#mathscpdchat 5 October 2021

How is your A level teaching going this term?

Hosted by Simon Ball

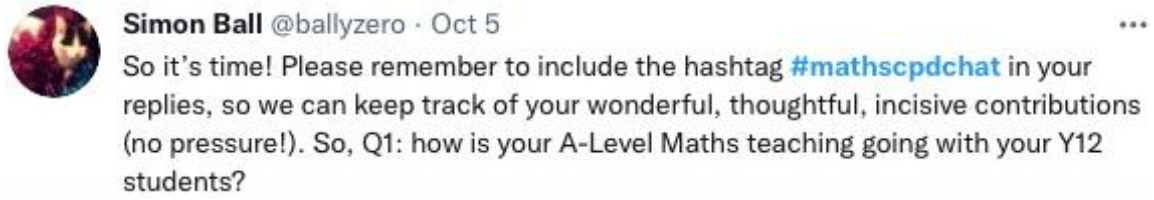
This is a brief summary of the discussion – to see all the tweets, follow the hashtag ***#mathscpdchat*** *in Twitter*

The only link shared during this discussion was:

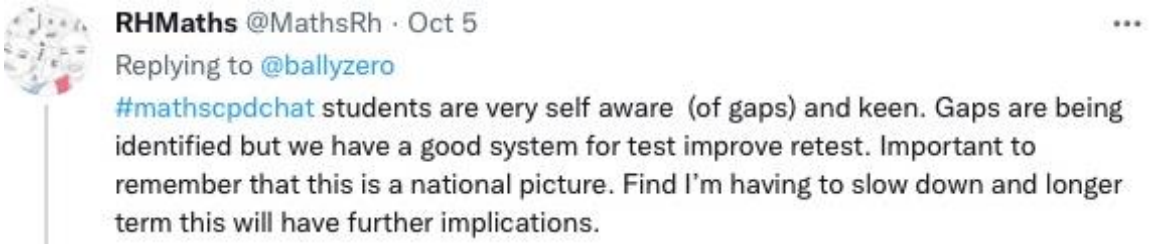
A level maths - Year 13 recovery which is the YouTube channel of Tayyub Majeed, in which he works through A level questions in order to help his students. It was shared by Tayyub Majeed

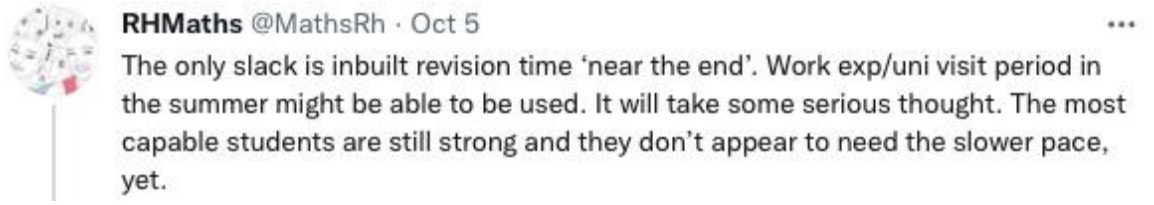
The screenshots below, of chains of tweets posted during the chat, show three conversations about teaching students in Y12 this term. In particular teachers discussed how they and their students are coping with 'gaps' in the students' KS4 learning. **Click on any of these screenshots-of-a-tweet to go to that actual tweet on Twitter.**

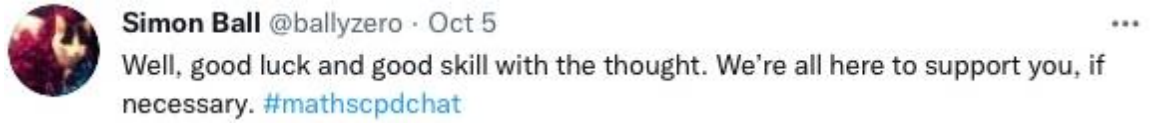
The conversation was generated by this tweet from Simon Ball:



and included these from RHMaths and Simon Ball:







these from Nathalie Leighton and Simon Ball:

Nathalie Leighton @LeightonM4ths · Oct 5
#mathscpdchat going back to linear inequalities regions and then with quadratics. And hopefully homework tasks will do the practice side as I hadn't planned a whole lesson in this.🙄

Simon Ball @ballyzero · Oct 5
I can imagine! Looking at it from the other side, has there been anything they've been really good at? #mathscpdchat

Nathalie Leighton @LeightonM4ths · Oct 5
#mathscpdchat they are aware that they have gaps so do not seem to be too phased and really keen to learn. They have done GCSE statistics so hoping to make up time when we do stats 🤞

