

#mathscpdchat 8 February 2022

How do you support the CPD of yourself and others in a busy school schedule?

Hosted by [Kathryn Darwin](#)

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



The graphic features a large teal hashtag #mathscpdchat on the left. To its right, the text 'Today' is in a white box, and 'Tuesday, 8 February, 7-8pm' is below it. Two photographs show people in professional settings: one with a man pointing at a computer screen to a woman, and another with three people in a meeting. Below the photos is the question 'How do you support the CPD of yourself and others in a busy school schedule?'. 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, 8 February, 7-8pm

How do you support the CPD of yourself and others in a busy school schedule?

Hosted by Kathryn Darwin @Arithmatics

ncetm.org.uk/mathscpdchat

The links shared during this discussion were:

[Guiding Principles](#) which is the page on the ATM website where you can read the association's principles for guiding any kind of professional development activity of mathematics teachers at any level. It was shared by [Mary Pardoe](#)

[Improving teaching and learning: ideas for heads of department](#) which is a blog article on the Improving Teaching website by Harry Fletcher-Wood. It includes advice about how to develop the department as a professional learning community. It was shared by [RHMaths](#)

[Heads of department improving teaching: three key steps](#) which is a very recent blog post on the Improving Teaching website by Harry Fletcher-Wood. The author describes how effective HODs prioritise improving teaching, 'know where they're going, and how to get there', and have the time and support this requires. It was shared by [RHMaths](#)

[Do they understand this well enough to move on? Introducing hinge questions](#) which is another blog article on the Improving Teaching website by Harry Fletcher-Wood. The author describes how using 'hinge questions' in any subject can improve the teacher's 'appreciation of what students are thinking'. It was shared by [RHMaths](#)

[#MathStratChat](#) which is the part of the website of Pam Harris where you can see the 'calculations' (mostly numerical expressions, such as $49 + 92$) that she has posted at regular intervals on Twitter, and the wide variety of methods that people have suggested as 'best' ways of evaluating them (mentally). It was shared by [Tessmaths \(Julia Smith\)](#)

[Developing Mathematical Reasoning - online workshop](#) which is the part of the website of Pam Harris where she describes her free online workshops that focus on ways of seeing that and how math(s) is 'Figure-Out-Able'. It was shared by [Pam Harris](#)


[Teaching with multi-base : Escaping my own base-ten world first](#) which is an illustrated blog article by [Atul Rana](#) on his website, in which he explains how, and where to go, to equip yourself with the knowledge/understanding you need in order to start using work-with-numbers-in-bases-other-than-ten effectively in your teaching. It was shared by [Atul Rana](#)

[Diagnostic Questions](#) which is a website containing questions for primary, KS3 and GCSE students that are designed to reveal common misconceptions in order to 'intervene effectively in students' learning'. It was shared by [Richard Dare](#)

[Variation Theory](#) which is a website created by [Craig Barton](#) in order to 'assemble a collection of high-quality, sequences of questions and examples using key principles from Variation Theory'. It was shared by [Richard Dare](#)

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


Kathryn's first question ...

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...

So let's kick off with a logistics question. We're talking MATHS SPECIFIC CPD time tonight, so I want to know... how does this fit into your directed time? Do you get it each week? Once a fortnight? Less? More?

[#MathsCPDChat](#)

... prompted many replies and conversations, such as this conversation with a primary teacher:

 **Martyn (He/Him)** @martynyeouk · Feb 8 ...

Replying to @Arithmaticks

That's really interesting because in primary there can be little time to subject specific CPD unless it is on the school action plan [#mathscpdchat](#)

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...


Very interesting! How does a typical CPD session look in a primary school then? [#MathsCPDChat](#)

 **Martyn (He/Him)** @martynyeouk · Feb 8 ...


Our CPD sessions look similar to secondary I can imagine, but it is more the fact we don't have them regularly [#mathscpdchat](#)

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...

How do you balance this with a want/need to develop? [#MathsCPDChat](#)

 **Martyn (He/Him)** @martynyeouk · Feb 8 ...

Depends on what the school needs really - know im not giving you an easy answer! Maths CPD in primary comes down to more individuals taking it on or if they are subject leads [#mathscpdchat](#)

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...

Nono, I like it... I haven't really considered the difference! How do your leads ensure that other staff are on the same wavelength then?

[#MathsCPDChat](#)

 **Martyn (He/Him)** @martynyeouk · Feb 8 ...

A lot of chatting ;) [#mathscpdchat](#)

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...

I think this is perfectly valid. A good old chinwag about maths!

[#MathsCPDChat](#)

The value of 'casual discussions' was mentioned again, but this time in the context of secondary school teaching, in this discussion:



Matt Man @mr_man_maths · Feb 8

...

Replying to @Arithmaticks

Lots of Maths department discussions, not necessarily CPD but when we discuss exam feedback, that is a gem. Especially when I get to discuss with fantastic colleagues such as Seager and Mel from @Just_Maths
[#mathscpdchat](#)



Kathryn MCCT 🗨️ @Arithmaticks · Feb 8

...

I think these things we see as 'casual discussions' are often the best CPD - learning from experienced colleagues, or what a student did, or what the mark scheme suggests are really underrated in terms of learning potential!
[#MathsCPDChat](#)



Matt Man @mr_man_maths · Feb 8

...

Yep, the ones that Mel @Just_Maths has done recently for GCSE and the ones done from @EmporiumMaths for A Level have been invaluable for lots of teachers. [#mathscpdchat](#)

Secondary school maths department meetings also featured in the following conversations. Some such meetings do not (always) focus on maths-teaching-specific professional development, for example ...



Simon Ball @ballyzero · Feb 8

...

Replying to @Arithmaticks

Department meetings are weekly and we try to devote some time to looking at the scheme of work, etc., and bouncing our thoughts around. Our CPD tends to be more whole-college activities. [#mathscpdchat](#)



Kathryn MCCT 🗨️ @Arithmaticks · Feb 8

...

How long are your meetings together as a department? Do you think these are 'mathematical' enough? Do you think the balance is right?
[#MathsCPDChat](#)



Simon Ball @ballyzero · Feb 8

...

The meeting length varies from 20 to 45 minutes. I could stand to see them being much more mathematical, if I'm honest! [#mathscpdchat](#)



Kathryn MCCT 🗨️ @Arithmaticks · Feb 8

...

In an ideal world, what would your department time agenda look like then?
[#MathsCPDChat](#)

... whereas maths-teaching professional development is the only aim of some others ...



Anthony Shaw @ShawMaths · Feb 8

...

Replying to @Arithmaticks

We meet once a week but it's not directed time. Dept meetings are once a month on average. All CPD not admin.

[#mathscpdchat](#)



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

...

So is that a conscious decision you have made as a department to set aside the extra time? How have you got buy in from the department for that? How do 'monthly meetings' differ from your weekly ones? [#MathsCPDChat](#)



Anthony Shaw @ShawMaths · Feb 8

...

Weekly meetings are a chat about a few methods or resources on a specific topic. Keep it to 30 minutes or so and everyone leaves with new ideas.

Formal dept meetings are on bigger pedagogy ideas like retrieval or variation that come up in the weekly meetings as a bridge.



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

...

I like this a lot. Do you run the larger sessions yourself or is there input from others? [#MathsCPDChat](#)



Anthony Shaw @ShawMaths · Feb 8

...

I've got KS leads who pitch in too. One is on the second year of the NCETM mastery specialist course. So he's a massive resource I use!

[#mathscpdchat](#)



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

...

Good resource, those Mastery Specialists 😊 [#MathsCPDChat](#)

One of Kathryn's questions in her discussion with Simon Ball (above) generated replies from other people ...



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

...

In an ideal world, what would your department time agenda look like then?

[#MathsCPDChat](#)



Richard Dare @dare_richard · Feb 8

...

Replying to @Arithmaticks and @ballyzero

Start with some Maths

Someone models a strategy or poses a problem.

We discuss how to apply what we've learnt.

We practice something of what we've learnt and agree when to try it and feedback.

Biscuits.

[#Mathscpdchat](#)



Miss Ward-Gow @mcwardgow · Feb 8

Share one thing to improve on as a team, then sharing of best practice 👍
[#mathscpdchat](#)

... and this conversation (that included discussion about setting up a maths-department book club):



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

In an ideal world, what would your department time agenda look like then?
[#MathsCPDChat](#)



MrHawesMaths @HawesMaths · Feb 8

Replying to @Arithmaticks and @ballyzero

1. book club
2. new approaches discussion
3. Topic area discussion
4. Cake order for next meeting.

[#mathscpdchat](#)



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

Oooh how would you run the book club? [#MathsCPDChat](#)



MrHawesMaths @HawesMaths · Feb 8

We have a load of CPD books in the staff library. So I would suggest picking one for the half term to read and then in a department meeting discuss what has interested you. Hearing other peoples takeaways will get me inspired to read the same text next half term etc. [#mathscpdchat](#)



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

Oh I like this, so you aren't all going to read the same thing?
[#MathsCPDChat](#)



MrHawesMaths @HawesMaths · Feb 8

I think a bit of variety will entice others to read different books and inspire a change in practice especially as they lead the discussion on what they have read. Not limiting to just maths cpd books either. [#mathscpdchat](#)

Kathryn's first question ...



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

So let's kick off with a logistics question. We're talking MATHS SPECIFIC CPD time tonight, so I want to know... how does this fit into your directed time? Do you get it each week? Once a fortnight? Less? More?
[#MathsCPDChat](#)

... also generated this reply ...



Atul Rana @atulrana · Feb 8

...

Replying to @Arithmaticks

- Daily 5 mins of @LaSalleEd CPD College video in the morning
 - Weekly 30mins Discord video channel with @Kieran_M_Ed @Mr_AlmondED watching and discussing CPD College video
 - Learning to teach Further maths A-level with one tutee
 - Reading maths CPD books
- #MathsCPDchat



Kieran Mackle @Kieran_M_Ed · Feb 8

...

Solid mathematical workout, Atul. 🙌



Atul Rana @atulrana · Feb 8

...

I love maths and love learning!

... and this long conversation:



Richard Dare @dare_richard · Feb 8

...

Replying to @Arithmaticks

We meet once a week as a department.

I'm also lucky to be on the NCETM Mastery Specialist course, for which my school gives me extra study time.



Kathryn MCCT 🧐 @Arithmaticks · Feb 8

...

That is lovely! How long do you meet for each week?

The NCETM SMS sessions are great - lovely to network with others

#MathsCPDChat



Richard Dare @dare_richard · Feb 8

...

Yes!

Our department meet for 50 minutes a week and quite often I get to disseminate goodies I've picked up from the NCETM course, or a book, or

#edutwitter!

#Mathscpdchat



Kathryn MCCT 🧐 @Arithmaticks · Feb 8

...

Sounds ace - do you all get a chance to share? Is there an agenda set before? #MathsCPDChat












Richard Dare @dare_richard · Feb 8

...

A few of us are on NCETM courses, so we do have a variety of input!

The agenda is set in advance, yes, but quite loosely.

#Mathscpdchat

-  **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
Can you give an example of what a typical meeting may look like? :)
[#MathsCPDChat](#)
-  **Richard Dare** @dare_richard · Feb 8 ...
It varies a lot. Quite often our HoF will kick off with something we need to think about immediately.
The best sessions involve us all doing some maths and practicing techniques we're examining: often on MWBs!
[#Mathscpdchat](#)
-  **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
I do think the mark of a good maths meeting is to do some maths together and discuss it! What was your focus in your most recent one?
[#MathsCPDChat](#)
-  **Richard Dare** @dare_richard · Feb 8 ...
Replying to @Arithmaticks
One of our department is on the NCETM KS4 pedagogy course and asked us to represent various problems visually on our MWBs. Some great problems to consider representing and teaching!
[#Mathscpdchat](#)
-  **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
I love this sort of activity because we can represent it differently and I don't always "see" the different ways.
[#mathscpdchat](#)
-  **Richard Dare** @dare_richard · Feb 8 ...
Yes! 😊
-  **MrHawesMaths** @HawesMaths · Feb 8 ...
Last one we focused on the links between number patterns. Nth term and straight line graphs, and how seamless the transition is between these topics. [#mathscpdchat](#)
-  **Richard Dare** @dare_richard · Feb 8 ...
Replying to @HawesMaths and @Arithmaticks
Great stuff! Links to all sorts of proportional reasoning too!
[#Mathscpdchat](#)
-  **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
LOVE IT! Was this then something you could just implement in lessons soon after too? [#MathsCPDChat](#)



MrHawesMaths @HawesMaths · Feb 8

...

Absolutely. It was coming up in our year 8 sow so we discussed it and applied it in our own way sticking to the basic links.

Some teachers would like to see changes in the ways their maths department meetings are used. For example, by providing more time for doing maths together ...

RHMaths @MathsRh · Feb 8

...

Replying to @Arithmaticks

We meet once a week. Less maths than we'd like.

This article and another I'll post has great ideas...



improvingteaching.co.uk

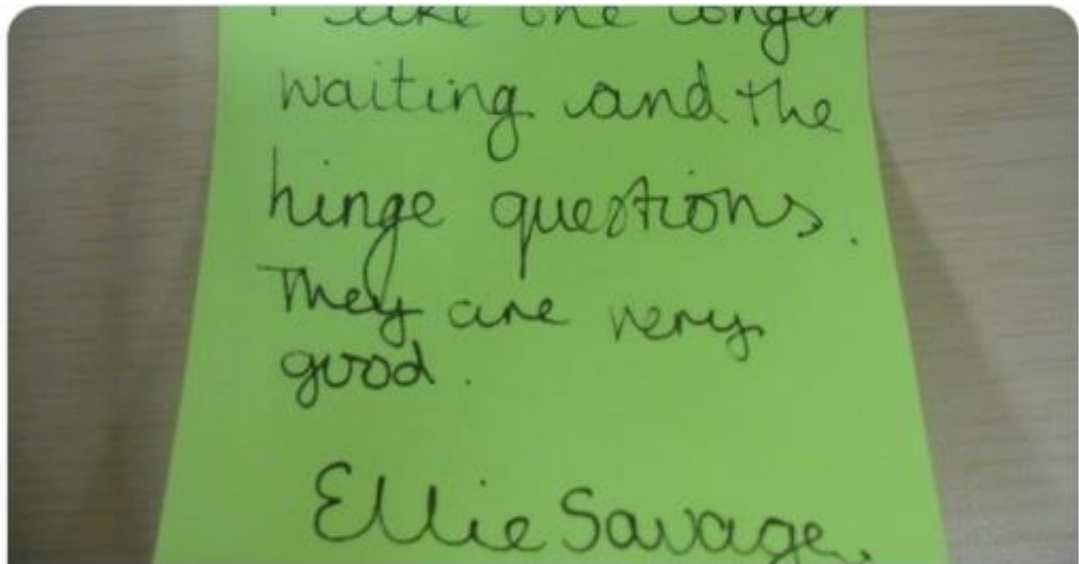
Improving teaching and learning: ideas for heads of department

There's a good case to be made that better teaching and learning is best achieved by departments. Some things can only be solved at a ...



RHMaths @MathsRh · Feb 8

From a history teacher point of view but applies to maths [#mathscpdchat](#)
Could be productive (and non judgemental to create/find/place in SOWs
hinge questions together



improvingteaching.co.uk

Do they understand this well enough to move on? Introducing hinge qu...
What happens when you use hinge questions to check student
understanding? What is a hinge question? A check for understanding ...

... and (showing Kathryn's original/first question again) ...



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

So let's kick off with a logistics question. We're talking MATHS SPECIFIC
CPD time tonight, so I want to know... how does this fit into your directed
time? Do you get it each week? Once a fortnight? Less? More?
[#MathsCPDChat](#)



Claire Perry @perryclaire · Feb 8

None



Richard Dare @dare_richard · Feb 8

That's rubbish! You should be leading PD, Claire!
[#Mathscpdchat](#)



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

Replying to @perryclaire

At all!? How do you deal with this? [#MathsCPDChat](#)



Claire Perry @perryclaire · Feb 8

...

Replying to @Arithmaticks

Infuriating. We are timetabled up to the max with teaching a 29hr week. Meetings have been totally stripped down to bare minimum.

... and ...



Ally @LinearColada · Feb 8

...

Replying to @Arithmaticks

We have department time every 3 weeks and its either standardisation, moderation or admin 😞 #mathscpdchat



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

...

Ah no! How would you like it to be used instead? #FantasyCPDAgenda #MathsCPDChat



Ally @LinearColada · Feb 8

...

Definitely would love more maths! Discussing methods for topics to be taught soon so there is some consistency in the department and share best practice. We are also a dept where 3/5 have taught for less than 4 years

Having asked the first question below in a conversation with Simon Ball, Kathryn started a new thread by again tweeting it ...



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

...

How is your 'departmental time' most commonly used? Do you think you use it to its greatest effect? #MathsCPDChat

... the responses to which included ...



MrHawesMaths @HawesMaths · Feb 8

...

Replying to @Arithmaticks

Department time is rare (not scheduled or timetabled) we meet when we can to discuss best practices. All admin is done via teams chat #mathscpdchat



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

...


Replying to @HawesMaths


That's a shame... why do you think that is? Do you think it should be scheduled?


I love that idea about Teams... how do you ensure all teachers are doing/following it though!? #MathsCPDChat

 **MrHawesMaths** @HawesMaths · Feb 8 ...
Fortunately I have a deputy head of academics who says she will cover me to go round classes when I want to see maths in action. That's how I see it being carried out [#mathscpdchat](#)

(there was another reply to Mr Hawes' first reply above)

 **MrHawesMaths** @HawesMaths · Feb 8 ...
Replying to @Arithmaticks
Department time is rare (not scheduled or timetabled) we meet when we can to discuss best practices. All admin is done via teams chat [#mathscpdchat](#)

 **Richard Dare** @dare_richard · Feb 8 ...
That latter practice is very sensible. I think regular departmental CPD time should be obligatory in all schools!
[#Mathscpdchat](#)

 **MrHawesMaths** @HawesMaths · Feb 8 ...
Couldn't agree more, luckily it will be timetabled in next year.
[#mathscpdchat](#) I had an idea of a book club for the first 20mins of cpd time based on what people were reading (educational research etc.)
[#mathscpdchat](#)

 **Richard Dare** @dare_richard · Feb 8 ...
Replying to @HawesMaths
Oh, yes, I keep meaning to do that! Keep us posted!
[#Mathscpdchat](#)

... and ...


 **Miss Ward-Gow** @mcwardgow · Feb 8 ...
Replying to @Arithmaticks
Checking in with everyone and sharing any key messages/upcoming events etc [#mathscpdchat](#)

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
How long are your meetings? Others have discussed using the time to do some maths together... is this a feature for you? [#MathsCPDChat](#)


 **Miss Ward-Gow** @mcwardgow · Feb 8 ...
It varies- sometimes an hour, sometimes 40 mins. We try to give the team some time back to complete any tasks on to-do lists 😊 we rarely do maths together 🙌 [#mathscpdchat](#)

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
I think this is quite valuable to be honest. In mock season we sometimes have a very short meeting and then let people "have the time back" for marking. Equally important I think! #MathsCPDChat


... and this conversation:

 **Anthony Shaw** @ShawMaths · Feb 8 ...
Replying to @Arithmaticks
I have a CPD plan for the year that plots out uses of dept time for important PD not just admin. Bridging tasks follow each meeting and topics are revisited more than once. #mathscpdchat


 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
I'd love to see that! I assume it follows your kind of action plan for the year...? Can you give an example of a bridging task? #MathsCPDChat

 **Anthony Shaw** @ShawMaths · Feb 8 ...
So after a meeting introducing variation, point people to specific resource banks (thanks @mrbartonmaths) and ask everyone to try one. We then bring them to a meeting later on to discuss what was good or not. #mathscpdchat

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
I love this! So you are constantly talking about best practice and how to make things work. #MathsCPDChat


