

#mathscpdchat 25 May 2021

What have been the 'highlights' in your maths teaching this term so far?

Hosted by [Kathryn Darwin](#)

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



The graphic features a large teal hashtag symbol on the left. To its right, the text '#mathscpdchat' is written in white. Further right, 'Today' is in a yellow box, followed by 'Tuesday, 25 May, 7-8pm'. A central photograph shows a teacher and three students in a classroom setting, looking at a tablet. Below the photo, the text asks 'What have been the 'highlights' in your maths teaching this term so far?'. At the bottom, it says 'Hosted by Kathryn Darwin @Arithmatics' and 'ncetm.org.uk/mathscpdchat'. The NCETM logo is in the bottom right corner.

#mathscpdchat

Today
Tuesday, 25 May, 7-8pm

What have been the 'highlights'
in your maths teaching
this term so far?

Hosted by Kathryn Darwin @Arithmatics
ncetm.org.uk/mathscpdchat

Among the links shared during the discussion were:

[Where in the world is a trapezoid a trapezium?](#) which is a Cambridge Mathematics blog post by Rachael Horsman. The author clarifies some important issues to think about when you are working on anything related to the classification of quadrilaterals. It was shared by [Heather Scott](#)

[Mathigon Polypad](#) which provides online spaces in which users can work with online manipulatives that are polygonal tiles. It includes specific spaces for special tiles such as Penrose, Kolam and Tantrix Tiles. It was shared by [Heather Scott](#)

[Quizizz](#) which is an online platform providing quizzes with which students can engage from any device, and get instant feedback on their responses. Quiz subjects address learning about mathematical ideas such as 'Vertical Angles', or 'Parallel lines'. It was shared by [Heather Scott](#)

[Boss Maths: Vocabulary](#) which are free-to-download resources from [Sudeep](#). Each clearly presented, illustrated 'page' aims to relate a mathematical term to key words from other subjects (or words in common use) that share the same etymology. It was shared by [Sudeep](#)

[Taxicab geometry](#) which is the Wikipedia entry about a 'form of geometry' that students often enjoy exploring while practising using mathematical knowledge in a purposeful way. It was shared by [Perseus](#)

[Mathspad: Pythagoras](#) which is a two-page interactive resource consisting of tasks in which users are challenged to work out the length of the third side of a right-angled triangle given the length of two sides. It was shared by [Alice Ward-Gow](#)

The screenshots below, of chains of tweets posted during the chat, show conversations about what teachers, having reflected on their maths teaching during the first half of this term, want to develop, retain or get rid of in the next half term. You can see how conversations developed from what some people 'said' they want to do! **Click on any of these screenshots-of-a-tweet to go to that actual tweet on Twitter.**

The conversations were generated by this tweet from [Kathryn Darwin](#):



and included these from [Naomh Mackie](#) and [Kathryn Darwin](#):



 **Kathryn MCCT** 🧐 @Arithmaticks · May 25 ...
How are you going to encourage the maths talks with Y7? [#mathscpdchat](#)

 **Naomh Mackle** @NaomhMackle · May 25 ...
Lots of questioning as to why they use a particular method, efficiency, what knowledge is important, how we can refine our explanations with use of mathematical language. They are well used to be me playing "devil's advocate" now and questioning their approaches.

[#mathscpdchat](#)

these from [Laura Gilbert](#), [Kathryn Darwin](#), [Mr Taylor](#) and [Sudeep](#):

 **Laura** @mathsteachlaura · 21h ...
Replying to @Arithmaticks
1. Next half term I want to develop my use of etymology and morphology in the classroom
2. Next half term I want to keep my weekly retrieval practice quizzes with year 10
3. Next half term I want to bin the terrible weather students have to stand outside in!
[#mathscpdchat](#)

 **Kathryn MCCT** 🧐 @Arithmaticks · May 25 ...
Replying to @mathsteachlaura
I like everyone's optimism with their choices for 3 so far. Like we are SLT and/or Weather Gods. [#mathscpdchat](#)

