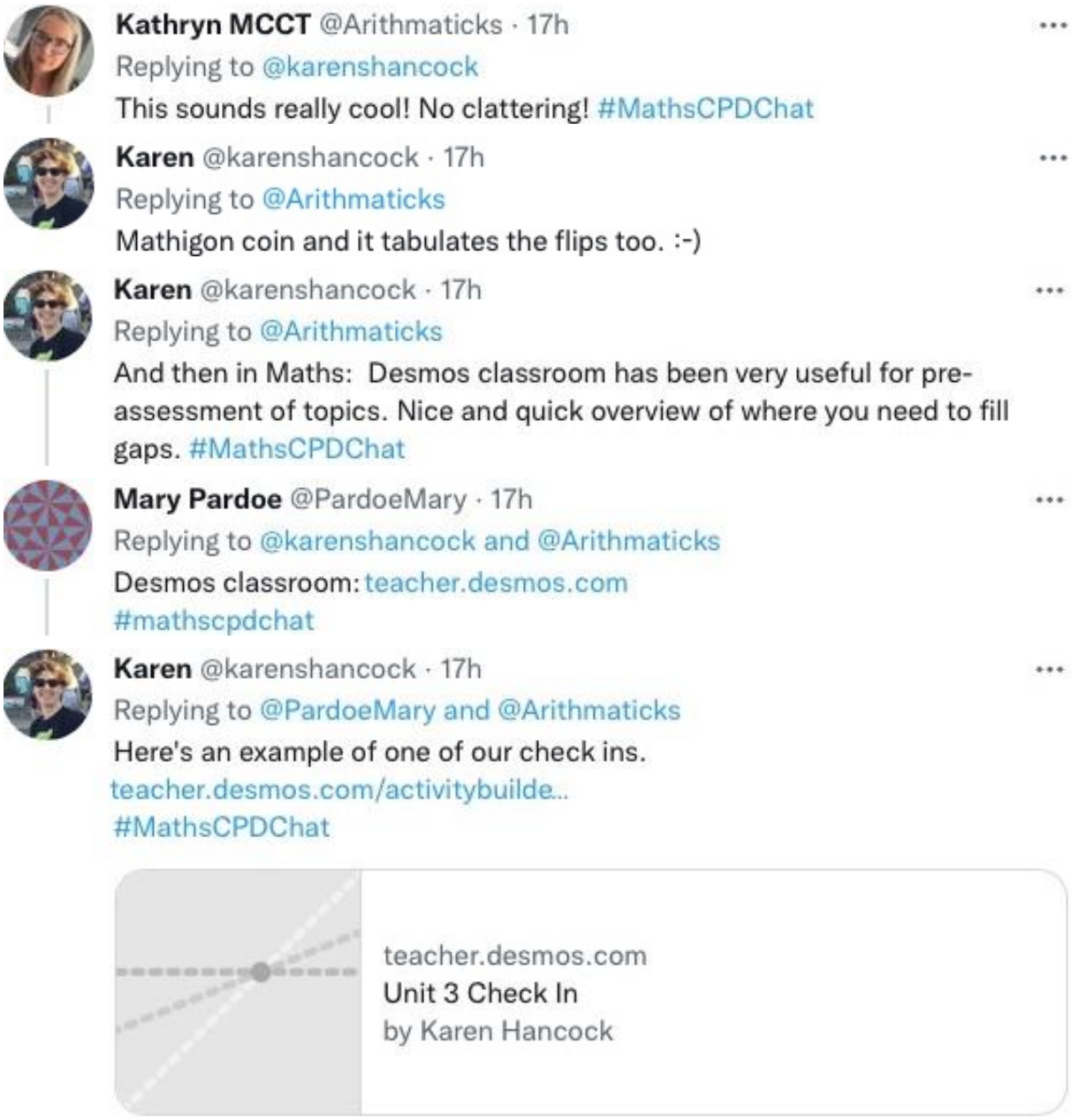
Distributivity which is free-to-download resource material created by Nathan Day. It is an ordered sequence of tasks that focus on the distributive law applied to numbers. Algebraic notation is introduced at the end. It was shared by Nathan Day

The host followed her initial greeting…

… with her first main question …

… which prompted Karen Hancock to describe how some resources supported her teaching and enhanced her students' learning experiences this term …





(link provided above)

… and provided an opportunity for Jonathan Hall to make a (not very clear to general observers) reference to the host's successful work this term, and another opportunity for the host to remind all contributors about including the hashtag in their tweets to the chat:

Kathryn MCCT @Arithmaticks · 18h
Replying to @StudyMaths
This is a lovely compliment Jonathan… but… HASHTAG!!!!!!!!!!!!!!!!