Simon Ball @ballyzero · Oct 5
Now that's a big part of it, right there! Determination and work ethic are so important for the course. And fingers crossed the time can be made up! Good luck and good skill with them. #mathscpdchat

Nathalie Leighton @LeightonM4ths · Oct 5
Thanks

and these from Rob Southern, Simon Ball and Mary Pardoe:

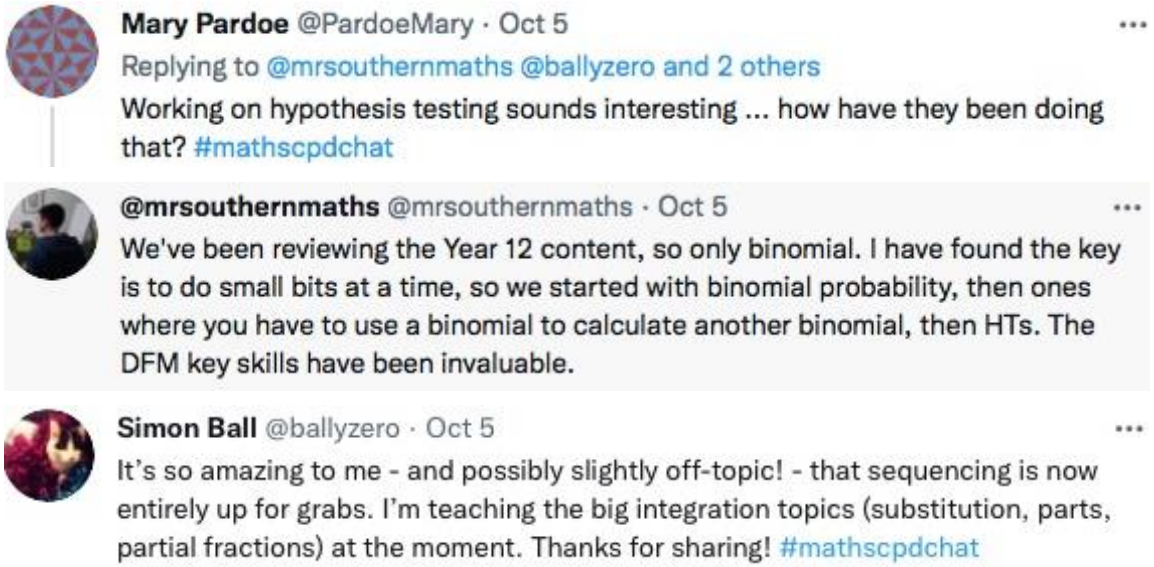
@mrsouthernmaths @mrsouthernmaths · Oct 5
Replying to @ballyzero and @LeightonM4ths
I'm not teaching Year 12 this year but I'm in charge of intervention so I am working with a group of students. The key skills on Dr Frost are great, supported by my videos. @PCMaths has made some brilliant Desmos classroom activities as well #mathscpdchat

Simon Ball @ballyzero · Oct 5
So students have been identified already? Are they making progress under your brilliant and incisive tutelage? #mathscpdchat

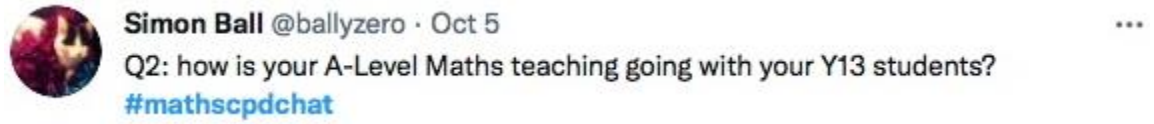
@mrsouthernmaths @mrsouthernmaths · Oct 5
You charmer! We've only had one session so far, working on indices but the feedback was positive. I think they appreciate the opportunity for extra guided practice. #mathscpdchat

Simon Ball @ballyzero · Oct 5
An important foundational topic for both early and late in the course. Will they have many supportive sessions with yourself? And thank you! 😁 #mathscpdchat

@mrsouthernmaths @mrsouthernmaths · Oct 5
Weekly lunchtime taught sessions, one for Year 12 and one for Year 13. I tend to set them some consolidation work to lead into the next session. Year 13 have been working on hypothesis testing and we'll be doing critical regions this week. #mathscpdchat



The following screenshots show a conversation about the teaching and learning of Y13 students. It focusses on ways of helping students deepen their grasp of what they were taught in the unusual context of their Y12. **Again, click on any of these screenshots-of-a-tweet to go to that actual tweet on Twitter.** The conversation was generated by this tweet from Simon Ball:



and included these from Rob Southern, Mary Pardoe, Dawn Denyer and Tayyub Majeed:

Simon Ball @ballyzero · Oct 5

Replying to @mrsouthernmaths

Absolutely vital to go back over things. Our first assessment is pure Y12 topics (and Pure Y12 topics, ha ha) for just that reason! #mathscpdchat

@mrsouthernmaths @mrsouthernmaths · Oct 5

I'm trying to introduce them in Year 12 as well. Giving the students continual practice means you can build on more solid foundations and then the revision period is actually revision rather than relearning. Here's a couple of examples #mathscpdchat

Pure and Mechanics Revision Sheet 1.

Pure questions:

1) The lines l_1 and l_2 have equations $y = 3x - 2$ and $2y + 4x = 10$ respectively.

a) Find the gradients of **both** lines. **(3)**

b) Find the coordinates of the point of intersection of the lines l_1 and l_2. **(5)**

c) The line l_3 is parallel to the line l_1 and passes through the point with coordinates $(4, -3)$. Find the equation of line l_3. **(4)**

d) The line l_2 cuts the x-axis and y-axis at points A and B respectively. Find the coordinates of points A and B. **(4)**

2) The straight lines with equations

$$y = 3x + c \quad \text{and} \quad y = 2x + 7$$

intersect at the point $P(2, k)$, where c and k are constants.

Find the value of c and the value of k. **(4)**

Pure and Statistics Revision Sheet 1

Pure questions – Do not use a calculator. Show all your working out.

1) Write down the value of $64^{\frac{1}{3}}$ **(1)**

2) Find the value of $64^{\frac{-2}{3}}$ **(2)**

3) Simplify $\left(4\sqrt{3}\right)^2$ **(2)**

4) Simplify $\frac{6\sqrt{3}-4}{8-\sqrt{3}}$, giving your answer in the form $p\sqrt{3}-q$, where p and q are positive rational numbers. **(4)**

5) Given that $8\sqrt{2} = 2^m$ find the value of m. **(2)**

6) a) Find the value of the discriminant of $x^2 + 6x + 11$ **(1)**

b) Given your answer to part a), determine how many roots the equation $x^2 + 6x + 11 = 0$ has. **(1)**

Simon Ball @ballyzero · Oct 5

What a fabulous system. We all have to work towards revision being revision, rather than relearning. What a great way to look at it! #mathscpdchat

Mary Pardoe @PardoeMary · Oct 5

Interesting word 'revision' ... re -vision ... re-seeing! #mathsCPDchat

@mrsouthernmaths @mrsouthernmaths · Oct 5

The sheets are most effective if students complete them in a book so that they can track common errors. I also encourage them to use two different colour pens depending on whether they could do a question independently or needed help/to check notes. #mathscpdchat

Mary Pardoe @PardoeMary · Oct 5

Replying to @mrsouthernmaths and @ballyzero

What a good idea ... they then have a history of their own thinking ... stages in their thinking-development? #mathscpdchat

@mrsouthernmaths @mrsouthernmaths · Oct 5

Exactly. Often students will get high scores for homework if they have used their notes or had help and this approach helps them to self-diagnose what they need to work on. #mathscpdchat

Simon Ball @ballyzero · Oct 5

So simple, but so good an idea! It's vital for students to take charge of their own learning, and simple things like that can really make a difference. I have students asking for extra questions at the moment to fill in their skills gaps. #mathscpdchat

@mrsouthernmaths @mrsouthernmaths · Oct 5

Replying to @ballyzero

Year 13 have come back with really good focus. Most of the ones who have gaps from Year 12 have self-identified for intervention, which is really encouraging. They are also being proactive in seeking help with assignments before deadlines. #mathscpdchat

Simon Ball @ballyzero · Oct 5

I have spotted an uptick in desire for support with assignments too! I tend to find that the UCAS process makes this happen naturally - do you see any difference between this year and previous years? #mathscpdchat

