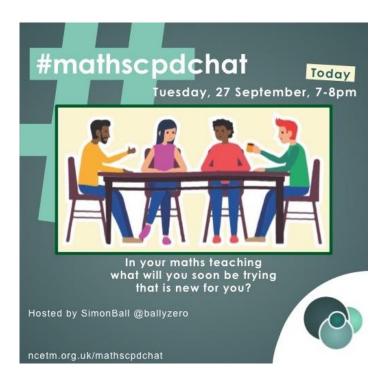


### #mathscpdchat 27 September 2022

In your maths teaching what will you soon be trying that is new for you? Hosted by Simon Ball

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:

<u>Core Maths</u> which is the part of the MEI website where you will find a wide range of resources to support the teaching and learning of the maths involved in Core Maths courses. The materials are located under seven headings: *Qualifications*, *Professional Development*, *Using Technology*, *Resources*, *Inspiring Students*, *Transition to further study*, and *Support for offering Core Maths*. It was shared by <u>Mary Pardoe</u>

<u>Catherine Van Saarloos: padlet</u> which contains a vast collection of varied and currently topical resources for teaching and learning Core Maths. They are presently arranged in 22 sections, each containing many items. It was shared by <u>Mary Pardoe</u>

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



The host's (Simon Ball's) opening tweet ...



Simon Ball @ballyzero · 17h

Good evening, all! Time for another #mathscpdchat . Please make sure to include the hashtag in your replies, so that we can all see your fine contributions.

Q1) What are you trying in your maths teaching that's new to you this year?

... generated most of the replies and conversations of this #mathsCPDchat. The (linked-to-Twitter) screenshots below show two of the discussions that evolved in response to it. In those two conversations only you can click on any screenshot-of-a-tweet to go to that actual tweet on Twitter.

This is one of those two conversations (involving Sheena, Simon Ball, Mary Pardoe, Catherine Edwards and Cat van Saarloos). It is about starting to teach Core Maths, and it developed in response to a reply to Q1 (above) from Sheena:



Sheena @Sheena2907 · 16h

Replying to @ballyzero

Core maths!! #mathscpdchat



Simon Ball @ballyzero · 16h

Replying to @Sheena2907

How is that going? How are you finding resources for the course? #mathscpdchat



Sheena @Sheena2907 · 16h

Replying to @ballyzero

We did Fermi estimation today which I really enjoyed. It's quite different to teach. Lots more discussion and real life stuff I'm loving it #mathscpdchat



Simon Ball @ballyzero · 16h

Replying to @Sheena2907

The one year I taught it, the board we used didn't include Fermi estimation... I was a bit upset. How are you resourcing the course? #mathscpdchat



Sheena @Sheena2907 - 16h

Replying to @ballyzero

We have lots of stuff, not come across any issues yet but we have integral as well as the tons of other resources. We chose the stats one as it best supported other a lebel subjects #mathscpdchat





Simon Ball @ballyzero · 16h

Replying to @Sheena2907

Same for us! Have you had good uptake of the course? #mathscpdchat



Sheena @Sheena2907 · 16h

Replying to @ballyzero

Yes we do have a few too many in one class so will be a bit more forceful in capping it next year! #mathscpdchat



Simon Ball @ballyzero - 16h

Replying to @Sheena2907

Rather be oversubscribed than under, I expect! Good luck and good skill with the course. #mathscpdchat



Mary Pardoe @PardoeMary · 16h

Replying to @Sheena2907 and @ballyzero

Are you finding this helpful?

mei.org.uk/teachers/core-... #mathscpdchat



 $Q \equiv$ 

...



# **Core Maths**

#### Qualifications

What are Core Maths qualifications and how will students benefit from studying them?