Kathryn MCCT @Arithmaticks · 18h
Replying to @StudyMaths
Seriously though, thanks

The host's second main question …

Kathryn MCCT @Arithmaticks · 19h
What lesson went particularly well for you this term? Why?
#MathsCPDChat

… gave opportunities for five teachers to recall, and share notes about, some successful maths lessons. Jenny Hill-Parker was inspired by one of Jo Morgan's resources …

Jenny Hill-Parker @JennyHillParker · 19h
Replying to @Arithmaticks
I did a Geogebra lesson on simultaneous equations from @mathsjem's blog - there were some nice wow moments #mathscpdchat

Kathryn MCCT @Arithmaticks · 19h
Replying to @JennyHillParker and @mathsjem
Could you share a link? Why do you think it worked so well?
#MathsCPDChat

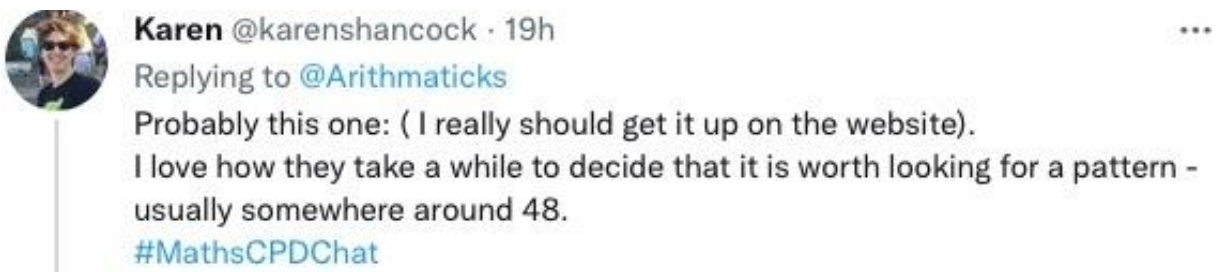
Jenny Hill-Parker @JennyHillParker · 19h
Replying to @Arithmaticks and @mathsjem
The worksheet was a great practical demo of why algebraic and graphical solutions align #mathscpdchat

resourceaholic.com/2014/05/linear...

(link provided above)

… Simon Ball shared reflections on his mechanics lessons …

… Karen Hancock showed how she used her own resources in some of her best lessons this term …



TASK Primes (3/3)

Date:

Find the prime factor decomposition of the following numbers, and identify how many factors they have.

You DO NOT have to list all the factors if you can explain how you answered the question without doing so.

8		
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Kathryn MCCT @Arithmaticks · 19h

