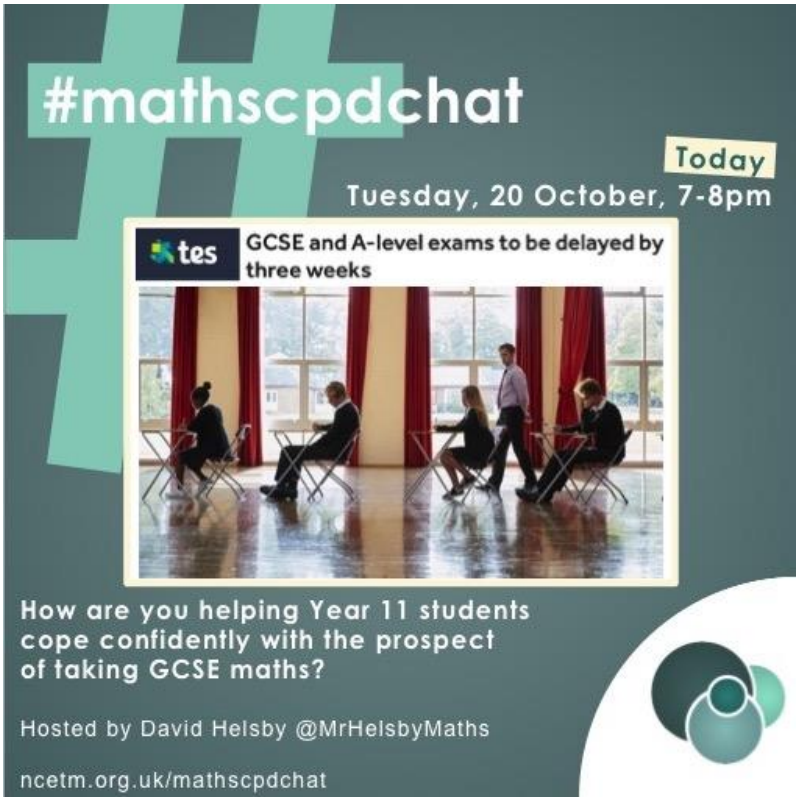
#mathscpdchat 20 October 2020

How are you helping Year 11 students cope confidently with the prospect of taking GCSE maths?

Hosted by David Helsby

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



Some of the areas where discussion focused were:

resources and approaches that maths teachers are presently using to support the learning of their GCSE students:

- at least one teacher is using a *MathsWatch* (link provided below) content list to **'build a plan for how they will cover each of the atoms before Feb/March'** … then students will '**start past paper practice**';
- **how teachers are using past papers** … some teachers drip feed papers to their students throughout the year … some teachers mark past papers each week, their

students having worked on them for homework … the students of some teachers use past papers as a self-assessment tool ('independent revision skills being even more important at present times') … whether, when tackling past papers, students 'just miss out the ones they can't do' while convincing themselves that they will be able to do them by the time of the real exam;

- at least one teacher has created a **'student self-evaluation form'/'student reflection booklet'** (link provided below) that students can use to prompt reflection on their progress and mathematical-learning needs;
- some teachers are endeavouring to **inform/educate the parents** of their students **about good maths revision practice**;
- at least one **teacher is making three 15-minute 'revision videos' each week** (a different video for students assumed to be working at Higher, Higher/Foundation ('crossover'), and Foundation levels) … students are expected to spend about an hour working on one of these videos, pausing it and trying questions as they go … the videos are provided in addition to other tasks that are set for both 'new learning' and revision purposes;
- some teachers are **'doing a weekly assessment' of students' learning about topics that are being taught this term** … they are putting aside **half-a-lesson each week for students to 'work-on/practise their weaker areas** and showcase their improvements';
- some teachers are creating **worksheets for 'retrieval practice of core skills'** for students to do 'at this time of the year before they attempt problem-solving questions' … these worksheets are being used as 'lesson starters', with the same worksheets returned to (done again by the students) after two weeks ('students actually look forward to it as they like to see their improvements');
- some teachers **'always go to @mrbartonmaths' websites**', particularly to his 'variation theory' material (link provided below);

how teachers are this term approaching the (re)teaching and (better) learning of the maths that they tried to teach during the general lockdown:

- teachers reported that during the lockdown students appear to have 'developed some procedural knowledge in the new topics that were covered then', and that therefore teachers are now trying to deepen students' understanding of the mathematics of those topics … that while teaching remotely it was 'so hard to assess and test depth of understanding' … that **differences between teaching to enable students merely to develop procedural fluency and teaching to help them acquire deep understanding 'seem to have been brought to the front' by the need to engage in remote teaching and learning**;

- **reasons why so many teachers chose to teach mathematics of probability during the general lockdown** … because 'it was easy to model using my visualiser' … because 'it uses a lot of key skills of previous learning (such as fractions and decimals)';

