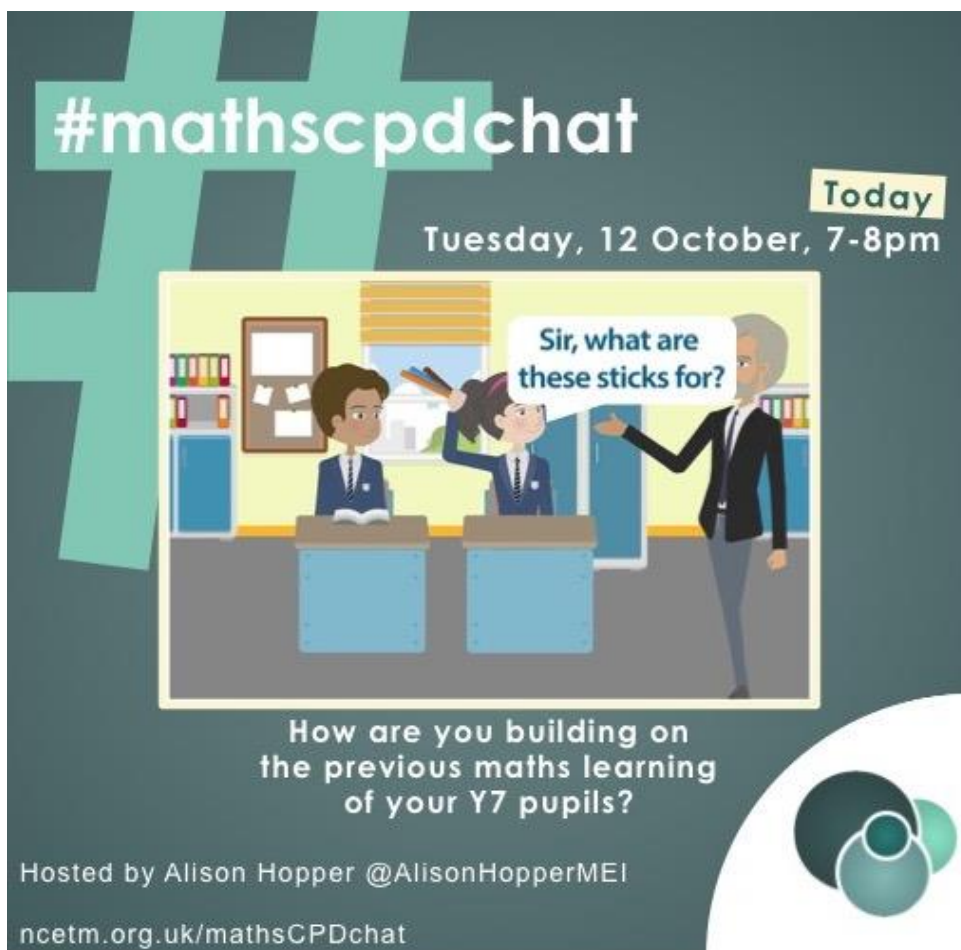


#mathscpdchat 12 October 2021

How are you building on the previous learning of your Y7 pupils?

Hosted by [Alison Hopper](#)

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



The graphic features a large green hashtag #mathscpdchat on a dark teal background. To the right, it says 'Today Tuesday, 12 October, 7-8pm'. In the center is an illustration of a classroom scene where a teacher asks a student, 'Sir, what are these sticks for?'. Below the illustration, the text reads: 'How are you building on the previous maths learning of your Y7 pupils?'. At the bottom, it says 'Hosted by Alison Hopper @AlisonHopperMEI' and 'ncetm.org.uk/mathsCPDchat'. A small version of the NCETM logo is in the bottom right corner.

The links shared during this discussion were:

[Checkpoints](#) which are Year 7 diagnostic maths activities from the NCETM designed to help teachers assess understanding and lay foundations for KS3. Suggested ways to address 'gaps' that teachers see when pupils engage in the activities are provided with the activities. It was shared by [Gaynor Bahan](#)

[Mastery Materials](#) which are NCETM materials created by classroom-based teachers within the Maths Hubs Network. They provide professional development and guidance to help teachers develop a mastery approach to learning and teaching mathematics in primary and secondary schools. Each component set of materials addresses one of [Primary Mastery Professional Development](#), [Secondary Mastery Professional Development](#), [Primary Assessment](#), [Secondary Assessment](#), [Secondary Subject Knowledge Audit](#), [Primary Calculation Guidance](#), [Marking Guidance](#), [Primary ITE](#), and [Secondary ITE](#). It was shared by [Alison Hopper](#)