 **Anthony Shaw** @ShawMaths · Feb 8 ...
I mean it sounds idilic but it's in its infancy. Only started in September really. But we like it so far. #mathscpdchat


 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
Hey, it has to start somewhere! My big issue would be getting buy in for meetings out of directed time I think... #MathsCPDChat

 **Anthony Shaw** @ShawMaths · Feb 8 ...
I get 8 out of 13 teachers there most weeks. Harder for those with other responsibilities. But I think the usefulness of them (and the brevity) helps with buy-in. I aim to pick topics that are coming up in the SOW. #mathscpdchat

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
So you don't expect everyone to come, necessarily? Do you think it is detrimental to those that don't? #MathsCPDChat

 **Anthony Shaw** @ShawMaths · Feb 8 ...
It means they don't get as much out of the formal dept meetings. My union rep part of me won't let me make them mandatory though. 🙄

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
Haha I think this is why I am also worried about it, as I know it shouldn't have to be outside directed time but we all know the realities! I think maybe that is a good way to look at it, you can come and get some learning out of it or not... its kind of on you! #MathsCPDChat

 **Anthony Shaw** @ShawMaths · Feb 8 ...
Replying to @Arithmaticks and @mrbartonmaths
You could argue its a "reasonable request" but I'm hoping it just becomes the norm that we do it. Trainee teachers come too. #mathscpdchat

Kathryn's third question ...

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
Let's zoom in a little, and think about YOU personally. As a profession, we have some responsibility to develop our own practice... what is your go-to to do this? How do you improve yourself as a teacher of maths?
#MathsCPDChat

... prompted several conversations, including this one ...

 **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
Replying to @Arithmaticks
Watching others. I love seeing different approaches (applies to classroom management too). Started delving into research more but then home life got far busier. Slowly picking it back up.
#mathscpdchat


 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
Sounds lovely. How do you then integrate these things into your own practice? #MathsCPDChat

 **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
I tend to do a bit at a time, here and there. I.e. not an organised approach. Then I suddenly realise I haven't brushed up on, say, directed number for a while and read up to incorporate into explanations. My passion for pedagogy is returning.
#mathscpdchat

... in which another reply to Maryse's first tweet above generated more discussion:


-  **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
Replying to @Arithmaticks
Watching others. I love seeing different approaches (applies to classroom management too). Started delving into research more but then home life got far busier. Slowly picking it back up.
[#mathscpdchat](#)
-  **Matt Man** @mr_man_maths · Feb 8 ...
Replying to @AllThingsMaths and @Arithmaticks
That's something that I want to do more, though timetabling is where the issue where we're so busy. [#mathscpdchat](#)
-  **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
Yes... that can be a barrier. Esp at the moment with absence rates.
-  **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
Sometimes at the moment it feels like we are doing so much just to stay afloat! But I also think we forget that elements of the current situation are making us learn too - we'll notice when we look back in years to come!
[#MathsCPDChat](#)
-  **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
Definitely. One thing I liked about online was being able to see everything a student was doing. And having to come up with different ways to explain concepts. It has had an impact on my practice for good.
[#mathscpdchat](#)
-  **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
I'm also far more careful about prior learning because absence has become far more mainstream. This enables my students to better access current learning.
[#mathscpdchat](#)

This conversation was about taking action as a result of reading something in a book:

-  **Simon Ball** @ballyzero · Feb 8 ...
Replying to @Arithmaticks
I have developed the habit of reading books whilst students do tests (instead of clacking on the keyboard - I can also leave a clock on the screen to help them develop timing skills). I record any thoughts I like and thoughts I have in a notebook. [#mathscpdchat](#) 1/2

 **Simon Ball** @ballyzero · Feb 8 ...
Then I try and put what I've learned into practice thereafter, or make the sheet/PowerPoint that I was inspired to. The books may not be maths-specific, either! #mathscpdchat 2/2


 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
Give us an example of something you have changed/made after being inspired then! #MathsCPDChat


 **Simon Ball** @ballyzero · Feb 8 ...
I made a Fraction Maker task during the reading of Chris McGrane's Mathematical Task Design book, and I changed how I teach subtraction when I read A Compendium Of Mathematical Methods! #mathscpdchat

The value of reading was indicated in several conversations. For example, in this interchange


...

 **miss franklin** @missfc_maths · Feb 8 ...
Replying to @Arithmaticks
Books, conferences, currently doing the NPQLT aswell #mathscpdchat

 **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
What books would be your recommendation for someone who is just starting their CPD journey?
How is the NPQ supporting you as a teacher and a leader?
#MathsCPDChat

 **miss franklin** @missfc_maths · Feb 8 ...
Hmmm so many books i would say barton, mccourt, mattock and morgan's books are a good starting point.
Loving the NPQ making me question a lot about what we are doing to maximise support and impact on students whilst being mindful of staff workload. #mathscpdchat

... and in this conversation, in which a less-obvious-to-some-people professional development resource was also discussed ...

 **Tessmaths** @tessmaths · Feb 8 ...
Replying to @Arithmaticks
Books books and more books... #MathsCPDChat
Mattock Morgan McCourt McGrane Southall Sherwood Barton et al...
Plus sharing maths methods with anybody who will - @PamHarris has #mathstratchat which is excellent for this 😊



Kathryn MCCT 🧑🏻 @Arithmaticks · Feb 8

Oh my, how have I not heard of this hashtag before!?! I shall be delving deeper later on! [#MathsCPDChat](#)



Tessmaths @tessmaths · Feb 8

Honestly it's so good...everyone from around the world can join in as it's a slow chat - then posted on the website here

mathisfigureoutable.com/mathstratchat

[#MathsCPDChat](#) @pwharris



#MathStratChat
Central

PAM HARRIS
@pwharris

mathisfigureoutable.com

Math strategy chat and archive of Problem Talks

This is a collection of rich problems posted on Twitter under

[#MathStratChat](#) and can be used as Problem Talks in classrooms and ...



Pam Harris @pwharris · Feb 8

...

Replying to @Arithmaticks @tessmaths and @Pamharris

Love to have you join in!

#MathStratChat is a blast!

And you might consider my completely free online workshop: the Development of Mathematical Reasoning .



mathisfigureoutable.com

DMR Evergreen registration

... and Richard mentioned yet more reading and listening in order to prompt thinking:



Richard Dare @dare_richard · Feb 8

...

Replying to @Arithmaticks

Books, blogs, magazines, podcasts and #edutwitter!

I'm loving the @CharteredColl #CTeach course too!



Kathryn MCCT 🐝 @Arithmaticks · Feb 8

...

Wow you are a busy bee! Can you share your favourites of these recently/of all time? #MathsCPDChat



Richard Dare @dare_richard · Feb 8

...

@mrbartonmaths interviewing @adamboxer1 has to be a highlight.

