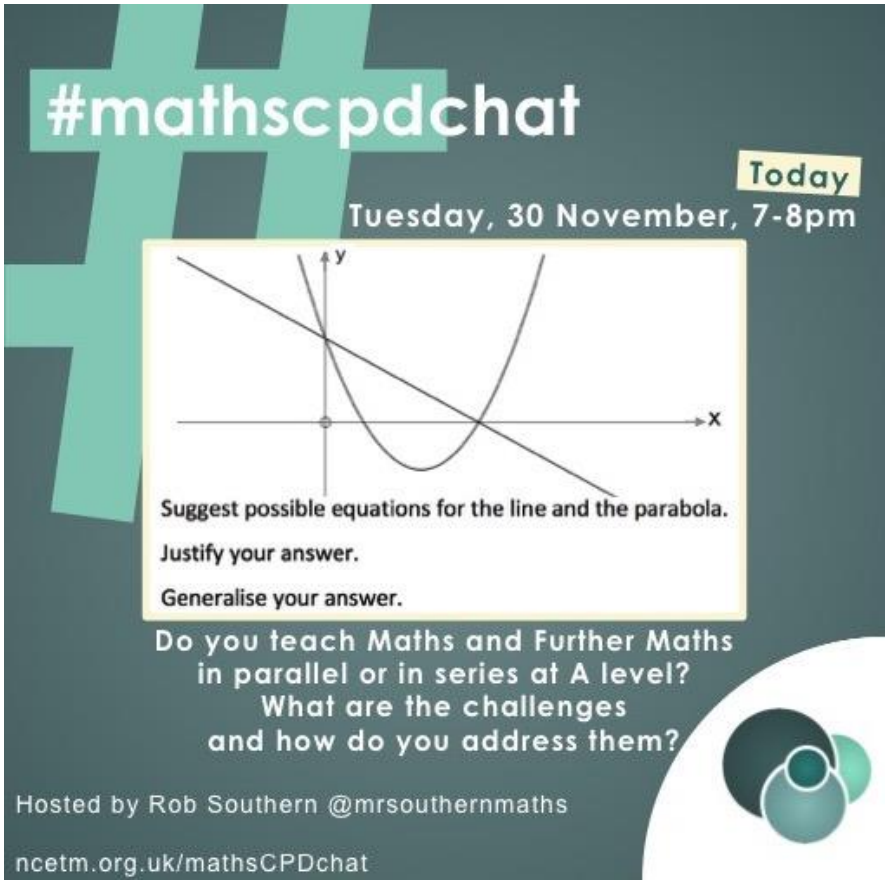
#mathscpdchat 30 November 2021

Do you teach Maths and Further Maths in parallel or in series at A level? What are the challenges and how do you address them?

Hosted by Rob Southern

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



No links were shared during this discussion, but the following AMSP links may be helpful when reading this summary.

AS/A level Mathematics curriculum

AS/A level Further Mathematics curriculum

A reply to the host's first question …

Rob Southern @mrsouthernmaths · 18h

OK, here we go with tonight's **#mathscpdchat**, which is all about A Level Maths and Further Maths.

Q1: Do you teach Maths and Further Maths in parallel or in series and what are your reasons for doing this?

Don't forget the hashtag!

… suggested that some maths teachers who are not presently teaching beyond Year 11 may have been observing the chat:

Heather Scott @MathsladyScott · 17h

Replying to @mrsouthernmaths

#mathscpdchat Hi I don't teach A level, but teaching GCSE to top sets I like to know what's going on at A level so I can prepare my students well. Hence my interest in the chat this evening 😃

Rob's first question (above) generated much discussion, a recurring focus of which was teachers' awareness that the sequencing of topics needs to be planned with great care when students are learning Maths and Further Maths 'in parallel'. For example: …

Peter Williams @MathsImpact · 17h

Replying to @mrsouthernmaths

In parallel, for a few reasons:

1. Timetabling flexibility

2. Option to drop further after year 12

3. Option to pick up AS further in year 13

4. Experience the "nice" bits of further earlier

5. It works well with the right topic order

#mathscpdchat

Sarah Carney @fossavenue · Nov 30

Replying to @MathsImpact and @mrsouthernmaths

The option to do AS further in Y13 is popular with students, we found.

Rob Southern @mrsouthernmaths · 17h

Thanks Peter, great points. Can you elaborate on the "right topic order"? #mathscpdchat

Peter Williams @MathsImpact · 17h

One where you cover the prerequisites in the a level in good time.

It's not easy, but it helps doing decision, because that can be done at any point.

There's often some shuffling around of topics in further to allow the main group time to get to the right place.

#mathscpdchat

RHMaths @MathsRh · 17h

Another good reason for in series

… this prompted some counter-arguments …

Lane James @JamesMaths1 · Nov 30

Replying to @mrsouthernmaths

I do wonder what kind of an experience FM get if they are taught in a separate group away from all the 'ordinary' maths students. Elitism? 🤷‍♂️

Dave Jones @davegjones · Nov 30

and the non-FM students. Do they feel like 'second class citizens'? Do teachers do enough to prevent this?

Rob Southern @mrsouthernmaths · Nov 30

I can see why it might be tempting to adopt the "soft-setting" model, but having experienced both, I personally prefer to have everyone in together.

Rob Southern @mrsouthernmaths · Nov 30

I wondered if this might come up tonight. What are your thoughts? Is the student experience diminished by having Maths and FM students taught completely separately? #mathscpdchat

> **Lane James** @JamesMaths1 · Nov 30
>
> Replying to @mrsouthernmaths
>
> I do wonder what kind of an experience FM get if they are taught in a separate group away from all the 'ordinary' maths students. Elitism? 🤷‍♂️

RHMaths @MathsRh · Nov 30

Replying to @mrsouthernmaths

Very good point. Maybe. Not a major issue that I've noticed. Can be helpful for STEP and other top uni prep though!