@mrsouthernmaths @mrsouthernmaths · Oct 5

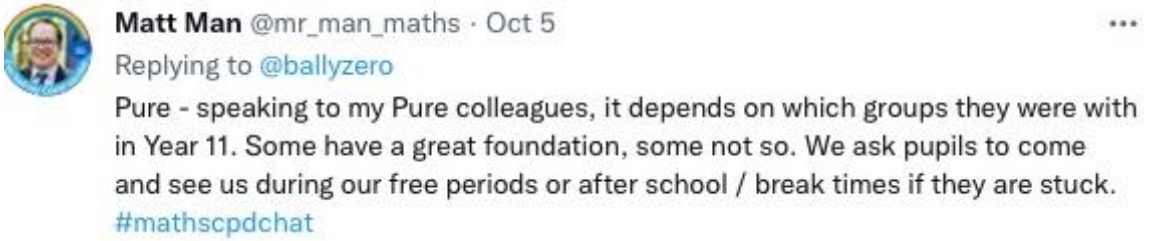
Not really, to be honest. I agree that UCAS sharpens their focus. Interestingly, Year 13 seem far less concerned by the uncertainty over exams than my Year 11s. #mathscpdchat

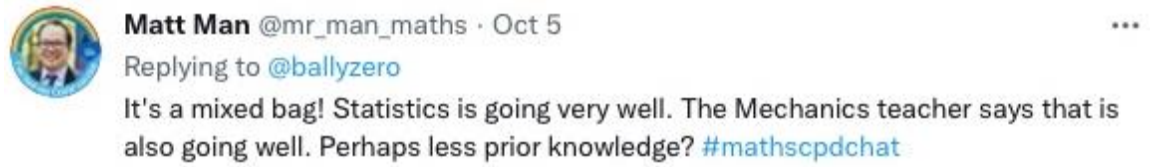
Simon Ball @ballyzero · Oct 5

Hmmm! I wonder if that will change as the exams get closer?! #mathscpdchat

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

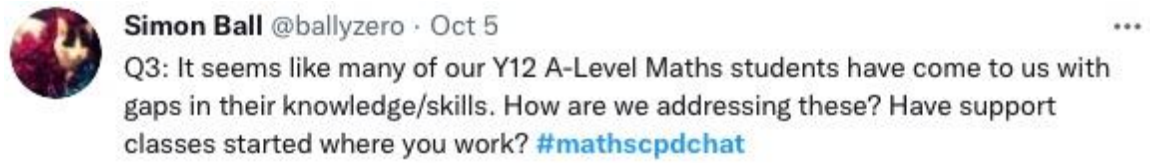
The discussions shown in the sequences of screenshots of tweets reproduced above were generated by the host's first two questions. There were also these three replies to Q1 which were not part of any conversations because they were tweeted after the chat had officially ended…



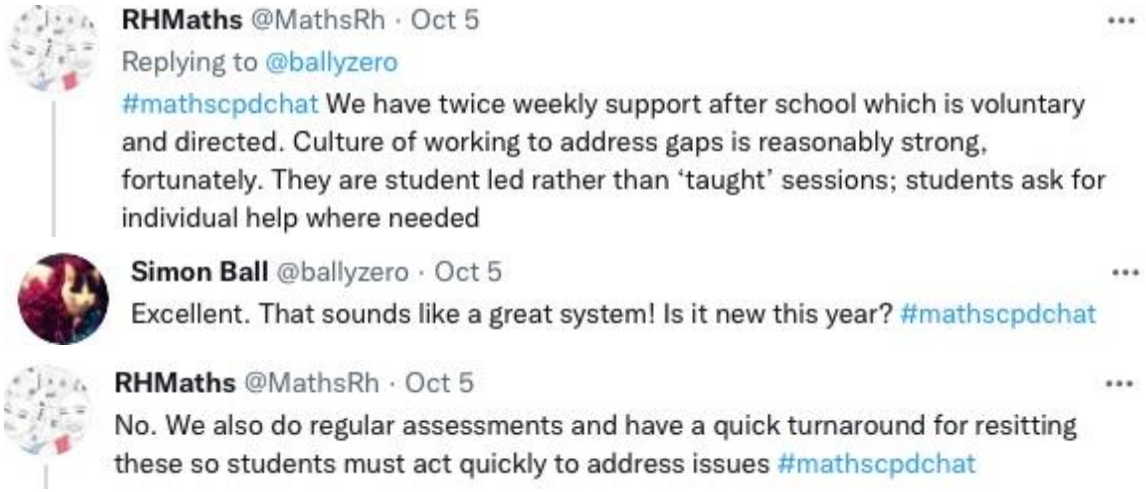


… and this reply to Q2 from the same contributor:

The third question from Simon (the host) was an opportunity for teachers to provide more information about the main issue that Q1 had raised:



This short conversation …



… provided a reminder that studying maths at A level challenges students to master many new mathematical ideas in quite a short time:

There was a reply to Q3 that was tweeted too long after the chat had ended to be part of a conversation, but again it is a reminder about the time-pressure that both students and teachers are presently under: