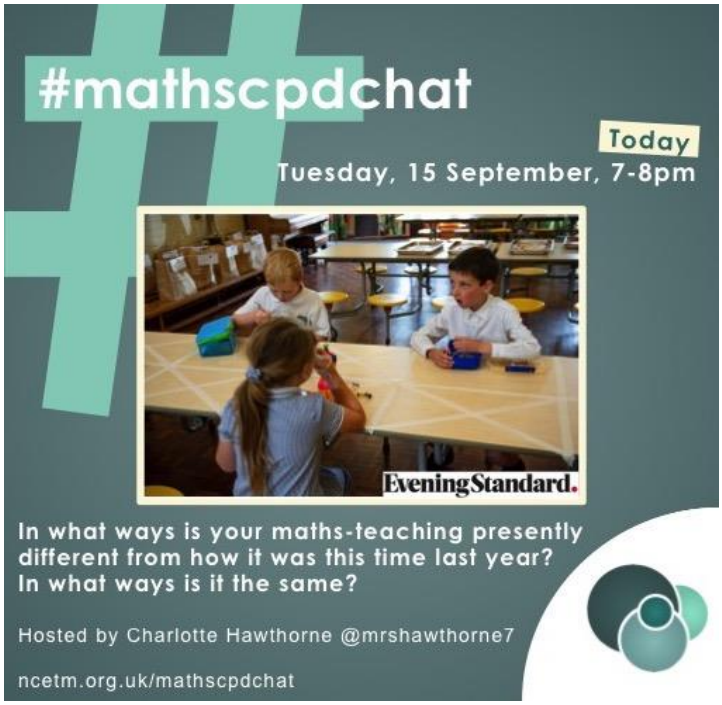
#mathscpdchat 15 September 2020

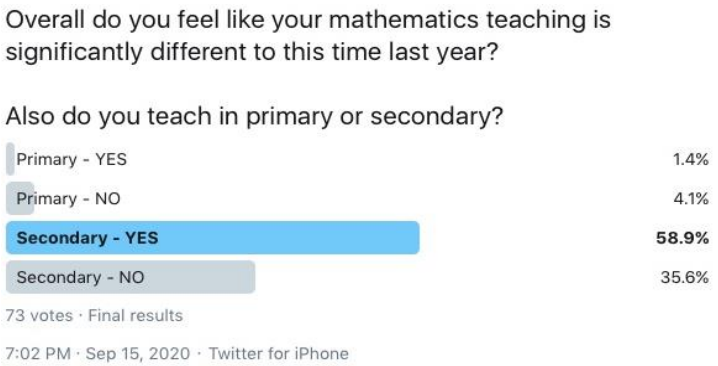
In what ways is your maths teaching presently different from how it was this time last year?

Hosted by Charlotte Hawthorne

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



the **results of a poll** tweeted by the host were:



Some of the areas where discussion focused were:

unexpected aspects of contributors' experiences in their maths teaching this term so far:

- some teachers said that it is not as hard as expected to teach now in a way that is very **close to how they were teaching at this time last year** … some teachers are finding themselves becoming 'sharper' at some aspects of their teaching (such as at 'adapting examples to highlight key structures' and linking mathematical ideas);
- some teachers have been surprised by how much **more 'content you can get through' in a slightly longer (by, say, 10 minutes) lesson**;
- that it has been unexpectedly challenging to have to **adjust to teaching 'split lessons'** (owing to staggered break times) … feeling a need to plan a two-lesson structure for one lesson;
- the **'recap' part of each lesson is taking longer than expected** owing to the varied experiences of lockdown learning … 'recap' can take up too great a part of a lesson … 'recap' may be 'reactive' rather than 'responsive' … there was a short discussion about **ways in which 'reactive' teaching differs from 'responsive' teaching** … that, for example, in 'reactive' teaching you are trying to fix immediately a problem in front of you now, whereas 'responsive' teaching follows after you have spent some time reflecting on the 'whole picture' (including the context and possible root causes of the problem) and considering possible strategies;
- also unexpected was the **extra time needed to plan a lesson when it has to be suitable for face-to-face and remote teaching at the same time** … that it is challenging to be asked by senior teachers to 'use the same slides for in-class and home learning' … that, if you normally 'do a lot of live modelling' in an in-school lesson, preparing to teach the same ideas remotely is 'like planning a whole other lesson' … consequently some teachers are turning to using 'off-the-shelf' lessons planned by someone else … someone suggested a solution might be to acquire screen-recording software, and post every lesson after it has taken place to those pupils who are working at home;
- many teachers are **making much greater use than ever before of a visualiser** in every lesson … some teachers are taking photos of what is displayed on the visualiser (such as the teacher's or a pupil's working) and pasting the photos into PowerPoint slides;
- **unexpectedly making much less use of physical manipulatives** owing to abnormal cleaning requirements … that leaving a collection of sets of manipulatives permanently in each 'bubble' can be a solution … that online virtual manipulatives are proving to be 'very handy';