Rachel Renshaw @RachelRenshaw3 · Nov 30

Replying to @JamesMaths1 and @mrsouthernmaths

The benefit of teaching them separately is that you can go more speedily through the A level and then have more time to devote to A2 further which is very content heavy in MEI

MrsD @MrsDMaths · Nov 30

Replying to @mrsouthernmaths

We teach them all together, I think it is of benefit to all students, the FM ones get their time in FM lessons but rest of the time are mixed with students who only do maths #mathscpdchat

… and challenges that were met when moving from teaching Maths and Further Maths in series to teaching them in parallel:

Rachel Renshaw @RachelRenshaw3 · 16h

Until last year successfully taught AS, AS FM, then A2 followed by A2FM. Now in parallel due to smaller numbers/staffing issues. Prerequisites of FM is heavily influencing sequencing of AS. Not sure yet how to make it work into Year 13.

Rob Southern @mrsouthernmaths · 16h

Which FM modules do you do?

Rachel Renshaw @RachelRenshaw3 · 16h

It's starting the Year 13 further pure before they have covered many of the topics in A2.

Rachel Renshaw @RachelRenshaw3 · 16h

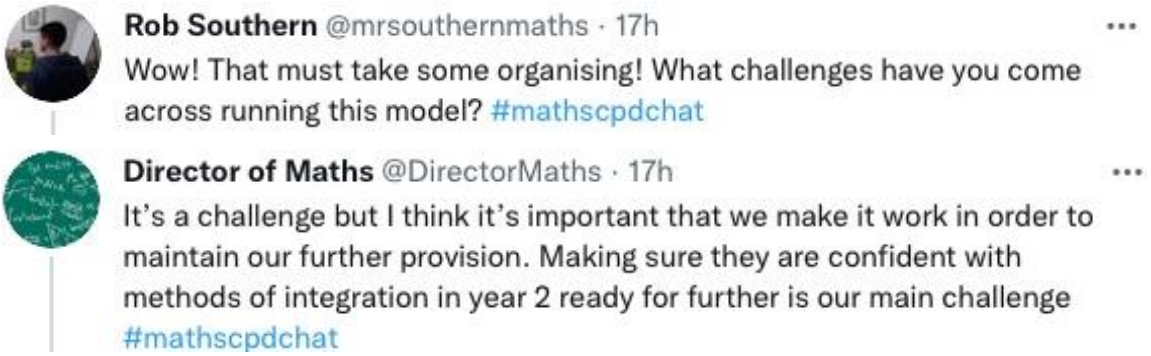
@mei give a suggested scheme. I'd be keen to connect with any schools that do MEI maths and run separately. I've just taken on the Ks5 maths lead at the same time school have changed the groupings.

Teaching-and-learning-order challenges when teaching Maths and Further Maths in parallel were mentioned again in the context of split-school teaching:

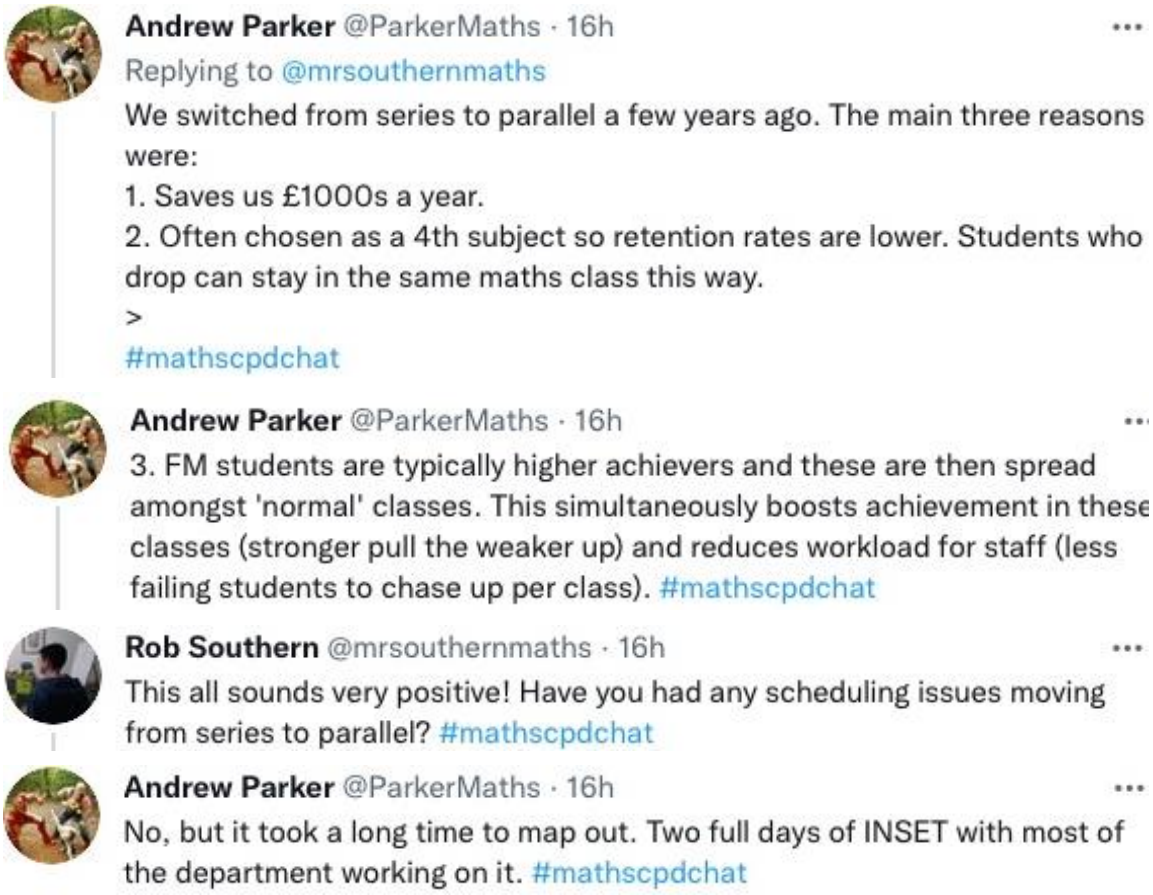
Director of Maths @DirectorMaths · 17h

Replying to @mrsouthernmaths

We teach in parallel because we share students across three schools. It means most are taught maths in one school and further in another #mathscpdchat