 **Kathryn MCCT** 🧐 @Arithmaticks · 21h ...
Also tell us more about etymology and morphology?! [#mathscpdchat](#)

 **Laura** @mathsteachlaura · 21h ...
I would like to build a bank of PPT slides for key mathematical vocabulary (including meaning, origins, etc) to be able to insert into lesson plans... with the aim that after a while I will naturally discuss with students unprompted
[#mathscpdchat](#)

 **Kathryn MCCT** 🧐 @Arithmaticks · 21h ...
Oh PLEASE share these once you have made them! [#mathscpdchat](#)

 **Laura** @mathsteachlaura · 21h ...
Will do! [#mathscpdchat](#)

 **MrTaylorMaths** @MrTaylorMaths2 · 21h ...
I think [@boss_maths](#) has some etymology on his website?



Sudeep @boss_maths · 20h

...

Yes indeed. Tbh I don't use these slides myself but I do try to take any available opportunity to weave in the kind of links you see here.

(I've added more slides since the below tweet, so there's a fair amount to use as a starting point if you like.)



Sudeep @boss_maths · Feb 21, 2020

A resource to help relate maths terms with key words from other subjects or words in everyday use. Downloadable from bossmaths.com/vocab

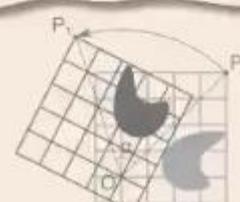
[Show this thread](#)

rota *n.* wheel (Latin)

rota *n.*
1. A schedule allocating tasks, duties, or privileges on a cyclical basis.

rotate *v.*
1. To spin.
2. To take turns.
3. In mathematics, to move a space around a certain fixed point.

Nurse night duty rota						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
Jack	Jill	Jack	Pam	Jill	Sam	Sam



0:09
19.9K views



Laura @mathsteachlaura · 20h

...

Thank you for this! I had seen your previous tweet and been very excited about these! They are fab 😊



Sudeep @boss_maths · 20h

...

If you're able to share your slides, I'd love to see them—I find all these linguistic links so fascinating!



Laura @mathsteachlaura · 20h

...

Me too! I love it 😊. I'm wanting to spend some time talking about etymology more generally with my tutor group too!

these from [Catherine Edwards](#) and [Kathryn Darwin](#):

-  **Catherine Edwards** @Edwards08C · 21h ...
Replying to @Arithmaticks
1. Students using self explaining questions to help them solve problems.
2. "Atomising" and booklets
3. Can I pick moving classrooms?
[#mathsCPDchat](#)
-  **Kathryn MCCT** 🧐 @Arithmaticks · 21h ...
Oh please tell me more about these self explaining questions?
I mean you can pick that for 3. but I cannot promise it will happen :p
[#mathscpdchat](#)
-  **Catherine Edwards** @Edwards08C · 21h ...
I tried it today, I kept repeating myself - so polygon problems script
Is it regular?
Do you know no sides?
Can you calc exterior angle?
Can you calc interior angle?
Are there repeated angles?
See a straight line, full turn etc?
Want to get them to write their own [#mathsCPDchat](#)
-  **Kathryn MCCT** 🧐 @Arithmaticks · 21h ...
I love this! I do lots of similar things... but maybe I need to be more purposeful
and deliberate with it! [#mathscpdchat](#)
-  **Catherine Edwards** @Edwards08C · 21h ..
The purposeful and deliberate is what I'm aiming for. I want to try it for method
selection and revision notes. Move away from learned helplessness and onto
how to be a little more proactive. [#mathsCPDchat](#)

these from [Alice Ward-Gow](#), [Kathryn Darwin](#) and [Catherine Edwards](#):

-  **Miss Ward-Gow** @mcwardgow · 21h ...
Replying to @Arithmaticks
1. Develop a whole school Numeracy map (during gain time)
2. Keep using interesting questions/resources from Twitter
3. Bin the focus on Y11 TAGS 🤖 [#MathsCPDChat](#)
-  **Kathryn MCCT** 🧐 @Arithmaticks · 21h ...
Good binning!
What does the whole school numeracy map involve? [#mathscpdchat](#)