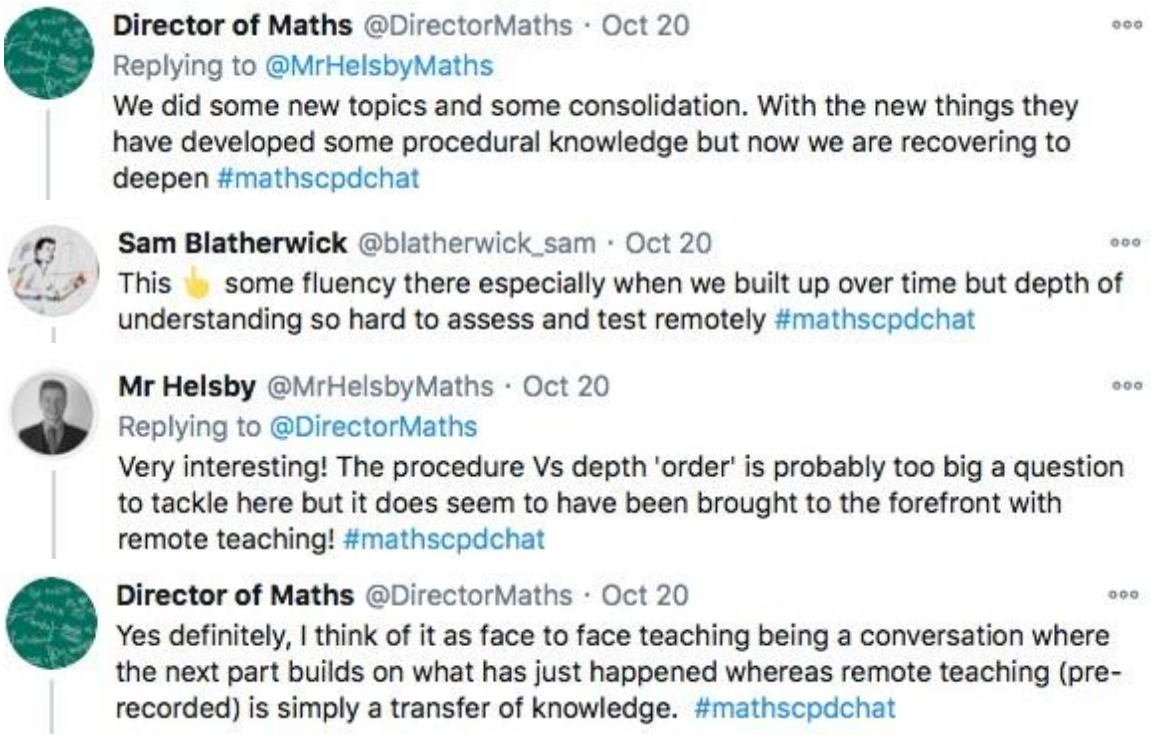
the mathematics that teachers would choose to 'cover' between now and the 2021 GCSE exams if those exams were cancelled, because, for example, they regard the learning of that mathematics as being essential preparation for continuing to learn mathematics beyond GCSE:

- teachers mentioned: coordinate geometry, ability to manipulate algebraic expressions, indices, index laws and surds, solving quadratic equations, graphing, trigonometry.

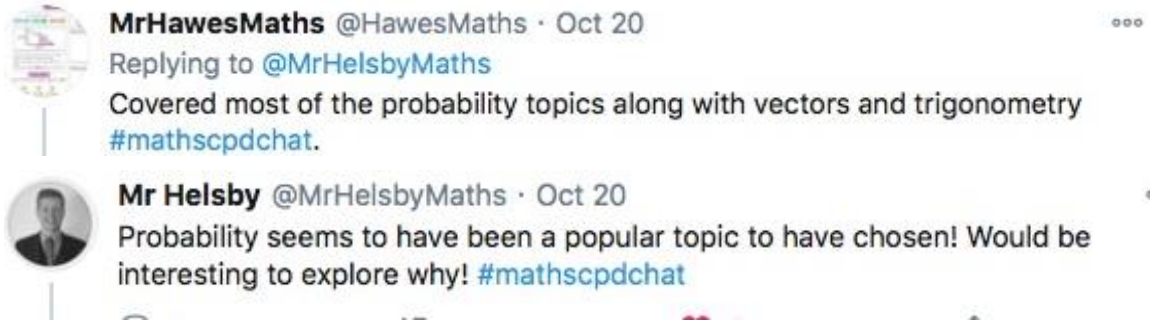
In what follows, click on any screenshot-of-a-tweet to go to that actual tweet on Twitter.