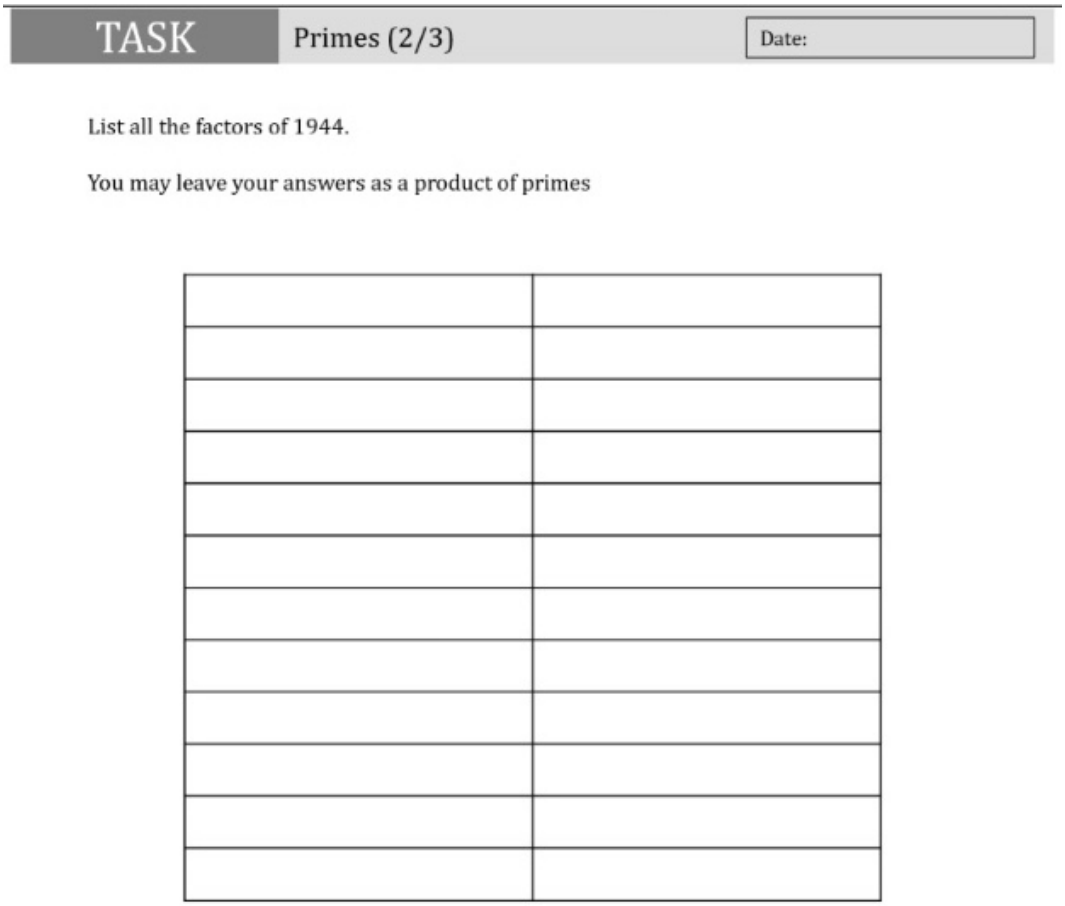
Replying to @karenshancock

That is looooovely... Can you explain more about why you picked those numbers? #MathsCPDChat

Karen @karenshancock · 19h

Replying to @Arithmaticks

I went for numbers that they could easily find the factors for - but would get a little silly if they stuck with listing.
The task before is this :-) I do make them list all of these!
#MathsCPDChat



TASK | Primes (2/3) | Date:

List all the factors of 1944.

You may leave your answers as a product of primes

Kathryn MCCT @Arithmaticks · 19h

Replying to @karenshancock

I think I love this even more!!!!! #MathsCPDChat

Karen @karenshancock · 19h

Replying to @Arithmaticks

I'll try to put the whole task up on the website in a bit. #MathsCPDChat

… James Maloney discussed some of his particularly effective teaching this term …

James Maloney @JamesWMaloney · 19h

Replying to @Arithmaticks

Inflation. Decided to focus on it more this year for obvious reasons. And the students seemed to really appreciate it and engaged. #mathscpdchat

Kathryn MCCT @Arithmaticks · 19h

Replying to @JamesWMaloney

This is a really nice example of 'real life maths' and bringing culturally relevant content to the maths classroom without gimmicks #MathsCPDChat

Mary Pardoe @PardoeMary · 19h

Replying to @Arithmaticks and @JamesWMaloney

Yes … lots to learn from teachers who are working hard on teaching/learning prompted/generated by working with/on Core Maths courses! #mathscpdchat

James Maloney @JamesWMaloney · 19h

Replying to @Arithmaticks

Yeah. We went with their examples. It's the first time students have really experienced inflation. Normally it's too slow to really notice or they do something like shrinkflation. #mathscpdchat

Kathryn MCCT @Arithmaticks · 19h

Replying to @JamesWMaloney

How did you approach it? #MathsCPDChat

James Maloney @JamesWMaloney · 19h

Replying to @Arithmaticks

Opened with McDs cheeseburgers going up by 20p to £1.19 for the first time in 14 years. Lots of discussion. CPI/RPI. Real terms pay cuts was the only sticking point really. Index prices. #mathscpdchat

… and this lesson of Mr Bufton's that went particularly well may have given other teachers some ideas!

Mr AVB @MrBufton · 17h

Replying to @Arithmaticks

I did a sequences lesson with a LA group and we went outside and created sequences using items we could find.

There were also the following two replies from Joanne Green to the host's second question (both 'replies' were given as quote-retweets of the host's question):

Joanne Green @MsJoanneGreen · 20h

#mathscpdchat @Arithmaticks Due to me doing 30-40 hours per week self-learning, what's surprised me is the speed that I can draw experiments - and almost all technical drawings, including labels. I'm no artist, but my speed shocks other teachers - their mouths gape 🤣

Joanne Green @MsJoanneGreen · 21h

#mathscpdchat @Arithmaticks What else has surprised me is the number of times that I have suggested pupils attend specialist schools for good reasons. Yet, it's a shame that I cannot suggest pupils who are ahead attend specialist learning centres too - to advance them further.