- Miss Ward-Gow** @mcwardgow · 21h ...
 I've got a list of which Numeracy/maths objectives each subject uses. Next job is to include when we teach them and then I need to ask other subjects when students need the skills for their subject and check that we teach things at the right time 😊 #MathsCPDChat
- Kathryn MCCT** 🧐 @Arithmaticks · 21h ...
 Oh I like this... so seeing when and how science/geog etc teach the maths elements? #mathscpdchat
- Miss Ward-Gow** @mcwardgow · May 25 ...
 Replying to @Arithmaticks
 Yeah that's the plan 😊 this half term we realised that Year 9s were having trouble with conversions/scales in engineering and this was partly because that was a topic covered in lockdown 1. So we've now addressed that in maths 😊 #MathsCPDChat
- Kathryn MCCT** 🧐 @Arithmaticks · May 25 ...
 We have done similar and put lots of stats in a 'project' at the start of Y7 as they use it so early on! #mathscpdchat
- Catherine Edwards** @Edwards08C · 21h ...
 I'm mid working on this and agreeing a common method across subject areas. We're starting with a few areas and then building up as we get used to the idea. #mathsCPDchat
- Kathryn MCCT** 🧐 @Arithmaticks · 21h ...
 We're working a lot with science at the moment - slow but steady! #mathscpdchat
- Catherine Edwards** @Edwards08C · May 25 ...
 We're starting with graphs and percentages as nearly every subject uses those and then planning to add in other skills. I have my sights set on formula triangles for after Christmas! #mathsCPDchat
- Miss Ward-Gow** @mcwardgow · May 25 ...
 Replying to @Edwards08C and @Arithmaticks
 Sounds great 😊 I'll need to do some work on common vocabulary/methods within the maths department before I can branch out to other subjects 😊 #MathsCPDChat
- Catherine Edwards** @Edwards08C · May 25 ...
 I was actually pleasantly surprised at how aligned we all were in our dept given we don't have any calculation policy. #mathsCPDchat

and these from [Perseus](#) and [Kathryn Darwin](#):

-  **Perseus XRI+MM1** @futharkvillage · 21h ...
Replying to @Arithmaticks
1. Next term I want to develop a better assignment for assessing my students' understanding of quadratics. I still want them to make a video game, but I need to structure it better so they can do it faster, and it is less of a test of their ability to write code. #mathscpdchat
-  **Perseus XRI+MM1** @futharkvillage · 21h ...
2. Next term I want to keep the kids up at whiteboards. I almost never have them sit, they are always at the boards. They are so much better at helping each other this term!
3. Next term I want to bin my unit on taxicab geometry and make a better one from scratch. #mathscpdchat
-  **Kathryn MCCT** 🧑🏻 @Arithmaticks · 21h ...
Oh my... do you have whiteboard walls!? Sounds like heaven! #mathscpdchat
-  **Perseus XRI+MM1** @futharkvillage · 21h ...
We got a grant to redo our classrooms. I spent mine on whiteboards for everyone. Some students write on the windows instead, and that's cool too.

#mathscpdchat

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

Other areas where discussion focused were:

the host's first question focused on the environments in which maths teaching and learning has happened during the first half of this summer term:

- most teachers have **enjoyed being back in the classroom with students** ... some teachers are not yet doing all their maths teaching in one (their own) classroom as they were doing before the pandemic ... most teachers are now allowed to 'move around the classroom wearing a mask' ... some students are wearing masks ... some 'in-person' staff meetings have happened;
- teachers are **trying to focus on positive aspects of their work**;
- **being able this term to 'circulate' while teaching in a classroom has facilitated some aspects of teaching** ... for example, it is 'so much easier for picking up and dealing with misconceptions quickly' ... behaviour management is easier, 'quickly getting students back on task etc';
- the **wearing of masks by students has caused some communication difficulties** ... 'I struggle to hear them at times';