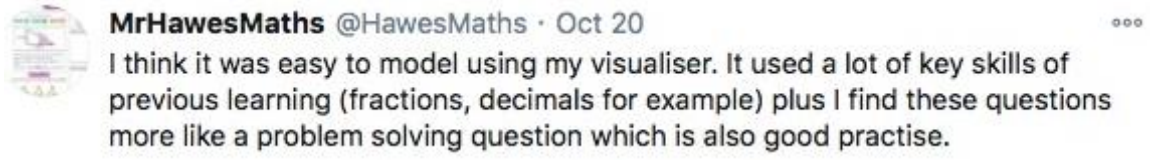
This is a part of a conversation about how some teachers are reflecting on, and responding to, their perceptions of students' learning during the general lockdown. The conversation was generated by this tweet from David Helsby:

and included these from Director of Maths, Sam Blatherwick and David Helsby:

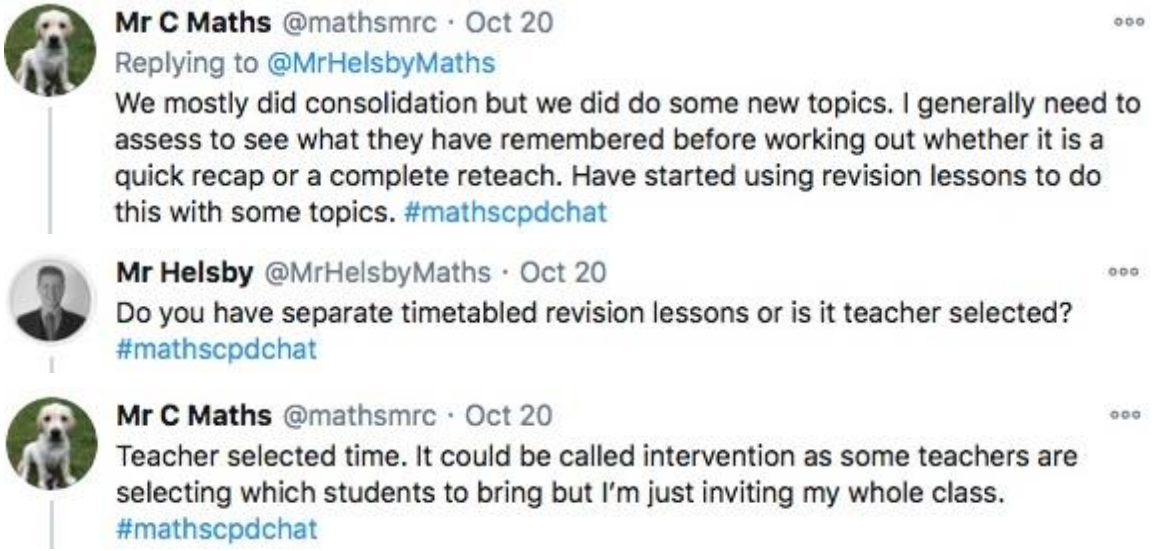


these from MrHawesMaths and David Helsby:





and these from Mr C Maths and David Helsby:



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

Among the links shared were:

Post-16 GCSE which is the part of the MEI website that offers support to teaching practitioners supporting post-16 learners who are working towards achieving grade 4 or better in GCSE Mathematics. It was shared by Mary Pardoe

11-16 maths resources which are resources developed by the AMSP to deepen the mathematical understanding of students in Key Stages 3 and 4. It was shared by Mary Pardoe

Preparing for GCSE Problem Solving which is a book from the ATM containing twenty-five tasks to help students master key mathematical-reasoning strategies. It was written by Heather Davis, Michael Gibson, James Robinson, Jocelyn D'Arcy, Ben Daniel-Thorpe and Jim Thorpe. It was shared by Mary Pardoe

Planning for Teaching GCSE Mathematics with Mixed Attainment Groups which is a book from the ATM by Mike Ollerton and Sam Hoggard that is suitable for use in all GCSE classroom group settings, and which brings together tasks designed to support learning and planning for teaching GCSE Mathematics. It was shared by Mary Pardoe

variationtheory.com which is an valiant attempt by Craig Barton to assemble a collection of high-quality sequences of questions and examples using key principles from Variation Theory. It was shared by Mr C Maths

MathsWatch which is an online maths platform offering 'videos, online assessments, feedback tools, independent learning, printable worksheets and so much more'. It was shared by Director of Maths

Maths Genie which is a website where, among other maths-exam focused material, you will find GCSE maths past papers with model solutions and video explanations. It was shared by Mr Needham

Mathsbox which is a website containing 'more than 4800+ ready to use resources' including skills checks, topic resources, differentiated questions and 'a collection of GCSE resources for revision'. It was shared by Mr Needham

Maths4everyone which is a website containing resources, such as worksheets and workbooks, that have been 'designed to help with primary and secondary school maths'. It was shared by Emma Richer