[EEF blogs](#) which are Education Endowment Foundation blog articles by various authors. They address many different subjects and issues in education. For example a blog post by Simon Cox is about [Integrating evidence into mathematics teaching – Making use of manipulatives](#). It was shared by [Alison Hopper](#)

[Representations in our primary video lessons](#) which is an NCETM article about mathematical structure, manipulatives and myth-busting. The first myth to be busted is that manipulatives and pictures are only for younger children and low prior-attainers. It was shared by [Mary Pardoe](#)

[Navigating the mathematics curriculum in England from Year 7 to GCSE](#) which is an article by [Dave Bowman](#) in Impact (the journal of the Chartered College of Teaching). The author discusses continuity of mathematics learning through stages. It was shared by [Dave Bowman](#)

The screenshots below, of chains of tweets posted during the chat, show two conversations indicating that students have made promising, and therefore pleasing, starts in Y7 maths lessons. **Click on any of these screenshots-of-a-tweet to go to that actual tweet on Twitter.** These two conversations were both generated by this tweet from [Alison Hopper](#):



Alison Hopper @AlisonHopperMEI · 21h

...

Ok! Welcome to [#mathscpdchat](#) all about how we are working with Year 7 this term

Can we start by sharing some mathematical positives about your new Y7 students this term ...



and included these from [Catherine Edwards](#) and [Alison Hopper](#):



Catherine Edwards @Edwards08C · 21h

...

Replying to @AlisonHopperMEI

My new Y7 class are mixed ability for the first time, and they are really kind and patient with each other. [#mathsCPDchat](#)



Alison Hopper @AlisonHopperMEI · 21h

...

This is lovely to hear! [#mathscpdchat](#) KS2 teachers - what was positive about last year's Y6s who are now the Y7s we are talking about?



Alison Hopper @AlisonHopperMEI · Oct 12

...

Is anyone else teaching Y7 in mixed attainment groups this year? What are your experiences? [#mathscpdchat](#)



Catherine Edwards @Edwards08C · Oct 12

...

Replying to @AlisonHopperMEI

We are setting after half term, although the intention is to keep the middle fairly mixed. We haven't done the training and thinking for mixed ability. Struggling with the support for our P level and just above students [#mathscpdchat](#)



Catherine Edwards @Edwards08C · 21h

...


Just re-read the question! Mathematically I've been really impressed with the breadth of knowledge they have [#mathsCPDchat](#)



Alison Hopper @AlisonHopperMEI · 21h

...


That's good to hear. What have they surprised you with so far? [#mathscpdchat](#)

 **Catherine Edwards** @Edwards08C · 21h ...
We've been doing a data handling unit, they could majority correctly recall and use mean, median, mode and range. Also excellent vocabulary when expressing their ideas [#mathscpdchat](#)


 **Alison Hopper** @AlisonHopperMEI · 21h ...
Impressive! Only 'mean' is officially in the NC for KS2 but I think many experience all using tried and tested resources [#mathscpdchat](#)

 **Catherine Edwards** @Edwards08C · 21h ...
That's what I thought, so I was really impressed [#mathscpdchat](#)

and these from [Gemma Scott](#), [Alison Hopper](#) and [Ruby Judge](#):

 **Director of Maths** @DirectorMaths · 21h ...
Replying to @AlisonHopperMEI
When I walk into a classroom during a lesson visit and hear the Year 7s correctly using the word commutative in discussions with each other 🤗 [#mathscpdchat](#)

 **Alison Hopper** @AlisonHopperMEI · 21h ...
Hooray!! What else do they do that makes you smile and cheer inside (or maybe openly!)? [#mathscpdchat](#)

 **Ruby Judge** @RubyJudge · 21h ...
Replying to @AlisonHopperMEI
Lovely class, eager to please their teacher and themselves by hard work. Superb presentation in their books.

 **Alison Hopper** @AlisonHopperMEI · 21h ...
Such lovely comments about new Year 7s [#mathscpdchat](#)

The next three sequences of screenshots show three conversations about the mathematics on which teachers and students have focused during the first half term of students' Year 7.