- **a few teachers have had to return recently to remote online teaching only** ... 'we were just getting excited about being almost 'normal' but then sadly we had to close due to Covid ... in the Hounslow borough where it's pretty bad again' ... the transition to online teaching/learning was 'easier this time – like riding a bike (sadly)';
- for teachers for whom part of their role is working with teachers in other schools 'it has been so lovely to finally feel like I'm starting to do my role 'properly' now I can visit and support the 5 schools I work with ... writing an EY maths curriculum, developing Mastery teaching, supporting individual children' ... 'same for me, **I can get into the schools I work with and see people in person, and the children**';
- some primary and secondary teachers commented that they are '**having to go over quite a lot of stuff they missed out on this time last year**' ... teachers are appreciating help with planning their teaching, for example a primary teacher wrote 'it's great @NCETM have come out with some guidance and advice on slimming down topics' ... 'today my Year 4s struggled to remember what a trapezium is' ... 'if it helps my Year 9s kept calling a parallelogram a trapezium last week' ... this last exchange between a primary teacher and a secondary teacher prompted **a discussion about classifying quadrilaterals** during which these tweets were posted ...



Heather Scott @MathsladyScott · 20h

I'm thinking a parallelogram is a trapezium? mathsisfun.com/quadrilaterals...
love all the interconnections with quadrilaterals 🍷 #mathscpdchat



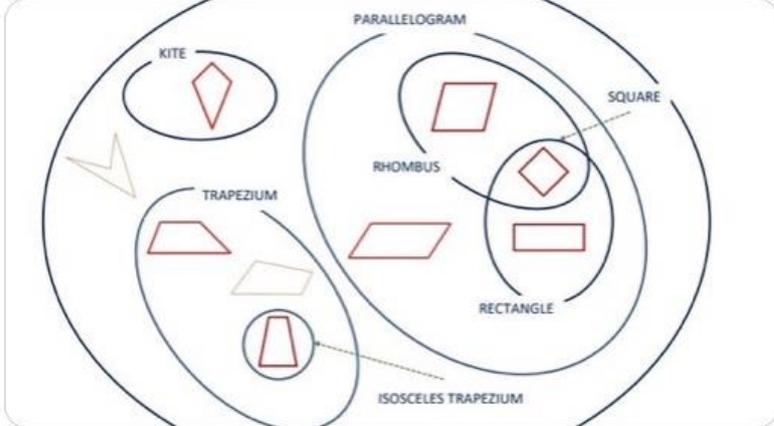
Robert J Smith @RJS2212 · 20h

Replying to @Arithmaticks @martynyeouk and @Elsie2110

Did you not tell them: A trapezium is not a parallelogram because a parallelogram has 2 pairs of parallel sides. But a trapezium only has 1 pair of parallel sides.

Peter Lacey @ecarda1 · 5h ...

The group task below generated interesting discussions.



1 ↻ 1 ↗

Kathryn MCCT 🧐 @Arithmatics · 5h ...

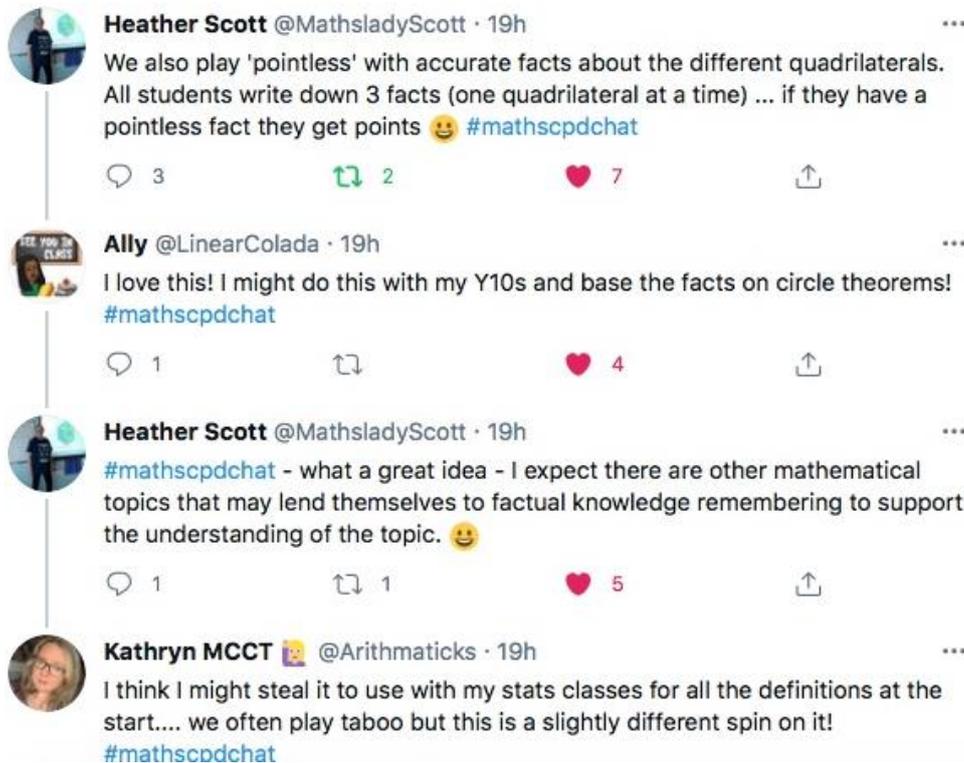
Ooh so no trapezia and parallelogram overlap in yours?!