The great blogs from @HFletcherWood, @PepsMccrea and

@Mr_Rowlandson

Tweets from @ProfSmudge

Conferences were discussed in this conversation ...



Matt Man @mr_man_maths · Feb 8

...

Replying to @Arithmaticks

The #mathsconf workshops by @LaSalleEd is brilliant to look back especially the ones online. A great opportunity to network with colleagues in similar stages to you and learn great stuff. #mathscpdchat



Kathryn MCCT 🧑🏻 @Arithmaticks · Feb 8

...

I do love a conference! What is the best one you have seen recently? #MathsCPDChat



Matt Man @mr_man_maths · Feb 8

...

That's a hard one! I really do miss the in person ones as that is where the real discussions happen. The one in Kettering where I met @PixiMaths before we both started the TAM course was like wow Plus I can't forget the many times I bumped into Mel from @Just_Maths. #mathscpdchat



Matt Man @mr_man_maths · Feb 8

...

Replying to @Arithmaticks and @LaSalleEd

The other ones I really found invaluable especially during lockdown are the #mathschatlive organised by @atulrana and using the opportunity when we discuss about A Level Maths teaching with other colleagues then led to a joint workshop lead with @Sheena2907 #mathscpdchat



Matt Man @mr_man_maths · Feb 8

...

Replying to @Arithmaticks and @LaSalleEd

Though the best one was probably when I presented for the first time in a MathsConf in Bristol. Delivering teaching strategies on mastery was a challenging one! Grateful for @HowWeTeachIt for the assistance in preparing the slides for me. #mathscpdchat



Atul Rana @atulrana · Feb 8

...

Season 3 of #MathsChatLive coming very soon indeed! This year I've got more dynamic geometry and virtual manipulative software for panelists to play with live on air. To use the very best of the 2-D canvas and video technology for CPD 😊 #MathsCPDchat

... and courses!



Matt Man @mr_man_maths · Feb 8

...

Replying to @Arithmaticks

For A Level Maths, then it's the fantastic courses organised by @Advanced_Maths and @MEIMaths.



AMSP - Advanced Mathematics Support Programme @Adv... · 20h ...



MathsLP @MathsRSmith · Feb 8 ...

Replying to [@Arithmaticks](#)

Odpod courses from MEI - at your own time!



AMSP - Advanced Mathematics Support Programme @Adv... · 20h ...



When Kathryn asked her next question ...



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

Lots of talk about books, conferences etc... Once you have a 'takeaway' how do you action your new learning? How do you know it is having an impact? [#MathsCPDChat](#)

postcards and emails were mentioned ...



Matt Man @mr_man_maths · Feb 8

Replying to @Arithmaticks

When @LaSalleEd asks us to think of something by writing a postcard to yourself. It can sound embarrassing at first, but it is valuable though to see if you are following up from what you're doing to improve on teaching.

[#mathscpdchat](#)



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

That accountability to YOURSELF is really key. I have started scheduling emails to myself to remind myself what I wanted to action from other CPD sessions similarly. [#MathsCPDChat](#)

... and there were some important reminders, this ...



SteveLoMMXXI @MaxTheMaths · Feb 8

Replying to @Arithmaticks

Good questions ... are reading books and attending workshops at conferences examples of 'PD' activities? Only when you action something to work on over time, either in your own practice and/or with colleagues, does it become 'C'PD? [#mathscpschat](#)



Anthony Shaw @ShawMaths · Feb 8

I think the C has to be planned for. Even if its just for yourself, writing an action plan. If its for a while department or group of teachers this is essential. Too much PD is a flash in the pan IMO.

[#mathscpdchat](#)



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8

I think this is really key. If you do nothing with it, it isn't 'C' at all!

[#MathsCPDChat](#)

... and this ...



Jenny Hill-Parker @JennyHillParker · Feb 8

Replying to @Arithmaticks and @MaxTheMaths

I think you've hit the nail on the head, measuring impact is hard!

[#mathscpdchat](#)

-  **Jenny Hill-Parker** @JennyHillParker · Feb 8 ...
How do you measure impact @Arithmaticks? #mathscpdchat
-  **Kathryn MCCT** 🧐 @Arithmaticks · Feb 8 ...
I think even the 'experts' on this find it hard. Sometimes it isn't so tangible as results or anything. It is a change that you can see in students confidence or articulation etc. I think these anecdotal things can be just as useful as a number going up/down. #MathsCPDChat
-  **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
Replying to @Arithmaticks
This is my issue. Time to embed/trial etc.

#mathscpdchat
-  **Kathryn MCCT** 🧐 @Arithmaticks · Feb 8 ...
How would you LIKE to do this, in an ideal world? #MathsCPDChat
-  **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
I was fortunate as HOD to have carte blanche to do as I liked. So we talked and planned and then the following week we followed up. Weekly 2 hr meetings (🧐) in dept (we didn't attend most whole school stuff).
#mathscpdchat
-  **Kathryn MCCT** 🧐 @Arithmaticks · Feb 8 ...
Replying to @AllThingsMaths
Wowsa! 2 hours is a HUGE amount of time - sounds delightful. How did you get away with missing whole school?! haha #MathsCPDChat
-  **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
We were failing desperately. Desperately. I was told I'd be HoD. I said only if... and listed my demands. One was no more sessions that weren't applicable directly to our practice. We had a couple of days off a year in lieu.
#mathscpdchat
-  **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
Replying to @AllThingsMaths and @Arithmaticks
I recently did a brief training session. 45 mins. I spoke for 20 and then said spend the rest of the time choosing one strategy and action it.
#mathscpdchat
-  **Kathryn MCCT** 🧐 @Arithmaticks · Feb 8 ...
I like it! How did it go down? #MathsCPDChat



Maryse #Antiracist @AllThingsMaths · Feb 8 ...

I'm not sure tbh! I'm hoping to start a trend of including the application of the content of CPD into the available delivery time. I've done it twice and I'll keep doing it and hope it catches on. [#mathscpdchat](#)



Kathryn MCCT 🗣️ @Arithmaticks · Feb 8 ...

Let us know how it goes! [#MathsCPDChat](#)



Mary Pardoe @PardoeMary · Feb 8 ...

Yes ... it's so good (effective) to be able to talk about what actually happened in a classroom, rather than assert what you THINK will/would happen!

[#mathscpdchat](#)



Mary Pardoe @PardoeMary · Feb 8 ...

And when working together I think these Guiding Principles (here: atm.org.uk/ATM-aims-princ...) from [@ATMMathematics](#) are very, very helpful!

[#mathscpdchat](#)

Guiding Principles

The ability to operate mathematically is an aspect of human functioning, which is as universal as language itself. Attention needs constantly to be drawn to this fact. Any possibility of intimidating with mathematical expertise is to be avoided.