#### Professional Development

Discover how our teacher training courses and professional development opportunities can

#### **Using Technology**

How using technology can help your students to access mathematical ideas and develop their skills





Sheena @Sheena2907 · 16h

Replying to @PardoeMary and @ballyzero

Our students will get ipads soon so looking forward to exploring stuff on there with them! #mathscpdchat



Simon Ball @ballyzero · 16h

Replying to @Sheena2907 and @PardoeMary

Wow! How are you preparing for that huge change?! #mathscpdchat



Catherine Edwards @Edwards08C · 16h

Replying to @ballyzero @Sheena2907 and @PardoeMary

What support has the school put in place for technophobe teachers? (Grapling with supporting some IT systems changes)



Sheena @Sheena2907 · 16h

Replying to @Edwards08C @ballyzero and @PardoeMary

The students 10-13 have ipads. The 12s had them last year but had to hand them back so they're used to it. We've had tons of training but I'm still totally rubbish with it!! It's good for the students to use integral and desmos etc. I do my best #mathscpdchat



Simon Ball @ballyzero - 16h

Replying to @Sheena2907 @Edwards08C and @PardoeMary

Access to Desmos must be amazing for them. #mathscpdchat



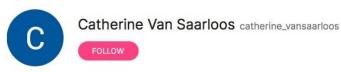
Mary Pardoe @PardoeMary - 16h

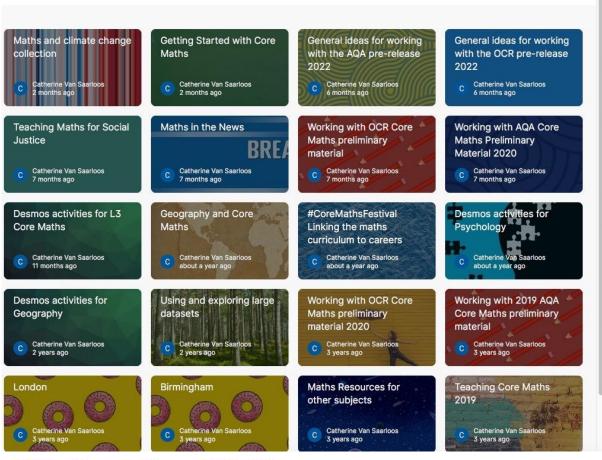
Replying to @Sheena2907 and @ballyzero

This is great: mei.org.uk/teachers/core-...

#mathscpdchat









Sheena @Sheena2907 · 16h Replying to @PardoeMary and @ballyzero Cat is flipping awesome @CoreMathsCat



Simon Ball @ballyzero · 19h #mathscpdchat Can only agree!



Cat van Saarloos @CoreMathsCat · 16h Replying to @Sheena2907 @PardoeMary and @ballyzero



I can only put so much together because I am not in the classroom everyday. You are all the awesome ones 😂





The other discussion for which links to the actual tweets are provided, also generated by the host's Q1



### Simon Ball @ballyzero · 17h

Good evening, all! Time for another #mathscpdchat . Please make sure to include the hashtag in your replies, so that we can all see your fine contributions.

Q1) What are you trying in your maths teaching that's new to you this year?

... started from Rebecca Atherfold's reply (to Q1) which was about starting to teach a one-year GCSE Higher tier course with FE students for most of whom English is not their first language. The participants in this discussion were Rebecca Atherfold, Simon Ball, RobotMaths, Catherine Edwards and Vinculum Lemniscate:



#### Rebecca Atherfold @becatherfold • 17h

Replying to @ballyzero

I'm teaching higher gose resit (well they aren't exactly resitters because they have joined FE from other countries)



Simon Ball @ballyzero · 17h

Replying to @becatherfold

Ahhhh, lovely! How are those lessons going, with having to teach content and perhaps broach language barriers? #mathscpdchat



Rebecca Atherfold @becatherfold · 17h

Replying to @ballyzero

Their language is pretty good which obv helps - hardest bit for me is deciding what to prioritise in less than 8 months of lessons #mathscpdchat



Simon Ball @ballyzero · 17h

Replying to @becatherfold

I assume that means it's a full-year course with no November exams. How are you making the choice of what to prioritise? #mathscpdchat