- that when teaching in many (even in 18 for one teacher) different classrooms it can be unexpectedly challenging to find a technical way to be able to **set up quickly a visualiser in every one of the classrooms**;
- **unexpectedly teaching mixed-attainment classes is proving to be 'a steep learning curve'** for some teachers … that 'even within sets there is a greater spread for a variety of reasons' … feeling that one is 'teaching to the bottom', trying to extend upwards and finding that difficult … that sometimes teachers are 'afraid to go in too high', but that, with extra support provided for some pupils, 'most will thrive' eventually … one teacher advised other teachers who presently feel that they are not yet 'good enough' at teaching mixed-attainment classes to 'start high and scaffold down' for the lower attainers while extending the higher attainers by challenging them to write clear and concise explanations of their reasoning;
- some teachers are **missing being able to have 'quiet individual conversations' with pupils** in order to address misbehaviour or lack of understanding;
- assessment … some teachers are finding that **without being able to 'circulate and mark' in class**, they **'can't confidently say at the end of a lesson if pupils have understood the topic or not'** … other teachers are finding that this is largely compensated for by arranging for pupils to show their responses on individual mini-whiteboards … some teachers are 'cold calling' (directing a particular questions to a particular selected pupil) more often … some reluctance to using 'cold calling' (because pupils can be fearful that they will be shown up in front of the whole class) was expressed … that establishing an atmosphere in the classroom in which being unsure during the process of coming to understand something is respected may be the crucial factor in getting to 'see' pupils' thinking … that making greater than ever before use of 'partner discussions' and trying to listen in to them is giving some teachers some insight into how pupils are thinking;

ways in which teachers' planning and teaching is different for live and recorded lessons:

- some teachers are planning that **when a whole cohort is at home for a short time** pupils will watch videos at home and try tasks/questions related to the content of the videos … when they are back in school teachers will 'pick up' difficulties, and consolidate and extend the intended learning;
- other teachers have **live lesson times planned to 'kick in'** if a whole cohort has to go home;
- that trialling **after school intervention remote lessons for Year 11** has so far been very successful … pupils have liked going home, having a break, and then engaging in an online session from home;

'tried and tested' ways in which teachers are managing to **assess pupils' learning while not being able to circulate around the classroom**:

- each pupil has their own **mini-whiteboard** on which s/he writes responses to questions, and which s/he holds up for the teacher to see;
- some teachers are giving pupils **written tests** that are collected in and **marked by the teacher who is wearing gloves**;
- relying on **pupils being confident in saying in front of the whole class that they are struggling** … developing a classroom atmosphere in which all pupils are happy to do this;
- having a **'live marking table' in every classroom** … the teacher looks at the work that a pupil has placed on the table before the pupil is called out to the table when the teacher has moved away … the pupil and teacher then discuss the work at a safe distance from each other;
- asking **multiple-choice questions** … pupils use their hands and fingers to indicate their responses;
- pupils use a mark-scheme provided by the teacher to **mark their own work** … then each pupil indicates how they have done (e.g. 'very well', 'OK', 'hopeless', etc);
- pupils answer a few questions in their jotter, write their 'answers' on 'post-it' pieces of paper, then bring their **'Post-it' notes** to the front where the teacher scans them with her **'Post-it' app** (link provided below);
- many teachers are using **'exit tickets'** on which pupils write responses to teachers' questions or commands … some teachers ask pupils to stick the exit tickets into their books and leave the books open for the teacher to see;
- in some classes all the pupils (each of whom has their own iPad) during or at the end of lessons **upload (for the teacher to see) photos of their work**;
- at significant times during a lesson, students put their **thumbs up, middle or down** to indicate to the teacher the degree of their confidence in their own grasp of whatever is in focus;