The power to learn rests with the learner. Teaching has a subordinate role. The teacher has a duty to seek out ways to engage the power of the learner.

It is important to examine critically approaches to teaching and to explore new possibilities, whether deriving from research, from technological developments or from the imaginative and insightful ideas of others.

Teaching and learning are co-operative activities.

Encouraging a questioning approach and giving due attention to the ideas of others are attitudes to be encouraged. Influence is best sought by building networks of contacts in professional circles.

The trialling of new practices was discussed:



MrHawesMaths @HawesMaths · Feb 8

...

Replying to @Arithmaticks

I try to trial new practices on a trial class (not the same one each time of course) and see how it works over a half term period. If it is good, we discuss as a department as I would hope others are doing a similar thing. We then pick up ideas and perhaps refine some [#mathscpdchat](#)



Kathryn MCCT 🧐 @Arithmaticks · Feb 8

...

Lovely - how do you choose the class to trial with? Would you then keep coming back to it and refining more? [#MathsCPDChat](#)



MrHawesMaths @HawesMaths · Feb 8

...

I guess I try and pitch it to the class I feel is most appropriate. Discuss and refine and keep with it. I also think it is important to get feedback of the students. If they don't like it, is it effective? [#mathscpdchat](#)



Kathryn MCCT 🧐 @Arithmaticks · Feb 8

...

I love a bit of student voice. But equally, sometimes they just don't like things because they make them think hard haha [#MathsCPDChat](#)



MrHawesMaths @HawesMaths · Feb 8

...

That is a trap to be aware of. I like to think that I am honest and fair with my students and would value their honesty and opinions too. It's a difficult one but ultimately the professional will make the decisions 🙌 [#mathscpdchat](#)

Blogging was also mentioned:

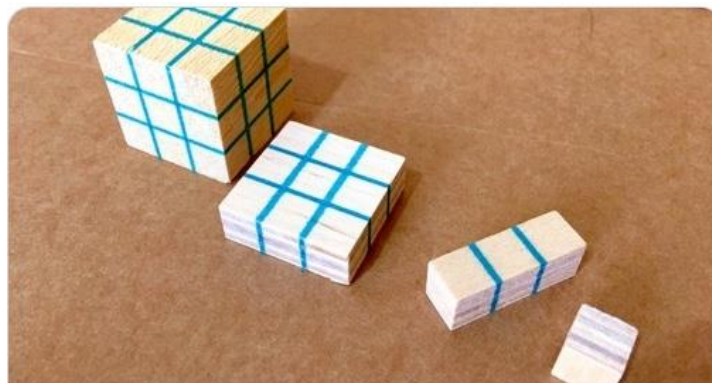


Atul Rana @atulrana · Feb 8

...

Replying to @Arithmaticks

I miss blogging about my conference takeaways and sometimes what I had started to implement a few months later. Must get back on creating those blog posts! [#MathsCPDchat](#)

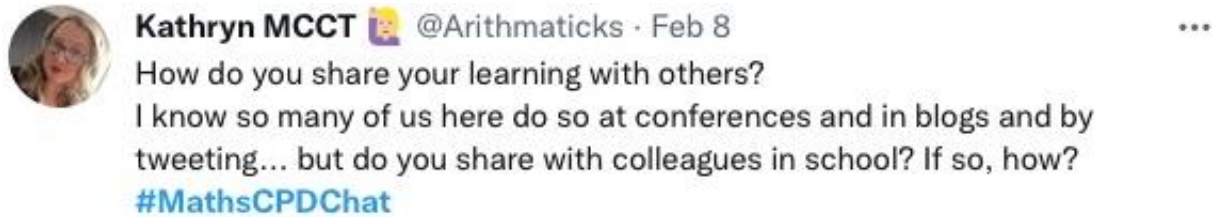


atulranatutors.co.uk

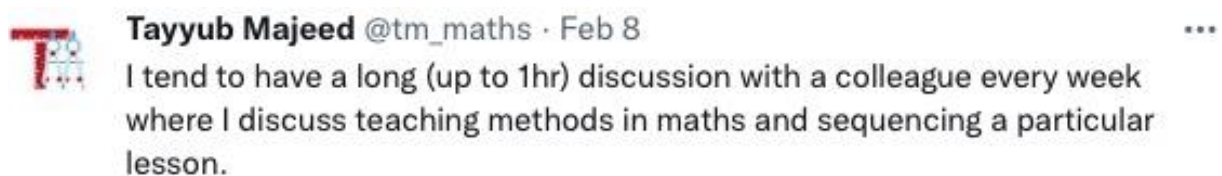
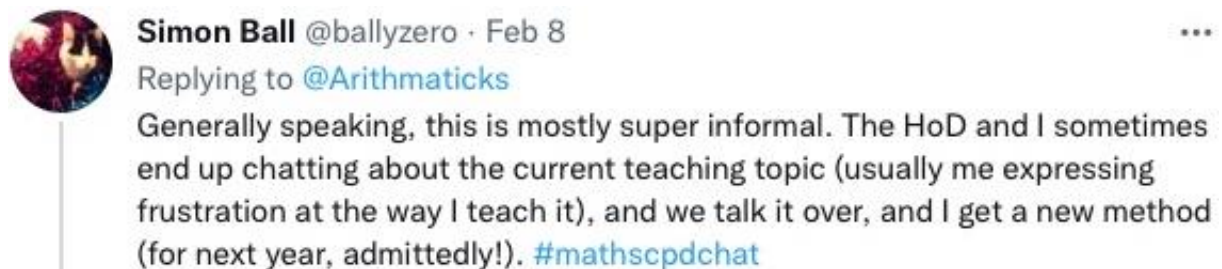
Teaching with multi-base : Escaping my own base-ten world first
Fish don't know they're in water. If you tried to explain it, they'd say,
"Water? What's water?" They're so surrounded by it that it's ...

The screenshots below show conversations generated by two of Kathryn's questions that were directed to everyone engaging in the chat. Contributors shared many different ways in which they endeavour to engage colleagues in their own schools in thought, discussion and work on their maths-teaching practices. **Click on any of the following screenshots-of-a-tweet to go to that actual tweet on Twitter.**

The following replies and conversations were all initially generated by this question from [Kathryn Darwin](#):



Some responses formed short conversations, such as this one between [Simon Ball](#) and [Tayyub Majeed](#) ...



... this between [Humanities Faculty](#) and [Kathryn Darwin](#) ...