Rebecca Atherfold @becatherfold . 17h

Replying to @ballyzero

Lots of assessment to see where their gaps are (they love a test!) and to try and gauge what grade-ish is sensible. It's pretty personalised but they work super hard and are ridiculously well behaved so it's less work in other ways!! #mathscpdchat





Rebecca Atherfold @becatherfold · 17h

Replying to @becatherfold and @ballyzero

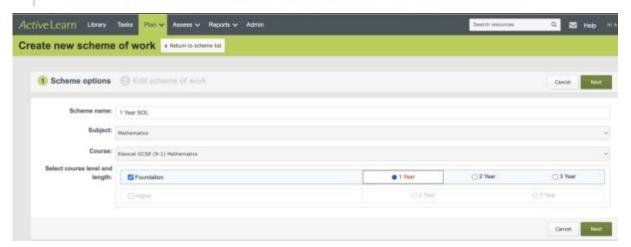
If anybody has a higher one year SoL I would be super grateful! #mathscpdchat



RobotMaths @robotmaths . 16h

Replying to @becatherfold and @ballyzero

You can definitely get a Foundation one on Pearson ActiveLearn





Rebecca Atherfold @becatherfold · 16h

Replying to @robotmaths and @ballyzero

Thanks! I do get why there isn't a 1 year for higher but we are seeing more students from abroad and more who have been home schooled who are more than capable - just haven't had the opportunity.#mathscpdchat



Simon Ball @ballyzero · 16h

Replying to @becatherfold and @robotmaths

Giving them the opportunity is the right thing to do.



Catherine Edwards @Edwards08C · 19h

Replying to @ballyzero

I think @EI\_Timbre had a padlet? Maybe @missradders has it on her amazing planning padlet #mathscpdchat



Vinculum Lemniscate @VinculumL · 16h

Replying to @becatherfold

I use DrFrostMaths.com @DrFrostMaths free Pearson higher tier course - fully resourced questions & videos - lots of independent work - sequencing can be reordered. Also @Just\_Maths crossover topic list is what I begin the course with. Hope that's useful.



## GCSE Higher

Unit 1 - Number

Unit 2 - Algebra

Unit 3 - Data

Unit 4 - Fractions and proportion

Unit 5 - Angles and right-angled

triangles

Unit 6 - Graphs

Unit 7 - Area and volume

Unit 8 - Transformations and

construction

Unit 9 - Quadratics 1

Unit 10 - Probability

Unit 11 - Multiplicative reasoning

Unit 12 - Similarity and congruence

Unit 13 - Sine and cosine rules

Unit 14 - Statistics and sampling

Unit 15 - Quadratics 2

Unit 16 - Circle theorems

Unit 17 - Algebraic manipulation

Unit 18 - Vectors and geometric proof

Unit 19 - Proportion



Rebecca Atherfold @becatherfold . 16h

Replying to @VinculumL @DrFrostMaths and @Just\_Maths

That's really useful! I use Dr Frost a bit but certainly not to its full potential -I'm very grateful- thank you!

(To read the discussion-sequence generated by any tweet look at the 'replies' to that tweet.)

This was another conversation (about students' use of individual mini-whiteboards) generated by a reply to Simon's first question ...



Mr S Maths @MrSMaths11 · 15h

Replying to @ballyzero

Not quite new but significantly increasing MWB use. We've now got them in zip up wallets with pen and rubber which makes it so much easier to manage the logistics of handing out and collecting in! #mathscpdchat





Mr S Maths @MrSMaths11 · 15h

Replying to @MrSMaths11 and @ballyzero

Really good. There's a box on the windowsill for each row and it's turned into a bit of a race for which row can hand them out/in the quickest! I've always found them useful before but they've been such a pain to use I just haven't really. #mathscpdchat



Simon Ball @ballyzero · 15h

Replying to @MrSMaths11

It's all about the routines, isn't it? How do you decide what questions they'll do on their mini whiteboards? #mathscpdchat