Frequently in #mathsCPDchats more than one separate conversation is generated by a single tweet (particularly when that tweet is from the host), and because that happened here, one of Alison's tweets is repeated. **Again, 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 [Alison Hopper](#):

 **Alison Hopper** @AlisonHopperMEI · 21h ...
Where have you started with them - what topics have come first and why did you choose them? [#mathscpdchat](#)

and included these from [Lee Overy](#), [Alison Hopper](#), [Alice Ward-Gow](#) and [Gaynor Bahan](#):

 **Lee Overy** @Lwdajo · 21h ...
Replying to @AlisonHopperMEI
Commutivity, associativity and distributivity, because they are building blocks for further mathematical development. [#mathscpdchat](#)

 **Alison Hopper** @AlisonHopperMEI · 21h ...
Have you found that they are confident with all/most/some of this language?
[#mathscpdchat](#)

 **Lee Overy** @Lwdajo · 21h ...
Replying to @Lwdajo and @AlisonHopperMEI
Not until I taught it. One student recognised the language, which made me feel better, until he told me his maths teacher dad taught him. I was hoping it would be revision, but no.

 **Miss Ward-Gow** @mcwardgow · 21h ...
Replying to @AlisonHopperMEI
Calculator skills - powers, roots, fractions, decimals, negatives. We've found it's a useful way to find out what they know already (plus they've been in mixed ability groups until this week) [#mathscpdchat](#)

 **Alison Hopper** @AlisonHopperMEI · 21h ...
Have you been using the [#NCETMcheckpoints](#)? The decks available now cover some of what you have been working on [#mathscpdchat](#)

 **Miss Ward-Gow** @mcwardgow · 21h ...
Replying to @AlisonHopperMEI
I'm aware of them but haven't got round to having a look at them yet - will check them out 😊 thanks! [#mathscpdchat](#)

 **Gaynor Bahan FCCT** @GaynorBahan · 21h ...
Download from here: ncetm.org.uk/classroom-reso... [#mathscpdchat](#)



ncetm.org.uk
Checkpoints
Information about a year's worth of Year 7 maths activities to help teachers assess understanding and lay foundations for KS3

these from [Catherine Edwards](#), [Alison Hopper](#), [Ruby Judge](#), [Lee Overy](#), [Alice Ward-Gow](#) and [MathsWithMsB](#):

-  **Catherine Edwards** @Edwards08C · 21h ...
Replying to @AlisonHopperMEI
Charts and graphs... because we use the Pearson Edexcel scheme and it comes first. Although I do like it, it has challenge but not too much brand new content whilst we all get to know each other. #mathsCPDchat
-  **Alison Hopper** @AlisonHopperMEI · 21h ...
Have you seen a difference in this year's Y7 from previous years (except maybe last year!)? #mathscpdchat
-  **Ruby Judge** @RubyJudge · Oct 12 ...
Replying to @AlisonHopperMEI and @Edwards08C
Better understanding of some concepts e.g long multiplication, formal methods, use of bar modelling and fraction awareness. #mathscpdchat
-  **Lee Overy** @Lwdajo · Oct 12 ...
Certainly a preference for column multiplication and long division. No surprise perhaps, but a lack of familiarity with grid multiplication is a big surprise. I'm concerned about an emphasis on procedures, not understanding.
-  **Alison Hopper** @AlisonHopperMEI · Oct 12 ...
Replying to @Lwdajo @RubyJudge and @Edwards08C
It's not the intention of the curriculum but perhaps a worrying by-product? #mathscpdchat
-  **Lee Overy** @Lwdajo · Oct 12 ...
Long or short division or column multiplication are valid methods, of course, but can be quite abstract for some less developed students, and I think some work procedurally. #mathscpdchat
-  **Miss Ward-Gow** @mcwardgow · Oct 12 ...
Ours don't seem too familiar with grid method, and the knock on effect is that when they try to do, say 25×25 , they think it's $20 \times 20 + 5 \times 5$ and even when you show them the grid, they can't see their mistake 🏠🏠🏠 #mathscpdchat
-  **MathsWithMsB** 📚 @MathsWithMsB · Oct 12 ...
Yes, I've noticed this in recent years. It's such a useful model for algebraic expansion, too (@jemmaths I thought of our Twitter conversation about common methods a few lessons ago, when confronted with a sea of blank faces, and wished for a little more consistency!)
-  **Lee Overy** @Lwdajo · Oct 12 ...
I have year 10 who still make that mistake, which is a huge concern of course. Distributive law not embedded. #mathscpdchat