Teachers discussed reasons for moving from teaching Maths and Further Maths in series to teaching them in parallel …



… and managing the learning/teaching of students being taught Maths and Further Maths in parallel, bearing in mind that some of them, having started on Further Maths in Year 12, may not necessarily carry on with it in Year 13:

Lane James @JamesMaths1 · 17h

Replying to @mrsouthernmaths

Parallel for us too. Timetabling is one of the reasons for this, along with maturity. We get a lot who start with FM as a fourth subject and then quickly realise it isn't for them. What happens to those if in series? #mathscpdchat

RHMaths @MathsRh · 17h

If in series they can continue to focus on the a level into year 13 and get a cracking grade #mathscpdchat

Rob Southern @mrsouthernmaths · 17h

OK, you've answered my question from before. Do you find that all the students who start in the FM class in Year 12 want to carry on into Year 13? What are their options if they do not wish to carry on? #mathscpdchat

MrsD @MrsDMaths · 17h

Replying to @mrsouthernmaths

We taught them in parallel. We felt a lot of students gain maturity on yr13 and so are more likely to get best grade then. We also felt FM compliments maths so well that it leads to deeper understanding #mathscpdchat

Rob Southern @mrsouthernmaths · 17h

Did you find that there were challenges to teaching it in parallel? #mathscpdchat

MrsD @MrsDMaths · 17h

There are some scheduling challenges with topics but found the @OCR_Maths FM course content was well designed to teach like that. Sometimes maths teachers missed introducing things to the FM students so we tried to avoid minimise that #mathscpdchat

Rob Southern @mrsouthernmaths · 17h

This sounds great - did you find you had to "pre-teach" much content to the FM students so that they could access FM content? #mathscpdchat

MrsD @MrsDMaths · 17h

Not very much at all. We chose discrete and mechanics which meant we had some independent topics to cover when needed. Little bit of calculus at end of yr12 but not much at all #mathscpdchat

Rob Southern @mrsouthernmaths · 17h

Teaching Decision certainly makes parallel delivery a bit easier. We did this at my previous school. My new school does FM1 and FP1 in parallel, which is a bit trickier. Did the students enjoy the combination of mechanics and discrete? #mathscpdchat

MrsD @MrsDMaths · 17h

They did actually. I felt strongly that I wanted FM to give them a flavour of as much different maths as I could. We tended to have a mix of students going on to engineering, computer science and maths predominantly so it felt nice to have the discrete in there. #mathscpdchat

Another related thread was generated by Mrs D's tweet above:

MrsD @MrsDMaths · 17h

There are some scheduling challenges with topics but found the @OCR_Maths FM course content was well designed to teach like that. Sometimes maths teachers missed introducing things to the FM students so we tried to avoid minimise that #mathscpdchat

Dave Jones @davegjones · Nov 30

Can I ask about where the applied content appears in your schemes? My guess is that it is dotted all over. I find AS further mechanics is more challenging then A2 maths mechanics.

Rob Southern @mrsouthernmaths · Nov 30

Personally I am in favour of interleaving the applied content with the pure content. I think the new A level has given us the opportunity to develop the links between different areas of mathematics. What does your scheme look like? #mathscpdchat

Dave Jones @davegjones · Nov 30

Replying to @mrsouthernmaths @MrsDMaths and @OCR_Maths

In first year FM we do some of the stats early but the mechanics is after Christmas. I think the @MEIMaths AS FM mech content is really challenging for first year students. #mathscpdchat

Rob Southern @mrsouthernmaths · Nov 30

Do you find it is dependant on Year 2 Mechanics content? Would you ever consider teaching AS content in Year 13? #mathscpdchat

Dave Jones @davegjones · Nov 30

We have discussed teaching the A2 maths mech content to AS FM groups and then they learn the AS FM mech content in the second year combined class. This prevents student being ready for an AS exam in FM at the end of first year but we are okay with that.

Rob Southern @mrsouthernmaths · Nov 30

We did a similar thing in my previous school. We did some AS Further Mechanics content in Year 2 because it required A Level knowledge and no students were intending to enter AS anyway. #mathscpdchat

Dave Jones @davegjones · Nov 30

Replying to @mrsouthernmaths @MrsDMaths and 2 others

It doesn't seem to be an issue for stats, only mechanics. I love @MEIMaths but I think this is a pain.

MrsD @MrsDMaths · Nov 30

We needed to coteach AS in both maths and FM classes so wasn't an option but I would love to design a SOW that just covered the content on the order I liked best.