Mr S Maths @MrSMaths11 . 15h

Replying to @ballyzero

We do a retrieval started at the beginning of most lessons, doing those on MWBs is a quick way for me to see if we should spend any lesson time on it as well #mathscpdchat



Mr S Maths @MrSMaths11 · 15h

Replying to @MrSMaths11 and @ballyzero

My sixth form groups also like using them for rough working sometimes as well #mathscpdchat



Simon Ball @ballyzero · 15h

Replying to @MrSMaths11

So your lesson content can change depending on the starter? Is there any pressure on that - as in, keeping up with the SoL? #mathscpdchat



Mr S Maths @MrSMaths11 - 14h

Replying to @ballyzero

Oh no, I just slot it in somewhere later in the week. The retrieval topics are part of their homework so they need to be at least somewhat competent with them! #mathscpdchat

... and this next interchange focused on an about-to-exist new online resource:

...





Connected @educonnected · 16h

Replying to @ballyzero

We really like this which we just read about recently. Such a simple and immediate switch to make in your practice yet so much more engagement and deep thinking encouraged as result. Credit to @gareth\_metcalfe! #mathscpdchat



"I often tell my students
how many questions
they have got
correct/incorrect and
ask them to find their
mistakes. This gives the
child more thinking to
do than when the
questions are marked."
- Gareth Metcalfe from
iseemaths.com



Simon Ball @ballyzero · 16h

Replying to @educonnected and @gareth\_metcalfe

Very nice! If the pupil is unable to progress with even those hints, how would you support them further? #mathscpdchat



Connected @educonnected - 15h

Replying to @ballyzero and @gareth\_metcalfe

Great question. It's worth noting he caveats the method by saying he only does this when there's a not clear misconception behind the errors!

Assuming there isn't, obvious strategies i.e checking worked examples would help + maybe sharing 'common errors' to cross-check against...

A teacher mentioned a challenging new teaching arrangement that is proving to be manageable:



Mr N 🦔 @MrNapthine · 15h

Replying to @ballyzero

Teaching y2, y5 and y6 maths at the same time every day! Great times



Simon Ball @ballyzero · 15h

Replying to @MrNapthine

Wow, that sounds like a challenge! How do you find teaching such varied age groups? #mathscpdchat





Mr N 🦔 @MrNapthine - 15h

Replying to @ballyzero

It's a y5 and 6 split year class. I have no y2 children but I have pupils working at that level.

To be honest it's working well and I like the white rose resources. The class are a pretty independent bunch.

Another teacher is making greater use of manipulatives this term:



Hannah I @missD\_Maths · 15h

Replying to @ballyzero

Using manipulatives much more this year #mathscpdchat



Simon Ball @ballyzero · 15h

Replying to @missD\_Maths

Ooooh! This is something I don't feel I can introduce. Which ones are you using, and how is it going? #mathscpdchat

(Note: the #mathsCPDchat on 20 September 2022 was about using manipulatives.)

This discussion was about ways of supporting the teaching and learning associated with Entry Level Maths:



Catherine Edwards @Edwards08C · 17h

Replying to @ballyzero

Teaching entry level for the first time in a long long time. #mathscpdchat

(Note: Entry Level Maths is a maths course which is less demanding than GCSE, but is intended to help learners progress to the equivalent of GCSE grade 4/5. It is accredited by exam boards such as AQA, OCR, and Edexcel.)



Simon Ball @ballyzero · 17h

Replying to @Edwards08C

That sounds like a big task! How have you prepared yourself? #mathscpdchat



Catherine Edwards @Edwards08C · 17h

Replying to @ballyzero

Mostly reading the spec and assessment materials, then a lot of looking on twinkl. Not as prepared as I'd like to be really, fortunately I have an amazing HLTA who supports me.#mathscpdchat





Simon Ball @ballyzero · 17h

Replying to @Edwards08C

That sounds very helpful. I've never used twinkl - would you recommend it, and what for in particular? #mathscpdchat



Catherine Edwards @Edwards08C · 17h

Replying to @ballyzero

There is loads of stuff and can be a bit hit and miss (like any resource bank) it's been great so far and I've often used it with nurture. It would depend on your group a lot of this group need significant EAL

support too so the primary stuff helps #mathscpdchat



Kate Hogan @KateHogan23 · 17h

Replying to @Edwards08C and @ballyzero

I'm teaching it too to one of my students. Any tips for resources? Don't have twinkl but using some ten ticks sheets along with my own ideas



MrS\_devon 💀 @Maths\_Devon · 17h

Replying to @KateHogan23 @Edwards08C and @ballyzero

Marsmaths. #mathscpdchat



Catherine Edwards @Edwards08C · 17h

Replying to @KateHogan23 and @ballyzero

Honestly I've only used twinkl

I'm doing the time and calendar component.

I wonder if the white rose primary stuff will help? #mathscpdchat



Kate Hogan @KateHogan23 · 16h

Replying to @Edwards08C and @ballyzero

Yes also using white rose (usually year 1) and mathsbox although really only skills checks and number up sheets



Rebecca Atherfold @becatherfold · 16h

Replying to @Edwards08C @KateHogan23 and @ballyzero

Mathsbox is great if you want primary resources that don't have a year group on #mathscpdchat



Rebecca Atherfold @becatherfold . 16h

Replying to @becatherfold @Edwards08C and 2 others

@mathsbox1 often opens up the website so you can see the resources #mathscpdchat

\*\*\*



The following three discussions were also in response to the host's first question, which is shown again as a reminder:



Simon Ball @ballyzero · 17h

Good evening, all! Time for another #mathscpdchat. Please make sure to include the hashtag in your replies, so that we can all see your fine contributions.

Q1) What are you trying in your maths teaching that's new to you this year?

In this conversation initiated by a reply to Q1 a teacher discussed with the host how 'language of the lesson' is/may be interpreted in maths lessons in that teacher's school ...



TM @ @tm maths · 16h

Replying to @ballyzero

I'm trying to get pupils to verbalise their answers and thoughts clearly with accurate terminology. Takes a lot of effort listening to this pupil and managing a class, but I'm getting there. #mathscpdchat



Simon Ball @ballyzero · 16h

Replying to @tm\_maths

Nice! How are you ensuring the accurate verbalising results in accurate writing of answers/terminology, etc,? #mathscpdchat



TM @tm\_maths · 16h

Replying to @ballyzero

Across the school, we have "language of the lesson" so it's expected that pupils use this word(s) throughout the lesson. I'd also get pupils to correct each other if necessary and reward excellent answers. Once a pupil gives an answer, I write it down and they copy.



Simon Ball @ballyzero · 16h

Replying to @tm\_maths

Sounds good to me! How is the "language of the lesson" element decided? #mathscpdchat



TM @ @tm\_maths · 16h

Replying to @ballyzero

When I'm planning, I think about what's the most important word they'll be using and put that into a PPT. So across the school, the routine is, pupils copy this 'PCD' slide, which means, "planner, copy, do-now" Also the department has created a excel file with LOTL #mathscpdchat



PLANNER - Open on today's date.		Tuesday, 27 September 2022
COPY After ruling off or on a	Solve one and two step equations and inequalities.	
	<u>solution set</u> : a set of all the solutions to e.g. The solution set = $\{1, 2, 3\}$ .	an equation
new page		
In silence, DO on MWB:  1. $5x + 2 > 27$ 2. $3x - 9 \le 36$ 3. $10 < 3p - 1$ 4. $12 \ge 7 + 4t$		



Simon Ball @ballyzero · 16h

Replying to @tm\_maths

Okay, so sometimes centrally, and sometimes by the teacher themselves. Thanks for that! #mathscpdchat

... whereas these reflections were specifically about 'teacher talk' in lessons:



MrS\_devon 👨 @Maths\_Devon · 16h

Replying to @ballyzero

Could be controversial, but less chat from me and quicker into the students working. Much more stopping to check answers and discuss mistakes. #mathscpdchat



Simon Ball @ballyzero · 16h

Replying to @Maths\_Devon

Not at all! Does 'less chat' mean 'less teacher talk'? I worry I need to refine my own explanations sometimes, to make them snappier... #mathscpdchat



Alistair Carratt @MrARCmaths · 16h

Replying to @Maths\_Devon and @ballyzero

That strategy worked for the college groups I used to work with.