Alison Hopper @AlisonHopperMEI · Oct 12

There are some good [#NCETCcheckpoints](#) which explore this understanding as well as the PD Materials ncetm.org.uk/teaching-for-m... [#mathscpdchat](#)



ncetm.org.uk

Mastery Materials

Materials to help teachers develop a mastery approach in their classrooms and schools



Lee Overy @Lwdajo · Oct 12

Definitely worth a read before starting a new unit of work. [#mathscpdchat](#)

and these from [Alison Hopper](#) and [Catherine Edwards](#):



Alison Hopper @AlisonHopperMEI · 21h

Have you seen a difference in this year's Y7 from previous years (except maybe last year!)? [#mathscpdchat](#)



Catherine Edwards @Edwards08C · 21h

It's hard to say, as we are a rapidly growing and changing school so our demographic has considerably changed in the six years I've been here. Although I feel that in general number skills are loads better since the new curriculum came in [#mathsCPDchat](#)






Alison Hopper @AlisonHopperMEI · 21h

That's positive to hear and despite the last 2 years we have had too [#mathscpdchat](#)

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

The discussions shown in the sequences of screenshots of tweets reproduced above were generated by the host's first two questions. A popular response to the first question was the observation that 'they [Y7 pupils] are really grateful to be in the classroom with a teacher'. Another teacher commented that her Y7 pupils are loving 'all the new vocabulary they are learning in algebra and using it at every opportunity'.

In response to Alison's second question (about the maths that pupils have been doing so far this term) there were three 'reports' that were not within conversations:

-  **Sharon Malley** @mathsmumof2 · 21h ...
Replying to @AlisonHopperMEI
Calculations but linking what they already know about addition, subtraction, multiplication & division to the field axioms and applying it to all types of number e.g. fractions, decimals, directed numbers
-  **Director of Maths** @DirectorMaths · 21h ...
Replying to @AlisonHopperMEI
Charts and graphs for us. Links to familiar things but there's plenty you can do with them so it doesn't feel like too much repetition. The next few topics are then number once they've settled in #mathscpdchat
-  **Ruby Judge** @RubyJudge · Oct 12 ...
Replying to @AlisonHopperMEI
We are following White Rose Hub SOW from year 7 onwards and I am really liking teaching using it and sticking to SOW. Covering Algebraic thinking atm. #mathscpdchat

The host's third question was about communication:



Alison Hopper @AlisonHopperMEI · Oct 12

...

What a really positive start to [#mathscpdchat](#)

What information did you get about your new Y7s from KS2? What communication have you had?



In response a teacher reported that she had received ...



Ruby Judge @RubyJudge · Oct 12

Replying to @AlisonHopperMEI

- 1: In house data from Primary schools
- 2: Effort , Attitude and a general comment about their learning
- 3: Sen or any needs etc.

[#mathscpdchat](#)

... and this conversation was generated



Mary Pardoe @PardoeMary · Oct 12

...

Have you (KS2/3 teachers) 'met' together in any way (i.e. virtually or in person)?

[#mathsCPDchat](#)



Alison Hopper @AlisonHopperMEI · Oct 12

...

This is such an important question. Difficult in current times but can we/do we make use of our new-found online meeting skills to allow cross-phase collaboration? [#mathscpdchat](#)



Catherine Edwards @Edwards08C · Oct 12

...

Our KS3 lead went to our main feeder primary, but more about curriculum than students [#mathscpdchat](#)



Alison Hopper @AlisonHopperMEI · Oct 12


...

That sounds good. Did they see maths being taught and get to pedagogical discussions? [#mathscpdchat](#)

 **Catherine Edwards** @Edwards08C · Oct 12 ...
Yes and it's really sparked discussions about how we continue using manipulatives and models as they come through [#mathscpdchat](#)

 **Alison Hopper** @AlisonHopperMEI · Oct 12 ...
Brilliant! [#mathscpdchat](#)

This reply ...