... and this conversation between [Mr Hawes](#), [Mary Pardoe](#), [Kathryn Darwin](#) and [Maryse](#):

-  **MrHawesMaths** @HawesMaths · Feb 8 ...
Replying to @Arithmaticks
We use our teams chats for that sort of stuff. We post resources practice etc. kind of like a mini Twitter for the department. Plus we have our SEND teachers on the chat so they can support our students more effectively too [#mathscpdchat](#)
-  **Mary Pardoe** @PardoeMary · Feb 8 ...
Great. It's also SO valuable if/when you can arrange to 'be together' in lessons ... so much to talk about and reflect on later.
[#mathscpdchat](#)
-  **Kathryn MCCT** 🗣️ @Arithmaticks · Feb 8 ...
Replying to @PardoeMary and @HawesMaths
This is one of the best things about programmes from the Maths Hubs. The Open Classrooms etc from @YHMathsHub are great for this
[#MathsCPDChat](#)
-  **Maryse #Antiracist** @AllThingsMaths · Feb 8 ...
I used to love 2 folks in observing at a time. It was great to really delve into what was seen with different perspectives.
-  **Mary Pardoe** @PardoeMary · Feb 8 ...
Replying to @AllThingsMaths @HawesMaths and @Arithmaticks
You can also learn a lot from 'working together' on video recordings of lessons (which you can pause) and discuss what would YOU have done, what might have happened if, and so on ...

[#mathscpdchat](#)
-  **MrHawesMaths** @HawesMaths · Feb 8 ...
Replying to @AllThingsMaths @PardoeMary and @Arithmaticks
Our Deputy head organised learning walks this half term with groups of teachers moving around dropping into lessons and then sitting down to discuss what they observed and what their takeaways were. Provided a lot of insights into priorities and important areas [#mathscpdchat](#)

Other people tweeted replies which did not immediately generate conversations, such as these replies from [Catherine Edwards](#), [Mrs Beech](#), [MathsLP](#) and [Helen Osmond](#):

-  **Catherine Edwards** @Edwards08C · Feb 8 ...
Replying to @Arithmaticks
I do a fortnightly ish T&L newsletter on staff SharePoint. It's a real mix of things



MrsBeech @Jenny8691 · Feb 8

...

Replying to @Arithmaticks

I put a resource and tweet of the week onto our weekly bulletin.
[#mathscpdchat](#)



MathsLP @MathsRSmith · Feb 8

...

Replying to @Arithmaticks

I have tried to bring topics into dept meetings before the topics have been taught eg the week before "bidmas" with some success. Talking about it with each other has to happen before changing anything for students. And being didactic about how we teach things, doesn't work. Imo



Helen Osmond Tutoring @ChippenhamMaths · Feb 8

...

Replying to @Arithmaticks and @atulrana

There's a new [#Maths](#) hub launching from [@qualified_tutor](#) for [#tutors](#) to have a chance to share their learning together. First session this week on Thursday

Kathryn then responded to earlier conversations, including teachers' tweets (shown immediately above) about how they share their learning with each other, by asking this question ...



Kathryn MCCT 🤖 @Arithmaticks · Feb 8

...

So it's clear we are all geeks of the highest order here. We are, after all, spending 7-8pm on a Tuesday night talking about developing as teachers of maths...

How do you get the rest of your colleagues to feel like this too... particularly the reluctant ones!? [#MathsCPDChat](#)

... which prompted these replies from [Anthony Shaw](#), [Jenny Hill-Parker](#) and [Richard Dare](#) ...



Anthony Shaw @ShawMaths · Feb 8

...

Replying to @Arithmaticks

Sane way we do with kids... make it accessible and worth doing. There's too much negative perceptions around CPD from terrible INSET days.
[#mathscpdchat](#)



Jenny Hill-Parker @JennyHillParker · Feb 8

...

Replying to @Arithmaticks

Need timesavers, and strategies that are proven to be effective, ie use of manipulatives as a scaffold [#mathscpdchat](#)



Jenny Hill-Parker @JennyHillParker · Feb 8

...

It's understandable that staff have their tried and tested ways of teaching topics, good Maths CPD can sometimes be exposing the dept to resources and teaching methods that just are not on their radar... yet [#mathscpdchat](#)



Richard Dare @dare_richard · Feb 8

Replying to @Arithmaticks

Our meeting is directed time!

But, motivating colleagues by demonstrating how intriguing problems are and how effective representations help make sense of complex problems or highlight links between different topics.

#Mathscpdchat

... and this interchange between [Atul Rana](#) and [Helen Osmond](#):



Atul Rana @atulrana · Feb 8

Really few tutors I know engage in regular CPD. But slowly a few more are engaging in it. A new maths specific tutors' hub has started up

#MathsCPDchat



Helen Osmond Tutoring @ChippenhamMaths · Feb 8

Replying to @Arithmaticks and @atulrana

There's a new #Maths hub launching from @qualified_tutor for #tutors to have a chance to share their learning together. First session this week on Thursday



Helen Osmond Tutoring @ChippenhamMaths · Feb 8

Replying to @atulrana and @Arithmaticks

It's been really hard to for tutors to get access to CPD in the past. The pandemic sending things online certainly opened up some doors for me. I've now made it to 2 #mathsconfs online from @LaSalleEd and hope to make it to more, along with sharing it in the new Hub



Atul Rana @atulrana · Feb 8

A fantastic initiative Helen. Tutors have never connected to each other like this in the entire (very long) history of the profession. So much knowledge collectively held. Highly recommend tutors engage with the wider maths teaching community, including the Complete Maths one.

There was also a reply to this question from an 'observer-of-the-chat' who is not a maths teacher, [yr enfys](#)



yr enfys @YrEnfys · Feb 8

Replying to @Arithmaticks

I love this thread, I love the enthusiasm and commitment. Well done 🙌
CPD is vital for new ideas and fresh approaches. Keep up the good work (wish I was a maths teacher so I could join you!)

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

Kathryn's last question ...



Kathryn MCCT 🧑🏻 @Arithmaticks · Feb 8

...

OK - 5 mins to go.

Share something with us that REVOLUTIONISED you teaching. Something you think we should ALL read to make us better maths teachers... GO!

[#MathsCPDChat](#)

... prompted people to share a variety of things-we-should-all-read-to-make-us-better-maths-teachers, such as ...



Simon Ball @ballyzero · Feb 8

...

Replying to [@Arithmaticks](#)

Oooof. Making Every Maths Lesson Count, A Compendium Of Mathematical Methods, and How I Wish I Taught Maths were the big ones. Also enjoyed How To Explain Absolutely Anything To Absolutely Anyone, Responsive Teaching, and What Does This Look Like In Practice?.

[#mathscpdchat](#)

... and ...



MrHawesMaths @HawesMaths · Feb 8

...

Replying to [@Arithmaticks](#)

OneNote. I would not do it any other way. All my lessons, tasks etc are there. Currently trialling feedback and reporting which is going well. Also trialling retrieval /revision work on there too. All in one convenient place.