MrS\_devon 👨 @Maths\_Devon - 15h

Replying to @ballyzero

I think sometimes I try to explain everything at the start, so maybe it means less teacher talk. #mathscpdchat





Simon Ball @ballyzero · 15h

Replying to @Maths Devon

I'm trying to pace my talk better too - it's a tough one! Good luck and good skill in your quest! #mathscpdchat

This dialogue (conducted mostly by means of quote-retweets rather than replies) included the positive statement that 'I just let them know that they can do it, and they usually can':



Joanne Green @MsJoanneGreen · 19h

@mathscpdchat @ballyzero I'm working at a brilliant school, so I've had to be picky. I'm focussing the pupils on being 'exact' For example, Q1a), Q1b), etc., so other people can connect the Q&A where only answers are written. Also < and not  $\bot$  or  $\angle$ .



Simon Ball @ballyzero · 19h

Replying to @MsJoanneGreen and @mathscpdchat

I like that! I'm quite guilty of scruffy notation from time to time - have to have crisp u's and v's, especially when teaching calculus! How are pupils rewarded for correct notation and labelling? #mathscpdchat



Simon Ball @ballyzero · 19h #mathscpdchat



MsJoanne Green @MsJoanneGreen · 19h

Well, uhmm... it's sort of negative encouragement really. I like it to be correct, I have high expectations of them. If they get it correct, then I'll not sit next to them again in class 💋 🚅 twitter.com/ballyzero/stat...



Simon Ball @ballyzero · 19h

Replying to @MsJoanneGreen

Hahahaha! Are you finding that some of them like the safety net of having you sit next to them? #mathscpdchat



Joanne Green @MsJoanneGreen · 19h

@ballyzero #mathscpdchat oh gosh, yes! I have my 'regulars'. That's nice, as we have a bit of a social whilst waiting or learning. I just let them know that they can do it, and they can usually. Pupils lack confidence mostly and not talent.

All the discussions and replies above were in response to the host's first main question which directly focused attention on the topic of this #mathsCPDchat. Consequently, Simon's second main question, tweeted towards the end of the chat ...





Simon Ball @ballyzero · 19h

Q2) What are you going to refine that you introduced last year? Let us know if you're ditching something, too! #mathscpdchat

... prompted only one conversation:



Catherine Edwards @Edwards08C · 19h

Replying to @ballyzero

More manipulative across the board. Used them with low prior attainment last year. In all my classes this year #mathscpdchat



Simon Ball @ballyzero · 19h

Replying to @Edwards08C

A ringing endorsement! Which ones do you use? #mathscpdchat



Catherine Edwards @Edwards08C · 19h

Replying to @ballyzero

Algebra tiles, double sided counters, numicon, Diennes blocks, bead strings.

Want to get my head round cuniserre rods but don't have capacity this year.#mathscpdchat



Simon Ball @ballyzero · 19h

Replying to @Edwards08C

Wow, I'm not surprised! I've not even heard of bead strings - are they roughly like an abacus? #inquisitive #mathscpdchat



Catherine Edwards @Edwards08C · 19h

Replying to @ballyzero

Yes like an abacus, but just a long string coloured in groups of ten. Frees up their fingers #mathscpdchat



The host's closing tweet ended with a very true statement:





# Simon Ball @ballyzero · 19h

That's all we have time for, Maths fans! Huge thanks to everyone who's contributed tonight - #mathscpdchat would be literally nothing without you.

