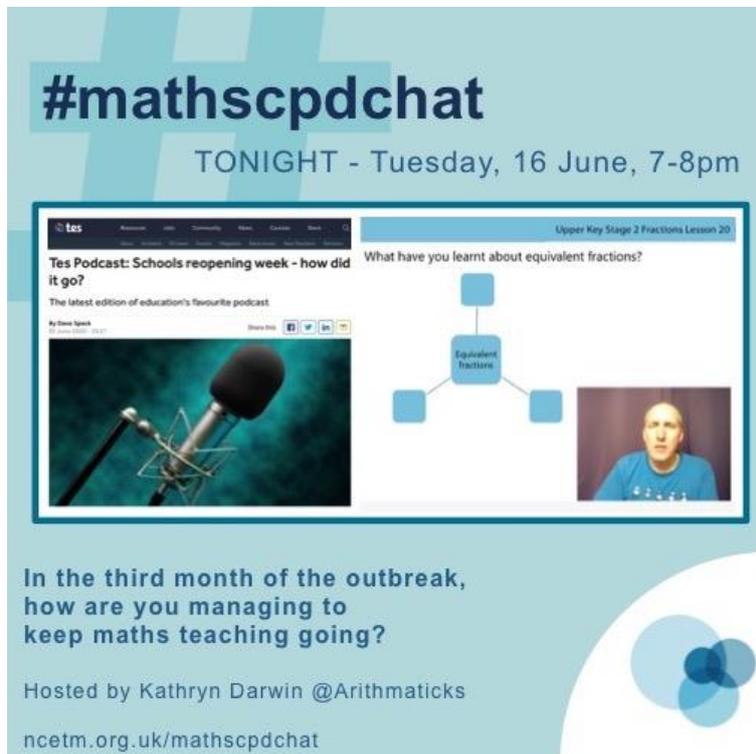


#mathscpdchat 16 June 2020

In the third month of the outbreak, how are you managing to keep maths teaching going?

Hosted by [Kathryn Darwin](#)

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



#mathscpdchat
TONIGHT - Tuesday, 16 June, 7-8pm

Tes Podcast: Schools reopening week - how did it go?
The latest edition of education's favourite podcast.
By Sara Spink
24 June 2020, 10:27

Upper Key Stage 2 Fractions Lesson 20
What have you learnt about equivalent fractions?

Equivalent Fractions

In the third month of the outbreak, how are you managing to keep maths teaching going?

Hosted by Kathryn Darwin @Arithmaticks
nctem.org.uk/mathscpdchat

Some of the areas where discussion focused were:

ways in which the **maths teaching during school closures** of contributors to the chat **has begun to change recently**:

- some primary and secondary teachers **had been missing real contact with pupils** so much that they are now 'loving being able to interact properly with students again'

... **starting to work again with pupils in school** is for many teachers a **'welcome return'**;

- other teachers **were 'just getting into the swing of' remote teaching** to support home learning, and, because they have just started going into school for face-to-face teaching, they **'feel like I'm playing catch up again! Eek!'**;
- some primary teachers are **now working in school full time** ... some are teaching mixed-age groups of key-workers' children ... challenging pupils in mixed-age groups to solve 'daily maths problems' (link to examples below);
- some secondary teachers are finding that the **engagement of pupils** (particularly of those in Key Stage 3) with home-learning maths tasks **is dropping off** ... **task completion rates are poorest when the aim is for pupils to acquire new knowledge**, rather than to practise existing skills and apply existing knowledge ... teachers are **looking for ideas/material to 'breathe new life into' what they are providing for home learning** ... some are integrating interactive games into online lessons in order to 'inject some fun and competition' ... some games reveal pupils' misconceptions;
- for some secondary teachers the 'biggest change since March' has probably been **changing (rewriting) their KS3 scheme of learning with the aim of reengaging pupils** ... **providing 'wider' tasks** (tasks that are 'a little beyond' the normal scheme of learning) ... for example, tasks generated by questions that arise when pupils watch a video showing the Fibonacci sequence revealed in nature;
- some teachers are becoming concerned that **when students try to 'learn a hard topic on their own'** the **work required at a later date to correct consequently acquired misconceptions** may be more than that required if the students first meet the 'hard topic' with a teacher at the later date;
- even though most teachers are now working in school for at least some of their time, they are **still managing their live online lessons for home learning from their homes** rather than from school ... a few teachers who happen to be in school for face-to-face teaching may teach/manage the occasional online lesson (for pupils still at home) from school;
- some teachers have **lately begun to read more professional books and documents, work more closely online with colleagues, and engage in more online professional development 'events'** ... teachers are hoping that knowledge gained in these ways will inform their thinking about how to 'pick up' and 'fill in' pupils' recently acquired learning gaps;
- that both **remote teaching and collaborative planning online have become easier** 'now that everyone is in a routine';

- that the **weeks spent trying to provide/create material** for home learning has drawn attention to ways in which **homework tasks** that are set during 'normal times' **might be improved** ... that consequently some maths homework policies have been changed;
- the weeks during which most pupils were expected to learn maths at home have **'highlighted how important having good parental engagement and relationships is'** ... whether the ease with which teachers are able to establish and maintain good relationships with parents depends on the length of time during which pupils are taught maths by the same teacher ... that some attempts to communicate with parents in a supportive way have not been 'taken as' supportive by the parents ... that some parents appear not to have seen/appreciated/understood how much work teachers have been doing to try to support pupils' work at home;
- one of the **biggest topics of discussion in some maths departments recently** has been the extent to which **parents' own negative attitudes to maths** may undermine the willingness of their children to engage in mathematical activity at home ... that **such children are consequently disadvantaged** in comparison with those whose parents are more enlightened ... that **this disadvantage effect has increased as time has passed**;
- that because 'lockdown' has affected families in different ways, it has often been **hard for teachers to know whether, or in what 'spirit', to contact parents and pupils at home** ... some teachers have found that it is often sufficient for pupils to know that there is a teacher whom they can contact, and who that teacher is;
- some teachers have found that **most students can cope well with technical aspects of remote online pupil-teacher interaction** ... some schools have managed at last to get laptops to a few pupils;
- some teachers have been delivering gifts (e.g. sweets or vouchers) to those pupils who have 'made great efforts' to learn online at home ... distinguishing between 'intrinsic motivation' (resulting from pupils' own desires) and 'extrinsic motivation' (resulting from providing rewards) ... that teachers aim to generate/facilitate **intrinsic motivation**;
- as time has passed teachers have discovered **ways of improving their methods of preparation of home-learning materials** ... for example, by using filters to improve the visibility of photographs, cropping images so that they can be sent faster, learning how to reduce the sizes of files so that they can be emailed rather than posted on YouTube;
- teachers have been working together to develop **teaching strategies that are likely to help to reveal pupils' depths of understanding and acquired misconceptions**

when pupils return to school ... that it will be more important to address learning that may or may not have happened at home, rather than to move rapidly on to 'new' areas;

- some secondary teachers are still **working successfully online with Google Classroom in teams of three teachers with one group of students** ... one teacher leads the online session (lesson), one uses the chat bar to respond to students questions/comments, and the third teacher takes the register and monitors behaviour/engagement ... some primary teachers are also using Google Classroom successfully;
- to facilitate the remote teaching of pupils still working at home some secondary maths departments have **split each Year group into two or more subgroups** ... **teams of two or more teachers are assigned to team-teach each group**, arranged so that **every pupil is taught by a team of teachers that includes their normal maths teacher**;
- in some schools all online teaching is in line with the school's own '**all-pupils'-microphones-and-cameras-must-be-switched-off**' policy ... consequently all pupil-to-pupil and pupil-to-teacher communication has to be via messages typed in the chat bar ... in other schools all microphones and cameras are on 'just like an actual lesson', and online lessons for all year-groups follow the normal timetable;
- some maths teachers have been asked by their school leaders (SLT) to be **prepared to continue in September to provide online material for home learning**;

managing the return to school of students in Years 10 and 12

- **in most schools remote learning is still the dominant mode of learning maths for students in Years 10 and 12** with subgroups of both the Year 10 and Year 12 cohorts coming into school on different days over a particular time period (such as two weeks) ... for example, in some schools Y10/12 students are **in school for only one day per week 'for a mix of wellbeing-support and learning'** ... other schools have **one quarter of the Year 10 cohort and one quarter of the Y12 cohort in each day for three hours, one hour of which is devoted to maths** ... at least one school has **Y10/12 students in school for one day per week during which they have three hours of maths**, enabling the teacher to 'cover a lot without interruption' ... other schools are **not teaching any maths in school to Y10/12 students** (the students come in to see their form tutors for four hours per week, during which they have some quiet supervised study-time ... with teachers providing 'troubleshooting' support where needed);
- schools may have **between 6 and 12 students per classroom** ... it seems that in most schools the students stay in the same room while they are in school, and the

teachers move ... some schools are providing each student in Y10/12 who is in school with their **own pen, paper and a mini-whiteboard on their desk**;

- in some schools **Y10 students are not learning 'new maths content' while they are in school** ... teachers are 'checking content covered in remote learning', and continuing to '**deliver new content remotely**' ... in one school, where new content is being taught, nearly 100% of higher attaining Year 10 students are engaging well with it, compared with only about 30% of students 'in bottom sets';
- most teachers are now '**pushing on with teaching new content**' in Year 12 ... 'else we'll not finish the course';
- a **poll set up by the host yielded the following results** ... of the remote learning that teachers are setting, 24.2 % is 'new content, 30.3% is 'old content, and 45.5% is 'a mixture of the two';
- some teachers are trying to **select resources to use with students in school that will 'complement' what the students have been doing at home**, and that can also be sent out for home learning;
- some teachers are using the following lesson-structure with students in Years 10/12 ... a **'generator' lesson is pre-recorded** ... once students have experienced the 'generator' lesson it is **followed up with a related 'live lesson'** in which students do maths generated by the pre-recorded lesson, and discuss (with each other and with the teacher) ideas, methods, questions, answers, findings and any other issues arising ... the 'live lesson' may be a face-to-face lesson in school, or it may be an online interactive lesson;
- other teachers are proceeding 'the other way round' ... that is, two teachers pair up, **one of them teaches a lesson to students in school**, and then **the other teacher provides a follow-up online session** addressing the same mathematics/intended learning;
- the danger that some Year 10 students may be thinking of their one day of learning per week in school as '**school done for the week**';

balancing the face-to-face teaching of some pupils in school with the managing of remote-teaching for pupils learning at home:

- that **coping with this is challenging** ... many primary teachers have chosen to set a weekly 'maths menu' (consisting of tasks of various different kinds) for pupils working at home ... they follow a loose suggested timetable which includes a weekly small-group chat with their class teacher via Zoom/Teams/Skype ... whether this way of proceeding might 'work' in secondary schools;
- in secondary schools where the whole maths department has worked together to create shared resources, **online lessons have been planned and scheduled in**

advance ... this allows teachers to concentrate now on planning and teaching their in-school lessons, all of which are recorded so that students not in school can access/experience them ... **recorded in-school lessons may be retained for use in the future** (e.g. for use as a resource for students who have missed lessons owing to normal absence) ... that a bank of recorded lessons, each lesson linked to an example exam question, might be a useful resource;

- teachers have been 'refining' their methods of creating online lessons for home learning ... they are learning to tolerate small 'accidents' ... such as the camera falling over, or a teacher's puppy putting in an appearance ... which most students enjoy;

working against mathematical under-achievement:

- on the first day back for Year 10 students one maths teacher dedicated two hours to **discussion with the students about steps they might take to overcome any recent setbacks to their learning** ... for example they discussed personal goal-setting and ways of overcoming anxiety;
- many maths teachers feel that all **students who have not been able to learn at home (for any reasons beyond their control) should be brought back into school** so that their learning can be re-started and supported by teachers;

how maths teachers have been enhancing their professional development during the past few months:

- some teachers are pleased to have found some **professional support and inspiration by joining Twitter**;
- some teachers have 'finally gotten round to' listening to **podcasts**, taking part in **online conferences and seminars**, and **reading more books, blogs and articles about maths teaching and learning**;

successful aspects of teaching remotely that are likely to influence teachers' future practice:

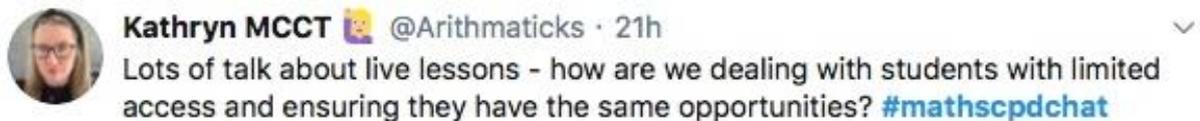
- using 'breakout rooms' on Zoom to group a few students together enables a teacher to **focus support using appropriate teaching approaches**, and provides conditions in which **pupils can learn through unconstrained discussion about their maths with each other and with the teacher**;
- the 'hard-thinking' that teachers have found to be necessary in order to prepare effective video-lessons has helped some teachers **learn more about how to design materials that aid learning**;
- a few maths teachers had been **filming their normal lessons** for some time before the schools closures in March ... students have 'loved having access to them' (for

example for revision) ... this might consequently become a **more usual/widespread practice in maths teaching**;

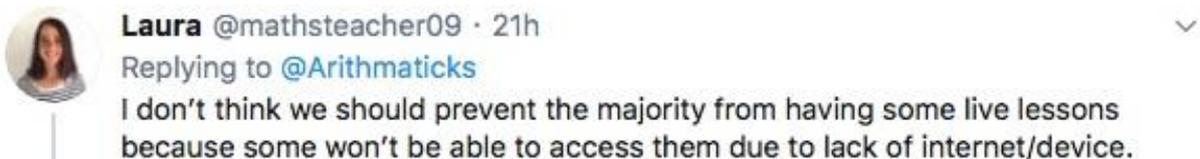
- teaching 'live lessons' online using a chat facility has enabled deep '**maths conversations' with students that have revealed thinking-processes and understandings** ... writing explanations in pupils' online books to which pupils can respond without interruptions **has prompted deep thought about effective teacher-pupil communication**;
- some teachers, partly **as a result of together developing and sharing online lessons, intend to foster permanent open-door policies within their maths departments** ... they hope to develop a departmental atmosphere in which all the maths teachers 'feel comfortable wandering into a colleague's maths lessons to see the learning that's going on, and having colleagues wandering into their own lessons'.

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 ways of trying to provide ALL pupils with equal opportunities for learning. The conversation was generated by this tweet from [Kathryn Darwin](#):



and included these from [Laura](#) and [Miss Ward-Gow](#):



-  **Laura** @mathsteacher09 · 21h ▼
Yes get them into school if possible.
-  **Miss Ward-Gow** @mcwardgow · 21h ▼
Really like the idea 😊 what do we do if they wont come into school? (I'm not expecting you to have all the answers by the way)
-  **Laura** @mathsteacher09 · Jun 17 ▼
Replying to @mathsteacher09 @mcwardgow and @Arithmaticks
Good question. Assuming it's not because of shielding and rather disengagement with education...Regular positive encouragement? Discussion with them on the phone about what their concerns are? Use of other agencies? Invite for a short visit initially? Really depends on the child

these from [MrHawesMaths](#), [Peter Atkinson](#), [Jasmine Etheridge](#), and [DMaths](#):

-  **MrHawesMaths** @HawesMaths · 21h ▼
Replying to @Arithmaticks
Everything we teach is put online (notes vids and work) so if a student is absent they can catch up. Plus it is all catalogued for any catch up over the Summer and new year. #mathscpdchat
-  **Peter Atkinson** @MrA_Maths · 21h ▼
Replying to @Arithmaticks
This is the big struggle. We have pastoral leaders contacting home based on our lesson registers and we provide paper resources where we can, but short of providing every student with broadband and a laptop it's just not possible to achieve equality. Heartbreaking #mathscpdchat
-  **Jasmine Etheridge** @Miss_Etheridge · 17h ▼
Replying to @MrA_Maths and @Arithmaticks
This is very true. As a maths teacher and pastoral lead it is heartbreaking not being able to ensure suitable devices for all. Even students using phones can be really tricky when you are expecting them to be able to read a presentation.
-  **DMaths** @DeeVijayan · 55m ▼
Replying to @Arithmaticks
Ss with limited access will be encouraged to come into school so they can use the computers in school for the lessons

and these from [Vicky Osborne](#), [iPad Learning](#), [GLo](#), and [Miss Olive](#):

-  **Vicky Osborne** @CheerVix · 21h ▼
Replying to @Arithmaticks
I've been thinking really hard on this, we decided to write a handout to 'talk' them through the same worksheets everyone else is doing, with tonnes of examples. It all gets printed and posted home a week in advance so everyone is at the same point #mathscpdchat



iPad Learning @iPad_Learning · 21h

We are in a semi-rural location that doesn't look disadvantaged at all and we have had to provide dozens and dozens with devices and a fair number of students with dongles.



GLo @Gem09Gemma · 21h

Replying to @Arithmaticks

#mathschatcpd we can only do our best. For us that inc sending work packs home and setting the same topics online and in the packs. (Workload and gals)



Miss Olive @missolivemaths · 20h

Replying to @Arithmaticks

We've started doing live lessons and those who attend find it really useful. But I'm really concerned for those who get paper copies each week. They can't all watch the videos but I don't know what the solution is #mathscpdchat

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

Among the links shared were:

[Whiteboard.fi](#) which is a free online whiteboard resource. It enables you to equip each student in a (your) live online class/lesson with their own digital whiteboard. Because you can see all your students' whiteboards in real time, you can follow everything that every student writes and draws on their board. It was shared by [Champs](#)

[Corona Conundrums](#) which is a collection of very short videos in each of which [Chris Smith](#) entertainingly and clearly sets up a different mathematical puzzle. It was shared by [Martyn Yeo](#)

[Maths At Home](#) which is a collection (compiled, and described, by [Colleen Young](#)) of linked-to websites, each of which provides material that pupils might be given to work on at home. It was shared by [Colleen Young](#)

[The problem/weakness in teaching and how to address it](#) which is a blog by Tom Sherrington, in which he discusses issues related to identifying and addressing 'gaps' in learning that individual students may have developed. It was shared by [Director of Maths](#)

[Core Maths Online Festival](#) which is a series of online webinars, designed to appeal to all teachers of maths, regardless of how much experience of Core Maths you have had. It was shared by [Catherine van Saarloos](#)

[Arithmatics](#) which is [Kathryn Darwin](#)'s collection of her own videos created recently by Kathryn for the home learning of own students in Years 9 and 10. It was shared by [Kathryn Darwin](#)

[Mr Adams Maths](#) which is [MrAdamsMaths](#)' collection of his own maths-lesson videos created by him for his own students at St Thomas Aquinas Catholic School and Sixth Form. It was shared by [MrAdamsMaths](#)

[Blutick: A Teacher's Perspective](#) which is an interview with Will Taylor, Middle School Mathematics Coordinator at The Perse School, Cambridge, about how he intends to use Blutick maths resources in a mix of remote and face-to-face teaching. It was shared by [blutickedu](#)

[Six ways you might use our Primary Video Lessons](#) which is an article on the NCETM website. Various interesting and imaginative ways in which the NCETM's primary video lessons might be used are clearly explained. For example, the author shows how they might be used by a group of teachers to support their own professional development. It was shared by [Mary Pardoe](#)

[Calculator Crunch Extras & Giveaway for Teachers](#) which is from where you can download MEI's lesson plans for use of a calculator with Year 6 or Year 7 students. The material includes *Calculator Crunch* tasks. It was shared by [Mary Pardoe](#)

[Calculator Crunch](#) which is where on Twitter you will find the *Calculator Crunch* tasks. It was shared by [Mary Pardoe](#)

[Healthy Mathematical Snacks - for home and classroom use](#) which are short videos from the Association of Teachers of Mathematics (ATM) that are created to support children and their parents when children are away from school. They are designed to enrich the mathematics taught at school by providing (in the whole growing collection of videos) a mixture of tasks, puzzles, challenges and games. It was shared by [Mary Pardoe](#)