1 ↻ 2 ↗

Peter Lacey @ecarda1 · 5h ...

There's always a discussion to be had! And that's the joy of collaborative working. Linking the relationships across quadrilateral with their properties is a challenge.

- this discussion about classifying quadrilaterals developed into a **more general discussion about helping students acquire mathematical factual knowledge ...**



- some teachers discussed **consequences of not being able to take home students' exercise books** ... 'enjoying less marking at the moment' ... the host asked 'Do you think the change in marking has made a difference to your teaching or students' learning?' ... 'have more time to do (plan) better lessons' ... 'being in primary – I see them all day everyday – they are constantly getting feedback, so marking just feels like a tick box exercise for someone else to see you are doing it' ... 'I feel the same, in KS4 I use whiteboards and circulate so much, I want to correct things FAST and not let a misconception be practised';
- after having to teach remotely for months **it's really nice to see maths on paper** ... 'I love being able to just put a little circle around something, or a dot, rather than having to say 'have a think about the 3rd line where you've got the 5, - no, the second 5 on that line ...';
- some teachers appreciate **being back in a classroom where they are better able to observe students' mathematical thinking**, for example ...



- a teacher commented that **so many things are just so much faster in person** and I'm loving not having to spend half my lesson giving IT support';

the host asked what has been a particular highlight for each teacher:

- many teachers replied that **'so many come to mind'** ... a very common response was **'just how well students (especially exam years) have adapted and responded to everything'**;
- the fact that **teachers are now able to meet in person again** was a popular 'highlight' ... 'I feel like I've reconnected with everyone again' ... 'so many useful conversations happen casually, in passing, in a dept. I missed this over the second lockdown';
- for many secondary teachers the highlight was 'finishing TAG marking and getting to spend some time with Y11s before they finish' ... 'I can see **how much Y11 have learned, despite this crazy year'**;