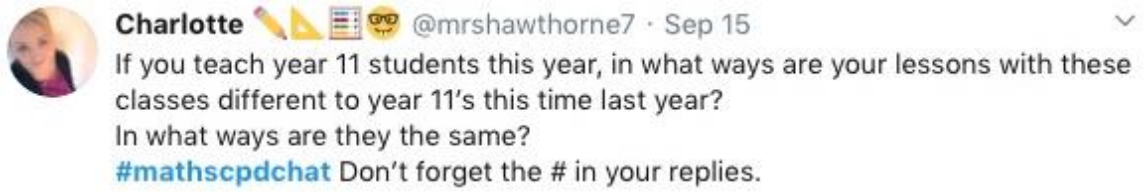
ways in which present Year 11 lessons are different to Year 11 lessons at this time last year:

- some are **a little longer**, which is helpful;
- some are different in that the teacher is constantly looking for ways to 'bring in content from the start of the course', and is **spending more time 'recapping'**;
- having done an assessment some teachers are now 'producing a **'tailor-made' scheme of work for each class** to take that class up to their mock GCSE exams';

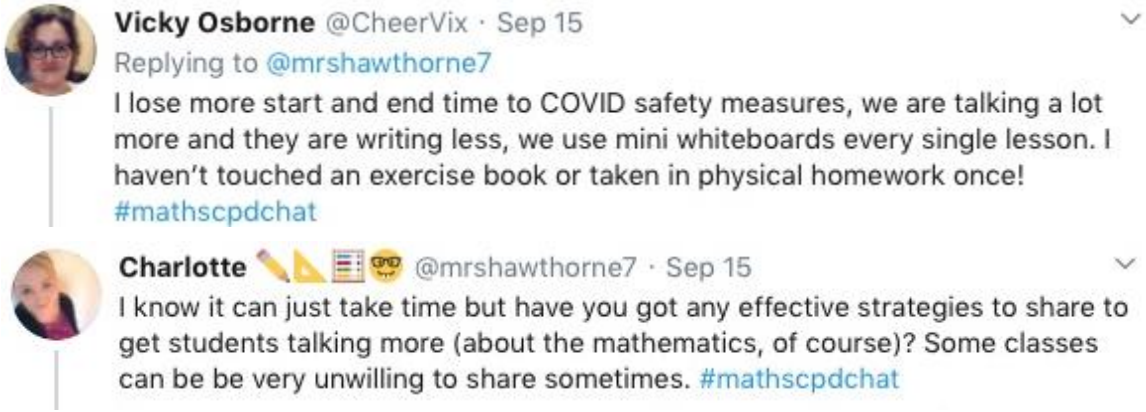
- some teachers are encouraging Year 11 students to talk more during lessons than did the Year 11 students this time last year … finding tasks that provide lots of opportunities for **students to collaborate and talk to each othe**r (links provided blow);
- teachers are **'doing a lot more probing for gaps'**;
- in order to generate fruitful pupil-pupil discussion some teachers ask an ordered series of questions with a particular focus (possibly about a problem solution) … for example 'What did you do first?', 'What comes next?', 'What might step 3 be?' … students do not put up hands to respond individually, but instead they discuss their responses to each question with each other … this structure enables student collaboration without the students needing to organise it;
- some teachers are **fixing large whiteboards on the wall at the back of their classroom** on which students will 'do their working' including expressing their reasoning … the intention is that (when it is safe) students will work together on problems using the large whiteboards as their shared working spaces.