Rob Southern @mrsouthernmaths · Nov 30

Me too. #mathscpdchat

There was another reply to Rob's question above:

Rob Southern @mrsouthernmaths · Nov 30

Personally I am in favour of interleaving the applied content with the pure content. I think the new A level has given us the opportunity to develop the links between different areas of mathematics. What does your scheme look like? #mathscpdchat

MrsD @MrsDMaths · Nov 30

Replying to @mrsouthernmaths @davegjones and @OCR_Maths

Yes, it is spread through. We tried to interleave and connect topics across pure and applied. #mathscpdchat

… and another reply to Mrs D's tweet:

MrsD @MrsDMaths · 17h

There are some scheduling challenges with topics but found the @OCR_Maths FM course content was well designed to teach like that. Sometimes maths teachers missed introducing things to the FM students so we tried to avoid minimise that #mathscpdchat

OCR Maths @OCR_Maths · Nov 30

Replying to @MrsDMaths and @mrsouthernmaths

That's good to hear! :) It was a definite intention during development to allow that as much as possible. #mathscpdchat

A different thread was also generated by this tweet from Lane James:

Lane James @JamesMaths1 · 17h

Replying to @mrsouthernmaths

Parallel for us too. Timetabling is one of the reasons for this, along with maturity. We get a lot who start with FM as a fourth subject and then quickly realise it isn't for them. What happens to those if in series? #mathscpdchat

Rob Southern @mrsouthernmaths · Nov 30

Replying to @JamesMaths1

This is a good point! Would you still choose to teach in parallel if the timetabling constraints were not there? #mathscpdchat

Lane James @JamesMaths1 · Nov 30

We get a number who pick up AS FM in Y13 (or who only complete the AS course in Y12) so this is another motivator for us. We struggle to schedule the content in Y13 FM - try to fill in with applied content until the necessary trig and calculus is covered in AL. #mathscpdchat

Rob Southern @mrsouthernmaths · Nov 30

I think the trig and calculus is definitely something you have to front-load in Year 13 if you're going to teach in parallel. Stand by for Q3! #mathscpdchat

There was another conversation about scheduling challenges when teaching Maths and Further Maths in parallel …

S Holland @HollandMaths · 17h

Replying to @mrsouthernmaths

We teach in parallel, mainly because of staffing and timetable constraints. Works for the main part but I am finding it a bit challenging with Y13 FM (my first year teaching Y13FM).

Rob Southern @mrsouthernmaths · 17h

Could you elaborate on the bits you have found challenging? #mathscpdchat

S Holland @HollandMaths · 17h

For example, I am currently teaching further calculus, but integration is yet to be covered in Y13 maths. I am finding I need to cover certain aspects of integration so they can access the FM textbook exercises. #mathscpdchat

Rob Southern @mrsouthernmaths · 17h

That definitely sounds like a challenge. Is this something the Maths teachers are aware of? Presumably they will get to the point where they are teaching integration and some students will already have covered it with you? #mathscpdchat

S Holland @HollandMaths · Nov 30

Replying to @HollandMaths and @mrsouthernmaths

No I don't think it is, there are only 2 of us currently teaching y13 fm. We are a large school with a number of A level teachers but this is not something I myself had thought about until this year. Perhaps something to consider for future teaching. #mathscpdchat

Rob Southern @mrsouthernmaths · Nov 30

We're all always learning! The scheduling at my current school could certainly be improved! #mathscpdchat

… and a comment about addressing scheduling challenges …

Santiago Hardacre @Fizzbuck · 17h

Replying to @mrsouthernmaths

We teach in parallel, @OCR have made a prerequisite material document for Y13 FM content from A Level maths so we teach that in the summer term to the further maths lot and then they go into more depth when they cover it in A Level

Rob Southern @mrsouthernmaths · 16h

This is interesting. So they have had a bit of exposure but there is still something for them to get into in their regular Maths class? Sounds good! #mathscpdchat

… and more reasons for choosing to teach in parallel:

Nicole Cozens (she/her) @nicole_cozens · 15h

Replying to @mrsouthernmaths

I've only ever taught in parallel. I think it enables you to show further as the rich subject, rather than just hammering through the full a level first. You can pique their interest with all the nerdiness with complex numbers etc. #mathscpdchat

Nicole Cozens (she/her) @nicole_cozens · 15h

Replying to @mrsouthernmaths

Also parallel enables students to drop it after AS. We enrolled students on to the AS and they needed good grades to progress to the full A Level. Means you need to hammer the calculus at the start of y13 so the furthers can start all their integration goodness #mathscpdchat

Some people gave reasons for preferring to teach Maths and Further Maths in series …

RHMaths @MathsRh · 17h

Replying to @mrsouthernmaths

#mathscpdchat we teach in series for the added benefit of providing extra revision time for the A level

RHMaths @MathsRh · Nov 30

@mrsouthernmaths I think in series means the other classes with just a level students go at a more suitable pace #mathscpdchat

Dave Jones @davegjones · Nov 30

Interesting idea, kind of like a soft 'setting' of classes. We used to do this a teachers found that classes lacked spark and drive on occasion. Have you found this too or are they more confident out of the long shadows of the further students? #mathscpdchat

RHMaths @MathsRh · Nov 30

You've nailed it. I don't find my class lack spark at all. I think they are spurred by the slightly more level playing field! However it's not to say the FM students are always better than the non FM. Certainly not always the case!

Mr S Maths @MrSMaths11 · 14h

Replying to @mrsouthernmaths

Series, pretty much. Maths (plus a bit of decision) in year 12, FM in year 13. Means that very strong students could sit maths at the end of year 12, and anyone who drops hasn't 'wasted' time on content they won't be examined on. #mathscpdchat

Jonny Sherwood @JonnySherwood10 · 15h

Replying to @mrsouthernmaths and @Advanced_Maths

We teach series. A-Level in year 12, FM in year 13. Second half of year 12 is hard but year 13 is good. Students can drop to normal maths class at any point if it's too much (eg at end of year 12). 48 students started year 12, down to 43 in year 13. 80 AL maths kids.

Dr Jenny Argyle @madaboutmaths · 15h

Replying to @mrsouthernmaths

A level year 12 and further in 13 - 3 mixed ability FM classes that sit both exams in year 13. Parallel poor fit as calculus late in year 2 text. Much better experience for student and allows them to develop over time. Gives scope for extra applied options at end of Core Pure.

Mariam Rizvi @mrizvi27 · 14h

Replying to @mrsouthernmaths and @AbdallahWahishi

Series, students need to prove they have the skills to be able to continue to further maths, the ones who don't get A/A* in normal maths after one year don't continue to further and we create a dropout group who master straight maths and pretty much all get A*! #mathscpdchat

… but some people mentioned where they have found support for teaching in parallel …

Matt Man @mr_man_maths · 16h

Replying to @mrsouthernmaths

Apologies that I'm late!
Ideally I would like to do Maths and Further Maths in series but timetabling issues meant that it is done in parallel.
Currently I have one student doing Further Maths in Year 12 so it can't be done in house #mathscpdchat

Matt Man @mr_man_maths · 16h

Instead the student is using the wonderful @Advanced_Maths @Integral_Maths Further Maths resources. I do a mentoring session with the student once every fortnight #mathscpdchat

… and at least one teacher began to have some doubts:

Becca @Red_Maths · 17h

Replying to @mrsouthernmaths

We teach in series. All these "parallel" responses are making me think! #mathscpdchat

Rob Southern @mrsouthernmaths · 16h

What sort of things are you thinking about? #mathscpdchat

Becca @Red_Maths · 16h

Why we're so different to others. A similar thing came up at an AMSP KS5 network meeting recently. I didn't design our SoW so I wonder how much thought went into the decision-making… #mathscpdchat

This was a short conversation about the new A level:

MrsD @MrsDMaths · Nov 30

Replying to @davegjones @mrsouthernmaths and 2 others

I am also a huge fan of the new a level, the linking of pure and applied and the opportunity to interleave the content #mathscpdchat

Rob Southern @mrsouthernmaths · Nov 30

How much do you think this is happening in reality? Do you get any sense of this through your role? #mathscpdchat

MrsD @MrsDMaths · Nov 30

I think the desire is there but it takes time. I am also a fan of the linear aspect because it means less arbitrary splits between topics but it needs time teaching the course & the last two years have been a disaster for that #mathscpdchat

Rob Southern @mrsouthernmaths · Nov 30

Definitely agree with this. #mathscpdchat

Most of the replies to Rob's second question …

Rob Southern @mrsouthernmaths · Nov 30

OK, the discussions are tending towards this anyway, so I'll fire out the next question:

Q2: Which Further Maths application modules do you do and why?

(Might be worth mentioning which exam board you do as well)

#mathscpdchat

… were single tweets, except for the following short conversations … this …

Mr Pethick @ian_pethick · Nov 30

Replying to @mrsouthernmaths

Edexcel FS1 FS2 this year but thinking about going with FS1 FM1 in the future

Rob Southern @mrsouthernmaths · Nov 30

Wow! Your students will be a fairly big chunk of the FS1/FS2 cohort nationally. How are you finding it? Why are you thinking about switching? #mathscpdchat

Mr Pethick @ian_pethick · Nov 30

We went with FS1 FS2 because we have had students in last couple of year interested in stats (and econometrics/actuarial type things) which may be us influencing them as I did PPE and a colleague did MORSE but at the same time we also have stopped offering A-level economics.

Mr Pethick @ian_pethick · Nov 30

We are also short of physicists at our school and are planning on loaning a part time further maths colleague to the science department so as long as it is him delivering the FM1 I am happy to switch over to compliment the physics content

… this …

Emma Cooke @EmmaCookeBooks · Nov 30

Replying to @mrsouthernmaths

MEI and since the new spec we have done a different combination every year! We usually have to teach year 12 and 13 together for one module so that affects things.

Rob Southern @mrsouthernmaths · Nov 30

OK - is that a timetabling/staffing issue? Sounds like you have to be very flexible. Do you have several teachers who can/do teach FM and the applied modules? #mathscpdchat

Emma Cooke @EmmaCookeBooks · Nov 30

We have three FM teachers. Yeah timetabling and staffing dictate what we do.

… this …

S Holland @HollandMaths · Nov 30

Replying to @mrsouthernmaths

MEI, Stats minor, Mech minor, Numerical methods. Stats and Mech for a broad range and have historically taught S2 and M2. Numerical methods as again have taught it before new spec and decided it would be accessible #mathscpdchat

Dave Jones @davegjones · Nov 30

@mei too, Stats minor or major, Mechanics minor or major, extra pure. Similar reasons to above. In my previous school we did @PearsonEdexcel and did the two decision options. Again due to experience but also for scheduling.

… and this:

Gurpreet Dhillow @GupyD · Nov 30

Replying to @mrsouthernmaths

Edexcel fp1 and fm1. Incidentally we did aqa before with mech and discrete

Gurpreet Dhillow @GupyD · Nov 30

We teach maths and FM such that yr 12 is mostly maths and 13 mostly FM. So roughly finish a level maths in Oct of yr13.

Rob Southern @mrsouthernmaths · Nov 30

So presumably your FM students are a separate class?

Gurpreet Dhillow @GupyD · Nov 30

Yes, which means we can teach the two courses in any order. I've trialled many variations!

The 'single' replies included …

'Edexcel, Decision1 and Stats1'

'D1 and D2 options with Edexcel. Mainly to avoid pre-teaching stats/mech'

'Edexcel – pure and mechanics'

'We do Stats and Mechanics now'

'Edexcel we offer FS1 FM1 FP1 and FD1. I'd love to do FP2 as well'

'OCR further mechanics and further stats'

… and …

Dr Jenny Argyle @madaboutmaths · Nov 30

Replying to @mrsouthernmaths

Last year edexcel fs1 fm1 delivered to all by Christmas - fs2, d1 & fm2 post Christmas in year 13! Mix of self study with some teacher directed time too.

Peter Williams @MathsImpact · Nov 30

Replying to @mrsouthernmaths

Edexcel (because of the greater flexibility).

Decision 1 and Stats 1

Decision because it's the best one, obviously.

#mathscpdchat

Mark Greenaway @suffolkmaths · Nov 30

Replying to @mrsouthernmaths

Edexcel fstats1 and fmech1 because they are provide a good foundation for all mathematicians

Matt Man @mr_man_maths · Nov 30

Replying to @mrsouthernmaths

Next year, if Further Maths does run in house, I'm likely to do D1 as some are planning to do Computer Science as another subject, and perhaps FP1 as lots are not fans of more Statistics, and I'm less of a Mechanics expert! #mathscpdchat

Mr S Maths @MrSMaths11 · Nov 30

Replying to @mrsouthernmaths

D1 and FM1. D1 because (particularly weaker) students tend to find it more accessible, and FM1 because we have lots that go on to engineering/physics.

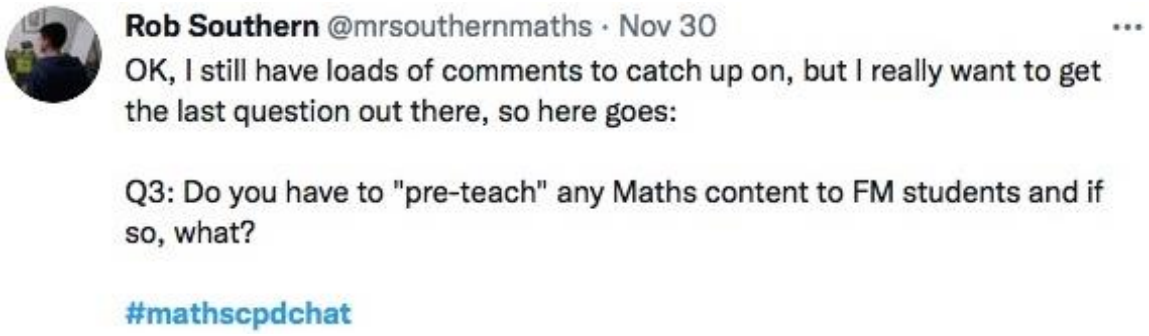
MrsD @MrsDMaths · Nov 30

Replying to @mrsouthernmaths

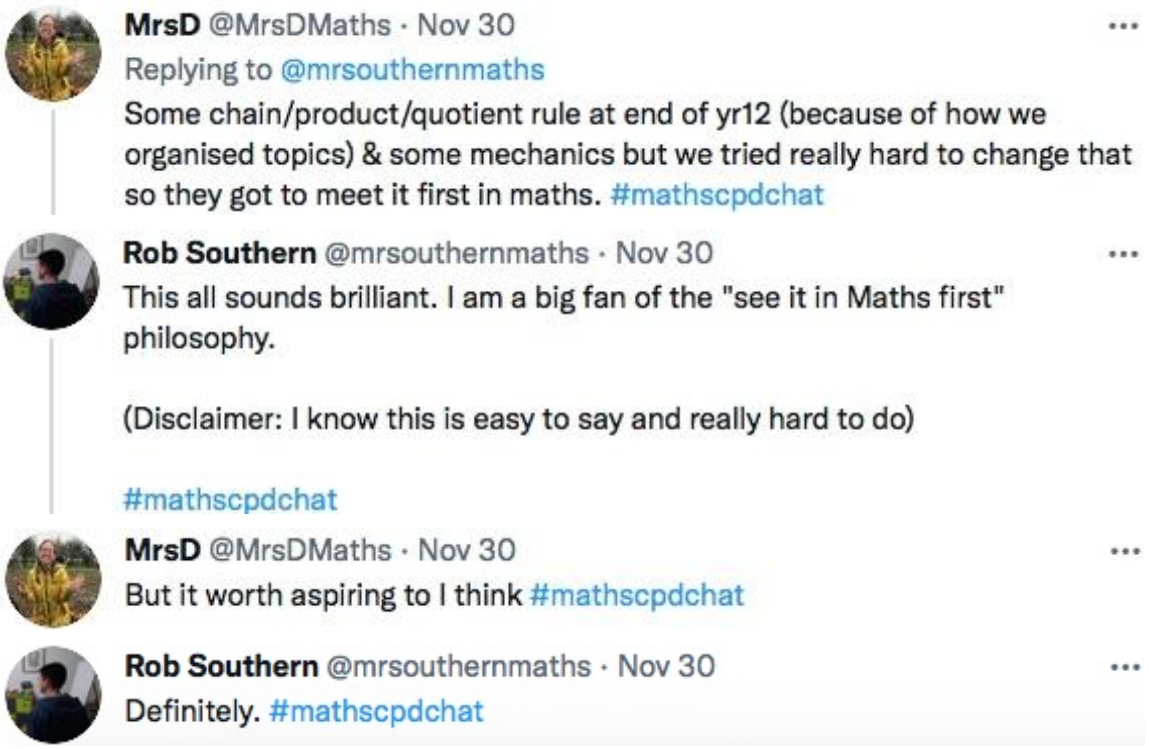
OCR discrete and mechanics. I love discrete and was very sure it was going in there, my school has a lot of engineers so mechanics made sense to do. Discrete also makes parallel teaching easier which was a way to help convince sceptics rather than a reason #mathscpdchat

The screenshots below, of conversations and some 'single' tweets posted during the chat, show replies prompted by Rob's last question. Teachers mentioned some mathematics that they decided had to be re-taught to Further Maths students ('radians' was mentioned often). They also discussed issues related to the order in which they address various topics, and the nature of current modules. **Click on any of the following screenshots-of-a-tweet to go to that actual tweet on Twitter.**

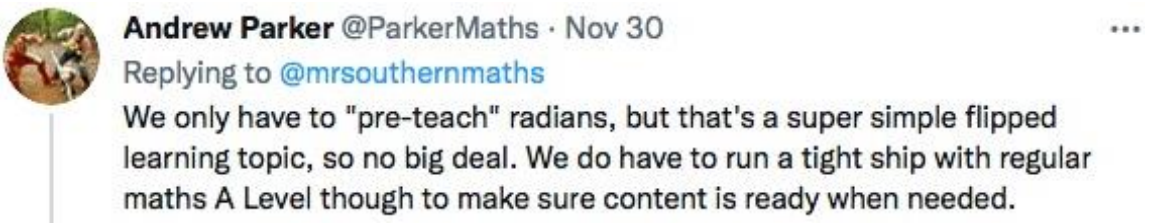
These conversations were generated by this question from Rob Southern:



and included this conversation between Mrs D and Rob Southern:



this from Andrew Parker and Rob Southern:



Rob Southern @mrsouthernmaths · Nov 30
Which FM application modules do you do and was your decision influenced by the desire to run in parallel? #mathscpdchat

Andrew Parker @ParkerMaths · Nov 30
We do Mechanics and Stats now. We wanted to give students a broad experience.

We used to run Discrete, but there were so few entries on AQA (we were a significant proportion of all entries) we were worried about distorted grade boundaries. #mathscpdchat

this (generated by a tweet in the previous conversation) from Rob Southern and Sheena:

Rob Southern @mrsouthernmaths · Nov 30
Which FM application modules do you do and was your decision influenced by the desire to run in parallel? #mathscpdchat

Sheena @Sheena2907 · Nov 30
Replying to @mrsouthernmaths and @ParkerMaths
Depends on the students, what they need and whether they do physics

Rob Southern @mrsouthernmaths · Nov 30
How many FM classes do you have?

Sheena @Sheena2907 · Nov 30
Year 12 we have 4 students, year 13 we have 3 which are the highest numbers in a while...

Rob Southern @mrsouthernmaths · Nov 30
So they decide between them which modules they want to do? It's good that you have the flexibility to offer that.

Sheena @Sheena2907 · Nov 30
I am heavily involved in thst decision and they all have to do the same modules so it's collective but does change year on year

this conversation from Tayyub Majeed , Rob Southern and Matt Man:

Tayyub Majeed @tm_maths · Nov 30
Replying to @mrsouthernmaths
Vectors is definitely up there from top of my head.

This is why I like D1, you can start off with that with no prerequisites.

Rob Southern @mrsouthernmaths · Nov 30

Yes I have to pre-teach a bit of vectors to be able to do momentum and impulse in vector form. Started scalar product with my Year 12s today which was interesting as they haven't got to vectors in Maths yet...
#mathscpdchat

Matt Man @mr_man_maths · Nov 30

Replying to @tm_maths and @mrsouthernmaths

I totally agree here @tm_maths
In some ways, it's great that D1 is an option module though I do miss the somewhat flexibility when we did our A Levels!
Though I can see from the university's points of view why everyone really should have a common core of knowledge **#mathscpdchat**

Tayyub Majeed @tm_maths · Nov 30

Replying to @mr_man_maths and @mrsouthernmaths

But isn't that what core pure is for? The flexibility in the modules to me depends on what you want to do at university, e.g. FM1 for engineering, D1 for computer science

Mechanics

Quantities and units in mechanics

Kinematics

Forces and Newton's laws

Moments

Matt Man @mr_man_maths · Nov 30

Replying to @tm_maths and @mrsouthernmaths

True - though some might just want to just specialise in Pure Mathematics which is what my Year 12 student wants to do. **#mathscpdchat**

Matt Man @mr_man_maths · Nov 30

FP2 - now pretty much specialising in group theory, number theory. It really reminds me of first year undergrad at university. I certainly didn't come across them when I did Further Maths at A Level - and I did all the Further Pure modules back then! #mathscpdchat

Further Pure Mathematics 2

Matt Man @mr_man_maths · Nov 30

Replying to @tm_maths and @mrsouthernmaths

I'm assuming - though I am making assumptions - that now that there is a Core content of Pure, Mechanics and Statistics - that universities don't have to keep repeating that part for A Level Mathematics **#mathscpdchat**

Matt Man @mr_man_maths · Nov 30

Replying to @tm_maths and @mrsouthernmaths

Further Maths when I did A Levels was definitely more optional - though I remember we still had in respects had to do M1, S1, D1, FP1, but others became more optional. #mathscpdchat

M1 Mechanics 1

Mathematical models in mechanics; vectors in mechanics; kinematics of a particle moving in a straight line; dynamics of a particle moving in a straight line or plane; statics of a particle; moments.
Kinematics of a particle moving in a straight line or plane; centres of mass; work and energy; collisions; statics of rigid bodies.

S1 Statistics 1

Mathematical models in probability and statistics; representation and summary of data; probability; correlation and regression; discrete random variables; discrete distributions; the Normal distribution.
The Binomial and Poisson distributions; continuous random variables; continuous distributions; samples; hypothesis tests.

D1 Decision Mathematics 1

Algorithms; algorithms on graphs; the route inspection problem; critical path analysis; linear programming; matchings.

FP1 Further Pure Mathematics 1

Series; complex numbers; numerical solution of equations; Coordinate systems, matrix algebra, proof.

Matt Man @mr_man_maths · Nov 30

Replying to @tm_maths and @mrsouthernmaths

Nowadays, it's Core Pure - effectively parts (or majority) of the old FP2, FP3 (or even FP4 if it's AQA). FP1 from Edexcel fills in the gaps of the old Further Maths. #mathscpdchat