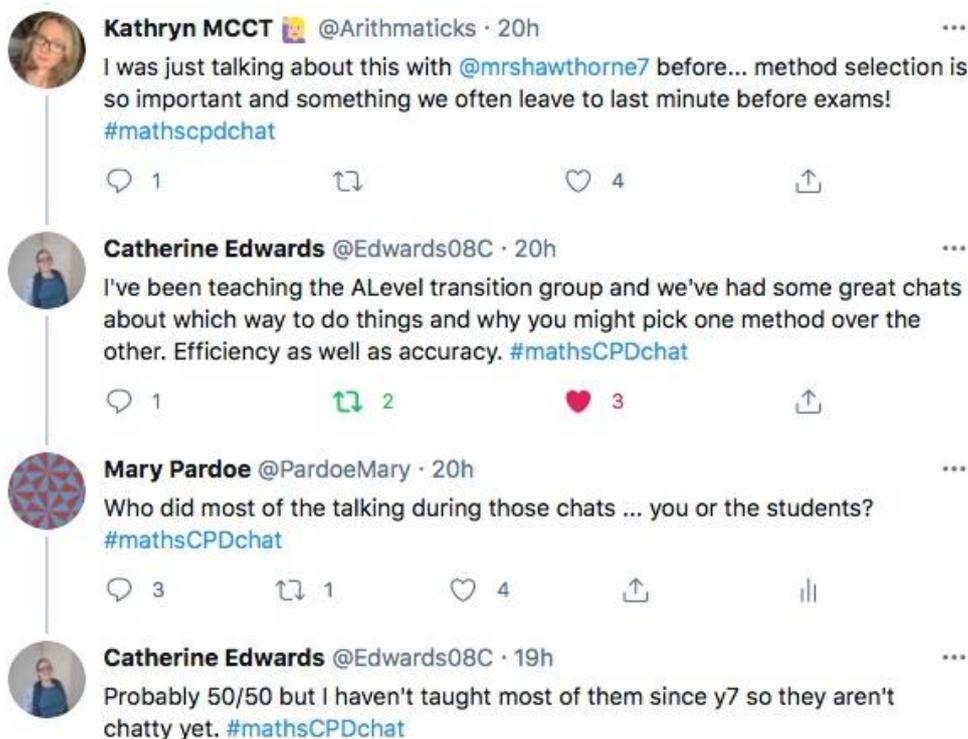
the host asked teachers to describe any materials or teaching strategies that they are now using in the classroom as a direct consequence of their online teaching experiences:

- many teachers are **setting online tasks**, such as quizzes, but students engage less with them than they did during the lockdowns;
- many are still using **Onenote** ... 'I now make a page for each lesson and write on it with my graphics tablet. At the end of the lesson I distribute the page to the pupils' 'books';
- many are **setting homework online**, through Teams ... 'and feedback is given through MS Teams';
- some teachers are **sending emails to students more frequently** than they did before the lockdowns, and 'they (students) email me more often';
- at least one teacher now puts **'less stuff on the screen/board at once** ... students having to read off their mobile phone screen made me realise just how much I used to shove up at once';
- many teachers are still **'recording lessons for absent students to access**, particularly whilst we still have a number isolating periodically'
- some teachers now always use a **graphics tablet** in lessons 'instead of having my back to the students while I write on the board';

the host asked teachers to describe what they believe was their best lesson this term:

- at least one teacher **'loved teaching constructions this term** ... we have had some real 'wow' moments' ... this comment prompted a brief discussion about each student having a compass and ruler and being able to use them effectively ... one teacher and her students use Mathigon's *Polypad* (link provided above) ... 'I'm hoping when I do hand out the equipment later on they will be able to use it more effectively';
- one teacher enjoyed **a lesson with Y9 students on Pythagoras' Theorem** ... 'by the end of the lesson all students could calculate the length of a hypotenuse';
- another teacher's 'best lesson' was one in which she **introduced a lower Y7 set to algebra tiles** ... **'it made such a difference to their understanding of collecting like terms and dealing with negatives'** ... the idea of zero pairs helped the students ... this comment

- prompted a brief ‘chat’ about ‘the magic sound effect that zero pairs make’ when they combine ...’poof’, ‘pop’, ‘a zoom to pair up followed by a squelchy pop to disappear’;
- in response to the host’s question a teacher commented that ‘I absolutely flew through my **exponential growth unit**, and the students got good grades on the quiz for it’ ... ‘it was mostly about loans’ ... ‘I think seeing how the function grew and changed helped them to understand the potential dangers of credit’ ... another teacher added ‘bit of a crossover with Covid growth as well’;
 - one teacher’s ‘best lesson’ looked at **method selection for percentage increase** ... ‘I was able to encourage students to think about which method may be best and when’ ... this comment **prompted some more general chat about students discussing ‘why you might pick one method over the other’** ...



although almost all of the responses to the host’s last question are shown in the sequence of linked-to-Twitter screenshots on pages 2 to 7 above, a teacher also mentioned:

- wanting to **develop KS2 pupils’ understanding of shape** ... and wanting to **stop stressing about what KS2 pupils have not done** owing to the lockdowns.