> **Kathryn MCCT** @Arithmaticks · 21h
> What lesson went particularly well for you this term? Why?
> #MathsCPDChat

Kathryn's third main question …

Kathryn MCCT @Arithmaticks · 20h

Let's take a turn towards the more 'negative' side...
What lesson didn't go as well this term?
What did you learn from it?
(Can you tell I have worked a lot with ITT/ECTs this term!? 😜)
#MathsCPDChat

… generated this conversation …

Karen @karenshancock · 20h

Replying to @Arithmaticks

My Year 8 and Angles in Polygons: too many things going on.
I've learnt that I need to adapt the booklets I wrote for a similar ability class last year a lot for this year's class.
I've been wondering if I didn't have the booklet would I have done things the same... #MathsCPDChat

Kathryn MCCT @Arithmaticks · 20h

Replying to @karenshancock

Interesting! This has always been my worry with booklets - less flex! How did you fix it? What do you think you can do next time to avoid it happening again? #MathsCPDChat

Karen @karenshancock · 20h

Replying to @Arithmaticks

I spent a lot of time last year picking what I thought were good tasks. But I think the class this year need more scaffolding - so I need more examples. We use MWBs a lot so that helps.#MathsCPDChat

Karen @karenshancock · 20h

Replying to @karenshancock and @Arithmaticks

I've just started doing lots of MWB stuff separate from the booklet to recap and reinforce. #MathsCPDChat

Kathryn MCCT @Arithmaticks · 20h

Replying to @karenshancock

I think this would be my go-to aswell. It's why I like OneNote - I can infinitley scroll to the side and make more Qs up! #MathsCPDChat

Nathan Day @nathanday314 · 20h

Replying to @Arithmaticks and @karenshancock

My experience with booklets is often the opposite!
Everything is there ready, so I can always move on early or skip things if appropriate, or change up the order of stuff
If a class needs more practice on something, I can print an extra page or do some stuff on MWBs
#MathsCPDChat

Kathryn MCCT @Arithmaticks · 20h

Replying to @nathanday314 and @karenshancock

I plan my lessons like this, I just feel so uneasy about comitting it to a booklet though! I am not sure why! #MathsCPDChat

Nathan Day @nathanday314 · 20h

Replying to @Arithmaticks

Give it a go!

Kathryn MCCT @Arithmaticks · 20h

Replying to @nathanday314

I mean, I am lying a bit. I used to print booklets of my slides for Year 11 quite a lot to be fair. But I do it less at my new school!

Kathryn MCCT @Arithmaticks · 20h

Replying to @nathanday314

I already spend so much time planning, I just can't face reformatting everything hah!

… and this …

Nathan Day @nathanday314 · 20h

Replying to @Arithmaticks

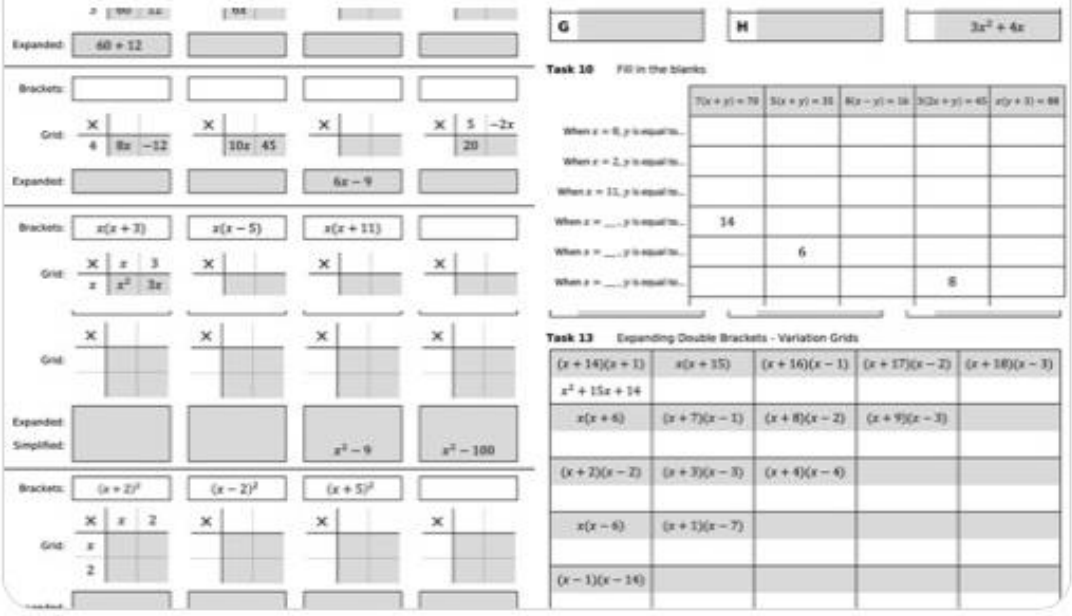
My carefully planned sequence of lessons on expanding and factorising ended up being pretty unsuccessful, despite my having high hopes for it.