 **Catherine Edwards** @Edwards08C · Oct 12 ...
I've enjoyed it in the past when I've been to teach year six, but the small children scare me! I would love to see more early maths in all seriousness, I think I'd learn lots about supporting our very lowest attaining mathematicians. I always feel out of my depth [#mathscpdchat](#)


... prompted the host to remind everyone that:

 **Alison Hopper** @AlisonHopperMEI · Oct 12 ...
Being part of the [#Y58Continuity](#) Work Groups gives you the chance to collaborate on curriculum and pedagogy with KS2 teachers and to visit their classrooms. Contact your local [@MathsHubs](#) [#mathscpdchat](#)

 **Gaynor Bahan FCCT** @GaynorBahan · Oct 12 ...
There will be over 150 of these Work Groups taking place across England this year! Do join one [#Y58Continuity](#) [#mathscpdchat](#)

Alison asked:

'What would you like to know – in a practical way – about their (Y7 pupils') maths?':

 **Ruby Judge** @RubyJudge · Oct 12 ...
Replying to [@AlisonHopperMEI](#) and [@Edwards08C](#)
Can they apply the learnt knowledge to solve problems?
How do they tackle problem solving in real life ?
Strategies etc!

 **Catherine Edwards** @Edwards08C · Oct 12 ...
Ooh, that's hard...in some ways I'd like a full profile of their proficiencies, but realistically unless it was all standardised I wouldn't be able to use it. It would be useful to see where students deviated from the class norm for preemptive support [#mathscpdchat](#)

 **Alison Hopper** @AlisonHopperMEI · Oct 12 ...
It's such a difficult balance to strike but I think that is a good idea [#mathscpdchat](#)

This question about one of the Checkpoints (link provided above) ...




Alison Hopper @AlisonHopperMEI · Oct 12

...

For those who haven't seen them, here is one of my current favourite Checkpoints. What would this reveal about understanding in Y7?
#NCETMCheckpoints #mathscpdchat

Checkpoint 7: Mystery bars

The top blue bar and the bottom orange bar each represent a different number.




- The top blue bar number is three times the bottom orange bar number.
- The difference between the two numbers is 8.

Will the two bulleted statements still be true if:

- I add 1 to both of the original numbers?
- I double both of the original numbers?
- I halve both of the original numbers?

?

What could the numbers be? Is there more than one possible answer?



... prompted this discussion ...



Gaynor Bahan FCCT @GaynorBahan · Oct 12

...

Replying to @AlisonHopperMEI

How familiar are Y7 with bar models? Have we noticed them being used (unprompted) yet? #mathscpdchat



miss franklin @missfc_maths · Oct 12

...

Replying to @AlisonHopperMEI

About half of my yr 7 class are familiar with bar models but its not a go to method for any of my transition group #mathscpdchat



Alison Hopper @AlisonHopperMEI · 1h

...

It will entirely depend on the experiences they have had before. Are you going to promote them with all?



miss franklin @missfc_maths · 57m

...

we use a range of visual tools with all our classes then as students build their confidence and can do it abstract then are encouraged to show working with and without the tools. allows for development for those who haven't used them and those that have can build confidence

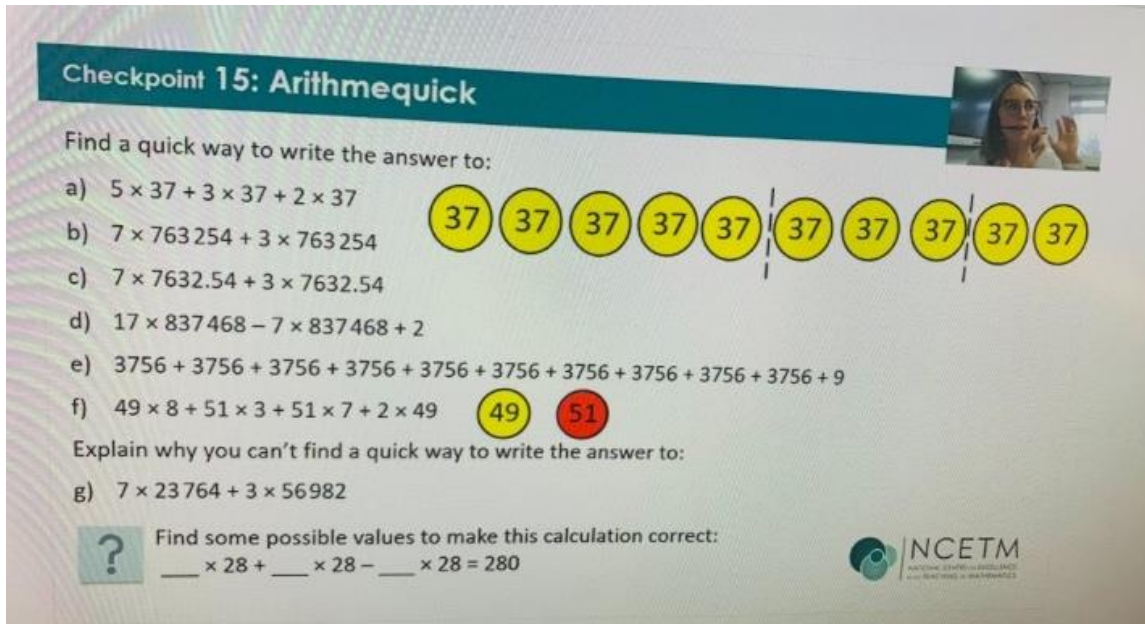
... and some other comments:

‘this could reveal their ability to tackle a problem and their resilience’

‘and their ability to distinguish between additive and multiplicative relationships perhaps’

‘definitely, and reasoning’

An image of one of the favourite Checkpoints of another teacher was tweeted ...



Checkpoint 15: Arithmequick

Find a quick way to write the answer to:

a) $5 \times 37 + 3 \times 37 + 2 \times 37$

b) $7 \times 763254 + 3 \times 763254$

c) $7 \times 7632.54 + 3 \times 7632.54$

d) $17 \times 837468 - 7 \times 837468 + 2$

e) $3756 + 3756 + 3756 + 3756 + 3756 + 3756 + 3756 + 3756 + 3756 + 3756 + 3756 + 9$

f) $49 \times 8 + 51 \times 3 + 51 \times 7 + 2 \times 49$

Explain why you can't find a quick way to write the answer to:

g) $7 \times 23764 + 3 \times 56982$

Find some possible values to make this calculation correct:
 $__ \times 28 + __ \times 28 - __ \times 28 = 280$

The visual representation shows a row of 10 yellow circles, each containing the number 37. The first 5 circles are grouped together by a vertical line, and the last 5 circles are grouped together by another vertical line. This illustrates the distributive property: $5 \times 37 + 5 \times 37 = 10 \times 37$.

... and prompted this tweet:



Alison Hopper @AlisonHopperMEI · Oct 12

This is the sort of thing that might get us beyond facility with procedures to the understanding which has been discussed in a different thread of this [#mathscpdchat](#)

Alison's final question was:

**'What have you brought into KS3 teaching
as a result of
knowing more about what your pupils have experienced before?'**

It prompted this conversation ...

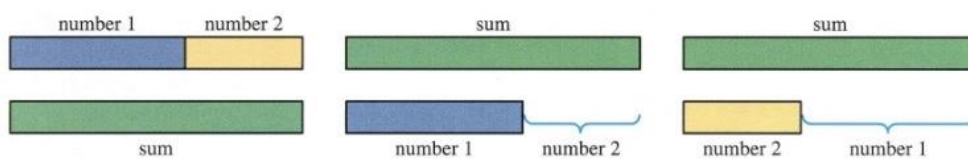


Lee Overy @Lwdajo · Oct 12

Replying to @AlisonHopperMEI

An opportunity to introduce mathematical relationships using alternative representations: [#mathscpdchat](#)

Class Activity 3 shows a relationship between addition and subtraction. You can illustrate this with bar models.



If $\text{number 1} + \text{number 2} = \text{sum}$,
then $\text{sum} - \text{number 1} = \text{number 2}$ and $\text{sum} - \text{number 2} = \text{number 1}$.
This is called the **inverse relationship** between addition and subtraction.



Alison Hopper @AlisonHopperMEI · Oct 12

...

That looks interesting? Where is it from? [#mathscpdchat](#)



Lee Overy @Lwdajo · Oct 12

...

Discovering Mathematics 1B, OUP. [#mathscpdchat](#)

... and these other replies:



MathsLP @MathsRSmith · Oct 12

...

Replying to [@AlisonHopperMEI](#)

Manipulatives! Having taught my primary child during lockdowns, I'm now really passionate about teaching Algebra with Manipulatives



Gaynor Bahan FCCT @GaynorBahan · Oct 12

...

Replying to [@PardoeMary](#) and [@AlisonHopperMEI](#)

'Representations are used to reveal the structure' - this is a helpful mantra!
[#mathscpdchat](#)