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 encouraging pupils to talk to each other and collaborate, thus providing opportunities for their teacher to assess their learning and mathematical thinking without having to get close to them physically. The conversation was generated by this tweet from Charlotte Hawthorne:



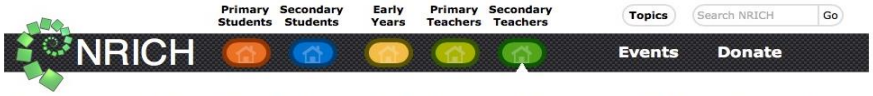
and included these from Vicky Osborne and Charlotte Hawthorne:



these from Becky Clinton, Mary Pardoe, Peter Lacey and Pip - Mathematics:

Becky Clinton @beckycmaths · Sep 15

you need to give them an activity that requires them to talk. You can get group activity cards where each person has to participate in order to solve the problem (placed on cards) so that without each other they can't get to the answer. e.g.



Co-operative Problem Solving: Pieces of the Puzzle Approach

Age 5 to 16
Article by Jenni Way
Published February 2011.

Mary Pardoe @PardoeMary · Sep 15

Yes ... 'Zin Obelisk' was the first (in my distant memory)!

#mathscpdchat

Peter Lacey @ecarda1 · Sep 15

Replying to @PardoeMary

Your reference to Zin Obelisk brought back wonderful memories. Collaborative problem solving alongside team building infused with fun! I notice all the cards are available through Nrich.

Pip - Mathematics @AccomplishEdu · Sep 15

A lovely task - Here is the @nrichmaths link

Zin Obelisk

In the ancient city of Atlantis a solid rectangular object called a Zin was built in honour of the goddess Tina. Your task is to determine on which day of th...

nrich.maths.org

and these from Vicky Osborne, Charlotte Hawthorne and MrHawesMaths:

Vicky Osborne @CheerVix · Sep 15
Replying to @mrshawthorne7
I used to ask really open questions and wait for hands up, with timid classes that's just crickets. To start with I make sure I ask a part of a question of everyone, A what did you do first, B what comes next, C what would you say step 3 should be? No hands up, everyone talks.

Charlotte ✏️📐🗒️🤓 @mrshawthorne7 · Sep 15
#mathscpdchat Good strategies to get classes talking more (about the maths!)

Vicky Osborne @CheerVix · Sep 15
They are then collaborating without having to organise it, those scared to talk see everyone talking. I am annoying and relentless! The bigger questions: why did you choose that method etc I scaffold first. Did you do that because of A or B? Were you wrong because of this or that

MrHawesMaths @HawesMaths · Sep 15
Replying to @mrshawthorne7
I have put four whiteboards at the back of the room and when I am allowed (distancing of course) i plan to heat students to break off and collaborate on problems at the back in groups. #mathscpdchat

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

Among the links shared were:

Co-operative Problem Solving: Pieces of the Puzzle Approach which is an article from NRICH about reasoning tasks. Each group member is given a piece of information to share with the rest of the group so that the people in the group can solve a problem together. It was shared by Becky Clinton

Zin Obelisk which is a co-operative problem solving task from NRICH. It was shared by Pip - Mathematics

Mathsbot Virtual Manipulatives which is a very useful collection of an enormous range of virtual manipulatives. It was shared by Martyn Yeo

Effective Questioning and Responding in the Mathematics Classroom which is an article by John Mason. It includes advice about how to establish a classroom atmosphere in which all pupils are happy to talk in front of the whole class about their mathematical struggles. It was shared by Mary Pardoe

Post-it App which is a downloadable application for iPhone or Android devices that enables the user to collect and store information written on Post-it notes. It was shared by Vanessa Moreland

MEI Deeper Maths which is an innovative suite of resources designed to support excellent practice in the teaching of mathematics. The first materials available are in the topics Angles and Trigonometry. New units will be released throughout Autumn 2020. It was shared by Mary Pardoe