I've got quite a few thoughts about why it didn't work, which I hope to write up over the break!

twitter.com/nathanday314/s...

#MathsCPDChat

> **Nathan Day** @nathanday314 · Oct 29
>
> Distributivity: Part 2 - The Algebra Bit
>
> Full booklet, with 8 starters, 13 tasks and full solutions available at the links below!
>
> PDF: drive.google.com/file/d/1R610DH...
> Editable PPT: docs.google.com/presentation/d...



Kathryn MCCT @Arithmaticks · 20h

Replying to @nathanday314

Always infuriating when you think you've nailed it and it just doesn't go like you expected it to... Look forward to your reflection on it! Can we get a #MathsCPDChat sneak-peek?

Nathan Day @nathanday314 · 20h

Replying to @Arithmaticks

Introducing students to a model isn't like kicking a football, it's like sliding a curling stone.

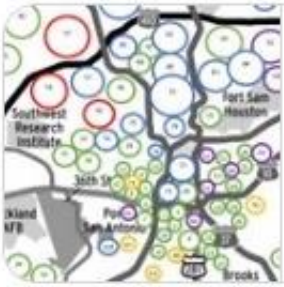
I should have gone with the stone for as long as possible, and kept brushing the ice in front of the stone to make sure it didn't go off course!

… and this short conversation:

James Maloney @JamesWMaloney · 20h

Replying to @Arithmaticks

Sampling. Still not happy with the balance I have. Use this skewthescript.org/4-2 and the students engage and it has improve understanding from how I used to deliver it but something's still not quite right. #mathscpdchat



skewthescript.org
Lesson 4.2 — Skew The Script
AP Statistics lesson 4.2. Covers random sampling methods through an activity that explores income ...

Kathryn MCCT @Arithmaticks · 20h

Replying to @JamesWMaloney

Oooh I haven't seen this before - can you tell us a bit more about it? #MathsCPDChat

James Maloney @JamesWMaloney · 20h

Replying to @JamesWMaloney and @Arithmaticks

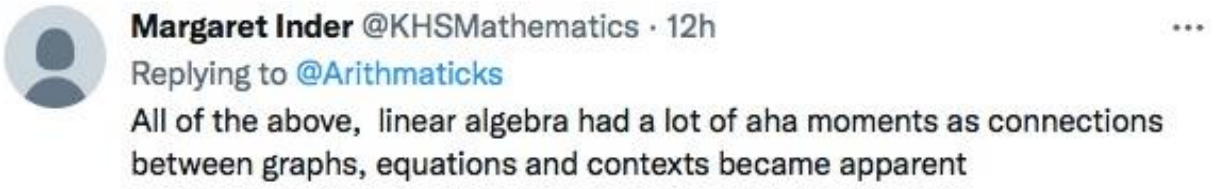
I use it in Core Maths. There's a Desmos with it. Really good to illustrate the different methods. Does all the processing for you so you can concentrate on the understanding. Works pretty well on mobiles too for desmos. #mathscpdchat

The host's fourth main question …

Kathryn MCCT @Arithmaticks · 21h

Did anything surprise you in your teaching this term?
A misconception you haven't seen before?
A student struggling with something?
A student totally 'getting it' and blowing you away?
#MathsCPDChat

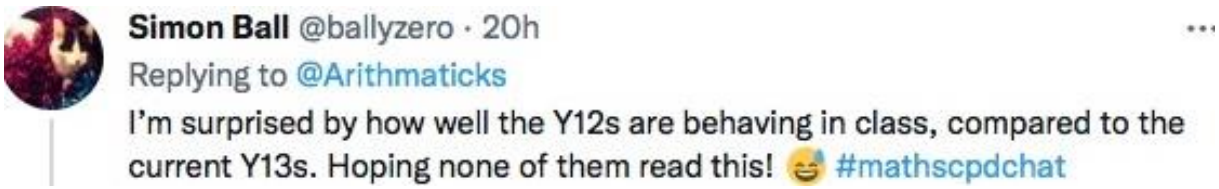
… prompted these replies about KS5 teaching …



Margaret Inder @KHSMathematics · 12h

Replying to @Arithmaticks

All of the above, linear algebra had a lot of aha moments as connections between graphs, equations and contexts became apparent



Simon Ball @ballyzero · 20h

Replying to @Arithmaticks

I'm surprised by how well the Y12s are behaving in class, compared to the current Y13s. Hoping none of them read this! 😅 #mathscpdchat

Tayyub Majeed @tm_maths · 20h

Replying to @ballyzero and @Arithmaticks

They were nice! Just had to try harder to explain A Level maths stuff to them.

… and this about less advanced students:

Joanne Green @MsJoanneGreen · 20h

#mathscpdchat @Arithmaticks I think a big surprise for me is the learning behaviour gap, which is hugely obvious now as it's both extremes. The pupils behind on the whole don't do any self-learn at home. In contrast, the ones ahead plan self-learning effortlessly

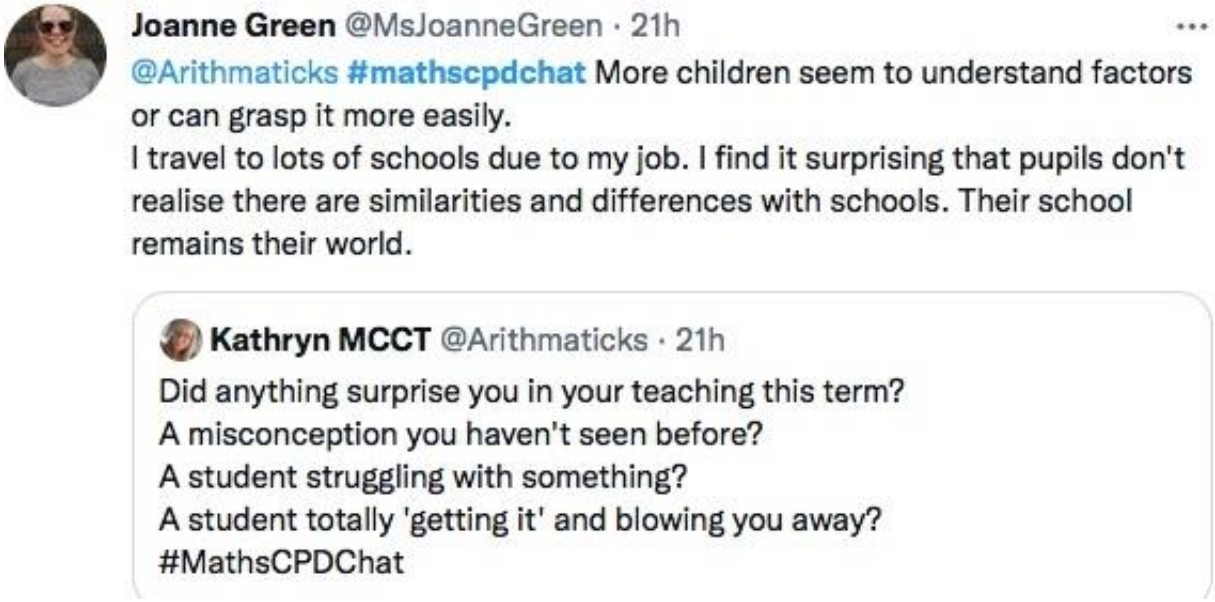
Kathryn MCCT @Arithmaticks · 20h

Replying to @MsJoanneGreen

Do you think there is anything we can do to help to close that gap? #MathsCPDChat

There was no reply to Kathryn's question above.

This quote-retweet of the host's fourth question was also posted:



Joanne Green @MsJoanneGreen · 21h

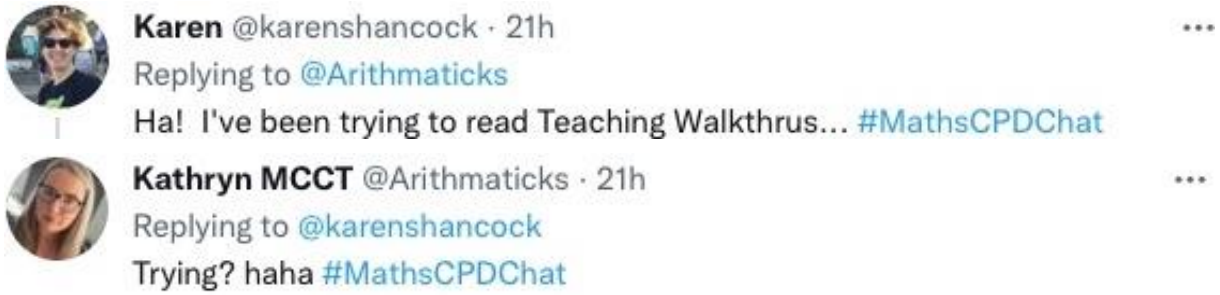
@Arithmaticks #mathscpdchat More children seem to understand factors or can grasp it more easily.
I travel to lots of schools due to my job. I find it surprising that pupils don't realise there are similarities and differences with schools. Their school remains their world.

> **Kathryn MCCT** @Arithmaticks · 21h
>
> Did anything surprise you in your teaching this term?
> A misconception you haven't seen before?
> A student struggling with something?
> A student totally 'getting it' and blowing you away?
> #MathsCPDChat

The host's fifth main question …

… received this reply …

… and this:



There was another quote retweet from Joanne Green:

Replies to the following sixth question from the host …

Kathryn MCCT @Arithmaticks · 21h

I feel like now might be a nice time to shout out your colleagues (online or real-life!) that have supported you through this term…
#MathsCPDChat

… included four from Kathryn herself (two of which prompted replies) …

Kathryn MCCT @Arithmaticks · 21h

Replying to @Arithmaticks

For me:
@LeedsTeacher for a solid first term at LCA
@StudyMaths for sharing many many completion tables with me
& the rest of the LCA Maths dept for dealing with me not having a clue about anything for the first few weeks… & eating all the cakes I make so I don't!

Kathryn MCCT @Arithmaticks · 21h

There's loads of you on here who help me all the blooming time. Too many to list.
But big love to @mrshawthorne7 and @giftedHKO who have become 'Real Life' friends. I love our Friday Drive-Time catch ups 🥰 #MathsCPDChat

Miss Konstantine @giftedHKO · 19h

Replying to @Arithmaticks and @mrshawthorne7

#mathscpdchat Friday night drive home chat is awesome. Very lucky to have you both.

Kathryn MCCT @Arithmaticks · 21h

And a massive massive thank you to @NCETM @YHMathsHub @Exchangethub and @LTUPGCE for all the oppotinitues you have given me to work with other teachers, including ECTs and ITTs. I am super passionate about helping teachers develop, and I love that you let me!
#MathsCPDChat

Yorkshire and the Humber Maths Hub @YHMathsHub · 8h

🥰🥰🥰🥰

Kathryn MCCT @Arithmaticks · 21h

OH AND… You lovely lot for contributing to #MathsCPDChat every week. You make this such a lovely hour of the week!

… and these replies to Kathryn's sixth question (from James Maloney) also prompted return-responses:

Kathryn's seventh and last question …

… prompted this reflection …

Nathan Day @nathanday314 · 21h

Replying to @Arithmaticks

January marks a year since I started making booklets. I'm looking forward to adapting/improving my mammoth Y10 HT3 booklet that kicked everything off.

I've learned a heckmeck of a lot since then!

#MathsCPDChat

… and this conversation …

Karen @karenshancock · 21h

Replying to @Arithmaticks

I need to write some more examples/self explanation prompts.
I want to take the time to think about the ones I've been avoiding writing, so work out if I can find some self explanation prompts for them.
#MathsCPDChat

Kathryn MCCT @Arithmaticks · 21h

Replying to @karenshancock

Oooh what ones are you avoiding! #MathsCPDChat

Karen @karenshancock · 21h

Replying to @Arithmaticks

Generally ones where I think I need to talk through the example step by step live - but that shouldn't stop me writing prompts. (except it does because I don't have an example to refer to)

Kathryn MCCT @Arithmaticks · 21h

Replying to @karenshancock

Write the example in, write the prompts, then erase it? #MathsCPDChat

Kathryn MCCT @Arithmaticks · 21h

Replying to @karenshancock

Write the example in, write the prompts, then erase it? #MathsCPDChat

Karen @karenshancock · 21h

Replying to @Arithmaticks

I think so - it can also be a time thing. For example today I printed a colleague's booklet for Surface Area, rather than write my own- so no self explanation prompts in that! #MathsCPDChat

… and this:

Karen @karenshancock · 21h

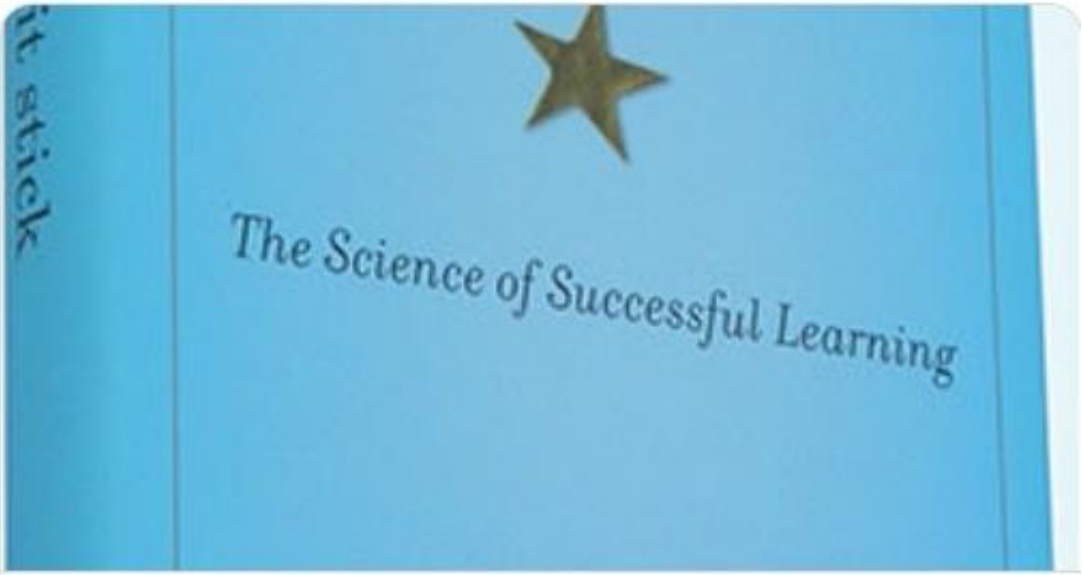
Replying to @Arithmaticks

I also want to work more on explaining to students how memory works and why the things we do in lessons help with this. Enjoying listening to Make It Stick at the moment which talks about this.
#MathsCPDChat

Mary Pardoe @PardoeMary · 21h

Replying to @karenshancock and @Arithmaticks

This? leadinglearning.com/episode-20-mak...
#mathscpdchat



leadinglearning.com
Make It Stick with Peter C. Brown
In this episode of the Leading Learning podcast, Celisa interviews Peter C. Brown, co-author of Make It Stick: The Science of ...

Karen @karenshancock · 21h

Replying to @PardoeMary and @Arithmaticks

That's the one. My failure to read any of my education theory books prompted me to use an Audible Credit to get this one. It has certainly helped with my progress. #MathsCPDChat

To Kathryn's closing message …

Kathryn MCCT @Arithmaticks · 21h

Thank you so so much for your contributions tonight. I know it has been a long, hard term!
Have a lovely last few days at school, and a well-deserved rest over the Christmas break.
You are all AWESOME 🥰
#MathsCPDChat will be back in the new year!

… there were these replies:

mathscpdchat @mathscpdchat · 21h

Replying to @Arithmaticks

And many thanks to you Kathryn, @Arithmaticks, for hosting #mathscpdchat tonight! (No need to say 'brilliantly' because you always are.) Thank you also to all contributors! A summary will appear in due course, including all links shared tonight. Happy holidays soon!

James Maloney @JamesWMaloney · 21h

Replying to @Arithmaticks

Thanks for hosting @Arithmaticks #mathscpdchat. You too!

Simon Ball @ballyzero · 21h

Replying to @Arithmaticks

Thanks for all your hard work tonight!

Karen @karenshancock · 21h

Replying to @Arithmaticks

Thank you - great fun, as always.

Joanne Green @MsJoanneGreen · 21h

@Arithmaticks #mathscpdchat Thank you for another great session. See you next year - HAPPY CHRISTMAS 🎄🎅🎁🍮