The book is a place of practise. [#mathscpdchat](#)



Year: 6 Fractions Date: >>

Topic covered: Adding and subtracting fractions with a different denominator

Examples:

Key Vocabulary

Mixed number Improper fraction Mixed fraction Convert Reciprocal

Key facts and processes:

When you convert a mixed number to a improper fraction, the first thing you need to do is times the whole number by the denominator, then, you add the numerator to that result.

Subject strands

1. Mathematical knowledge (number sense and fluency)
2. Problem solving, and conceptual understanding
3. Communication and reasoning with a mathematical language
4. Perseverance (logical and analytical approaches)
5. Contributions (to discussions or verbal discussion in class)
6. Reviewing and improving

Review and improve activities

1. Review and practise **Target area**
2. Complete missing/incomplete work
3. Clean up task
4. Practise questions from previous units
5. Look ahead at future units

Support question:

Extend question:

$2\frac{1}{4} \times 4\frac{1}{7} =$

Non example:

Year: 6 Fractions Date: →

Topic covered: Multiplying fractions

Examples:

Key Vocabulary

Key facts and processes:

FIRST FIGURE OUT HOW MANY TIMES DENOMER NATER GOES INTO THE NUMERATOR THEN PUT THE RAMANDER ON TOP.

Subject strands

1. Mathematical knowledge (number sense and fluency)
2. Problem solving, and conceptual understanding
3. Communication and reasoning with a mathematical language
4. Perseverance (logical and analytical approaches)
5. Contributions (to discussions or verbal discussion in class)
6. Reviewing and improving

Review and improve activities

1. Review and practise **Target area**
2. Complete missing/incomplete work
3. Clean up task
4. Practise questions from previous units
5. Look ahead at future units

Support question:

Extend question:

Non example:

Year: 6 Fractions Date:

Year 7

Marking and feedback

Date: 27.1.22

Unit covered: Perimeter and area

Key Skills covered

- Perimeter of Shapes
- Area of triangles
- Area of Quadrilaterals
- Problems in context
- Composite shapes (perimeter and area)

Key Vocabulary

width, height, base, perpendicular, area, perimeter, multiply, rectangle, triangle, trapezium, composite, distance, area

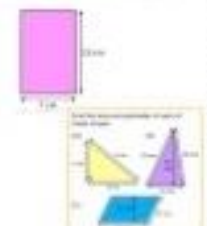
Overview (Presentation, misconceptions, praise, missing work):

- ① On the whole good but more of you need to write down the calculations you are doing. *Especially for composite shapes*
- ② A few of you forgot to halve your answer for b x h when calculating the area of a triangle. $\frac{b \times h}{2}$
- ③ Presentation good, clear and you are assessing your work as we go through the answers.
- ④ Excellent contributions from Beth, Emma, Ruby, William. Excellent work from Libby, Olivia, Lucas, George + Tom

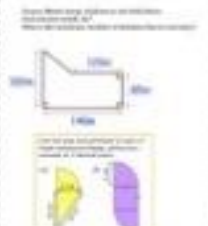
Subject strands

1. Mathematical knowledge, number sense and fluency
2. Problem solving and conceptual understanding
3. Communication and reasoning with a mathematical language
4. Perseverance, logical and analytical approaches
5. Contributions to discussions or verbal discussion related
6. Reflecting and Improving

Target Support:



Target Extend:



Prep average:

Review and improve activities

1. Review and practice target area
2. Complete missing/incomplete work
3. Drawing task
4. Revisit questions from previous units
5. Look ahead of future units

Polaroid moments:
Olivia, Libby, Jackson, Ruby



Jackson



... and ...



Anthony Shaw @ShawMaths · Feb 8

...

Replying to @Arithmatics

@LaSalleEd and mathsconf. I've only been to the online ones but they've made me think harder than I have in years.

#mathscpdchat



Anthony Shaw @ShawMaths · Feb 8

...

Oh! How did i forget TAM and TFM. The best sustained PD I've ever done. Wish I could do them again! Thanks @Advanced_Maths

#mathscpdchat

... and ...



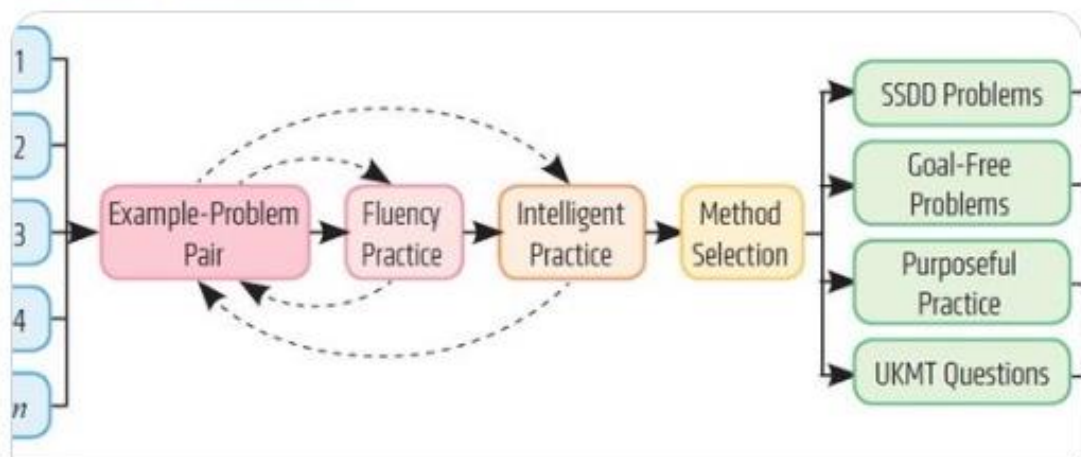
Richard Dare @dare_richard · Feb 8

...

Replying to @Arithmatics

@mrbartonmaths's two books.

Diagnosticquestions.com



Formative Assessment

variationtheory.com

Welcome to variationtheory.com!

Sequences and behaviour to enable mathematical thinking in the classroom - by Craig Barton @mrbartonmaths

... and ...



Atul Rana @atulrana · Feb 8

...

Replying to @Arithmaticks

Arithmetic by Paul Lockhart. It will totally change the way you think about numbers and arithmetic. Invigorating new enthusiasm and insights into your own teaching.

A must read for anyone teaching mathematics!

[#MathsCPDchat](#)

... and ...



tandteaching @tandteaching · 16h

...

Replying to @Arithmaticks

A3-sized whiteboards. Changed the game in terms of what I could use Whiteboards for.

... and ...



Peter 🇪🇬 @mmmurmuration · Feb 8

...

Replying to @Arithmaticks and @atulrana

Richard Skemp 'Relational Understanding and Instrumental Understanding'

... and ...



Sam Blatherwick @blatherwick_sam · Feb 9

...

Replying to @Arithmaticks and @Lucyjc1612

John Mason's "Learning and Doing Mathematics" really changed the way I saw teaching maths [#mathscpdchat](#) (I should go back to it!)