OLD FP2 Further Pure Mathematics 2

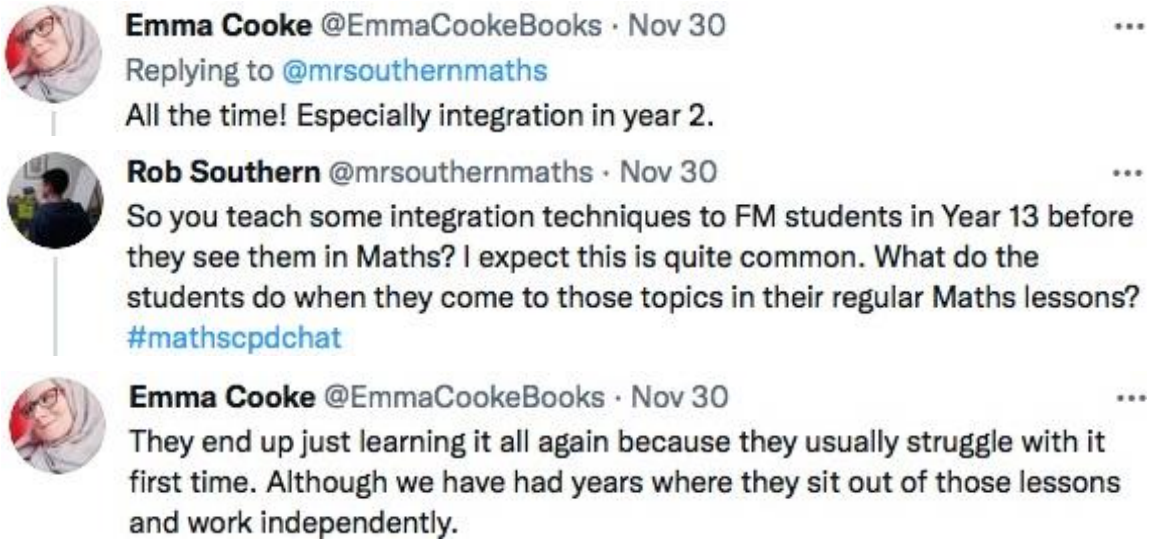
Inequalities; series, first order differential equations; second order differential equations; further complex numbers, Maclaurin and Taylor series.

OLD FP3 Further Pure Mathematics 3

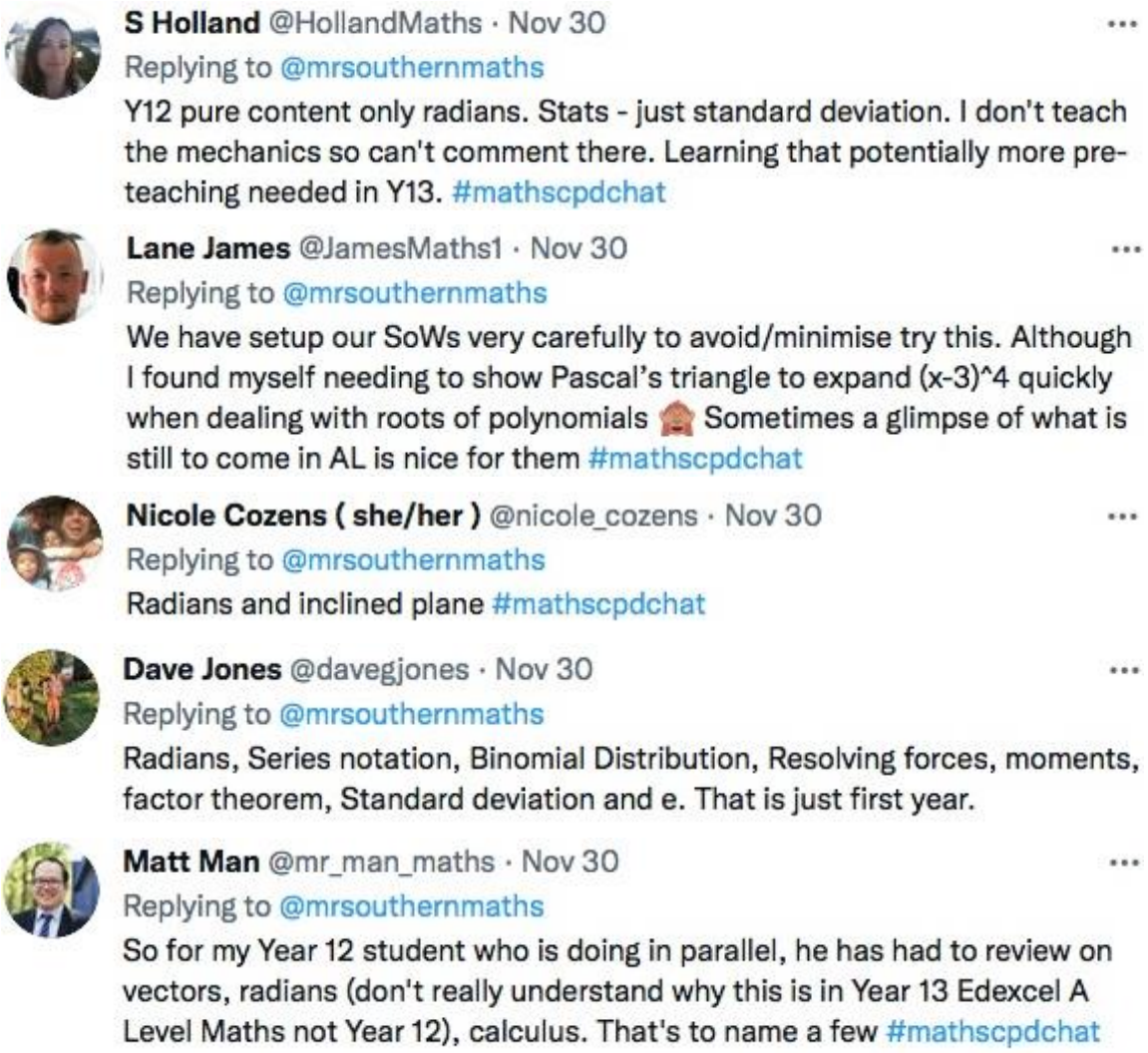
Further matrix algebra; vectors, hyperbolic functions; differentiation; integration, further coordinate systems

Further Pure Mathematics 1

this conversation between Emma Cooke and Rob Southern:



and these 'single' tweet-replies from Sally Holland, Lane James, Nicole Cozens, Dave Jones and Matt Man:



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