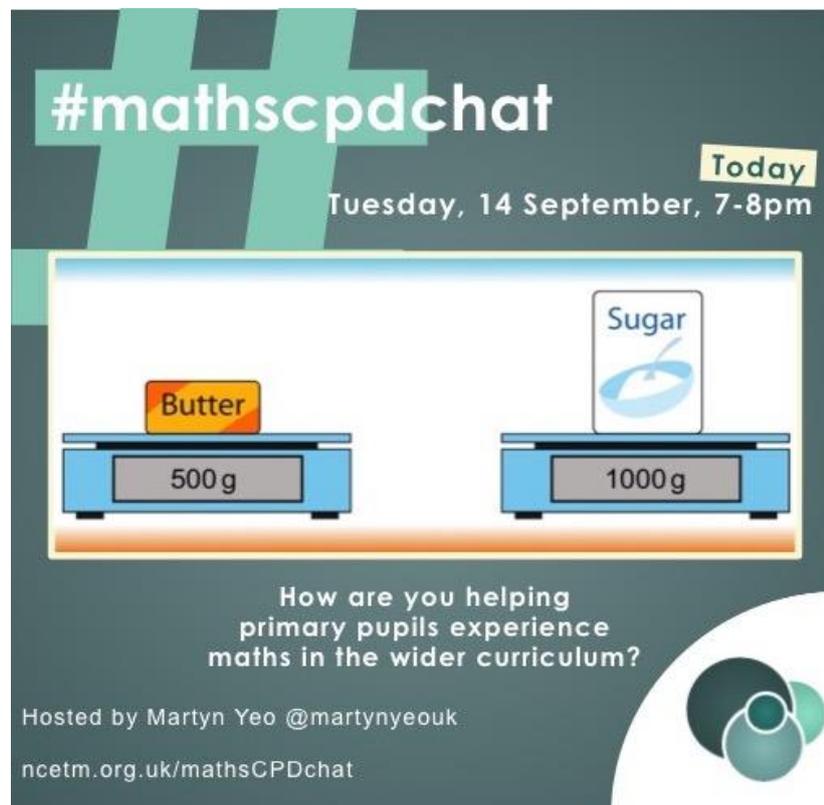


## #mathscpdchat 14 September 2021

How are you helping primary pupils experience maths in the wider curriculum?

Hosted by [Martyn Yeo](#)

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



The graphic features a large green hashtag #mathscpdchat on a dark teal background. To the right, it says 'Today Tuesday, 14 September, 7-8pm'. Below this is an illustration of two kitchen scales. The left scale has a block of butter on it and shows '500g' on the display. The right scale has a packet of sugar on it and shows '1000g' on the display. At the bottom, the text reads: 'How are you helping primary pupils experience maths in the wider curriculum? Hosted by Martyn Yeo @martynyeouk nctem.org.uk/mathscpdchat'. A small version of the NCETM logo is in the bottom right corner.

Among the links shared during the discussion were:

[How Cross-Curricular Learning Can Bring Maths to Life for Primary School Pupils](#) which is a Third Space Learning blog by Kerry Dalton (May, 2020). The author gives reasons 'why 'Cross-Curricular Learning' is important in primary maths' and provides examples of some mathematics that KS2 pupils might learn while exploring themes such as royal weddings and RSPB Big Garden Birdwatch projects. It was shared by [Martyn Yeo](#)

[Some ideas for active maths through PE](#) which is an illustrated blog by Kevin Peake. The author's suggested activities include associating multiplication facts with actions performed on

agility ladders, and playing a version of noughts and crosses using calculation and result cones arranged in a square grid. It was shared by [Martyn Yeo](#)

[Dance Squared](#) which is a video from the National Film Board of Canada made in 1961 by René Jodoin. Rectangles, squares and triangles combine, split, re-combine, and move about forming patterns, always in time to some very 'catchy' music! It was shared by [Martyn Yeo](#)

[NCETM Primary Magazine Issue 34](#) which includes an article about paintings by the French artist Henri Matisse. It was shared by [Martyn Yeo](#)

[How to Draw a Room Using One Point Perspective](#) which is a set of illustrated, step-by-step (10 steps) instructions that are intended to enable students to create a drawing of the interior of a room using a vanishing point. It was shared by [Atul Rana](#)

[Guitar Mathematics](#) which is a 'lesson' (an article) on the Passy World of Mathematics website. It 'looks at the mathematics associated with the guitar in rock music' and includes sections with titles such as 'Pythagoras and Guitar Fret Spacings' and 'Vibration of Guitar Strings'. It was shared by [Atul Rana](#)

[Free Functional Skills and Skills for Life Resources](#) which is 'the home of free adult literacy, numeracy and Functional Skills resources'. It includes such resources as 'two PowerPoints that cover the properties of 2D and 3D shapes – faces, edges, vertices and line symmetry'. The 'second PPT can be printed off and used as a workbook'. It was shared by [Catherine Edwards](#)

[Graph dancing math](#) which is a YouTube video in which the red arms of an otherwise blue 'cartoon person' (which is drawn on a square grid without any marked axes) change their shapes so that, one after another, together they form the 'typical' shapes of graphs-drawn-on-Cartesian-grids of some common relationships between  $x$  and  $y$ , such as  $y = \cos x$  and  $y = x^3$ . It was shared by [Catherine Edwards](#)

[Desmos activities for Geography](#) which is a padlet created by [Catherine van Saarloos](#), consisting of links to very many varied resources, categorised under thirteen headings such as 'Using Desmos', 'General screens to add to activities', 'Guess who (polygraph) games', 'Representing data', 'Modelling', and so on... The resources themselves are imaginatively varied, including such delights as 'Alligator Investigation' and 'Starbucks locations'! It was shared by [Mary Pardoe](#)

[Dancing with Maths](#) which is an illustrated NRICH article by Chris Budd. The content of the article is relevant to the maths teaching and learning of pupils aged 7 to 16. It is about dance moves that correspond to transformations (symmetries) of the square. For example, reflection in

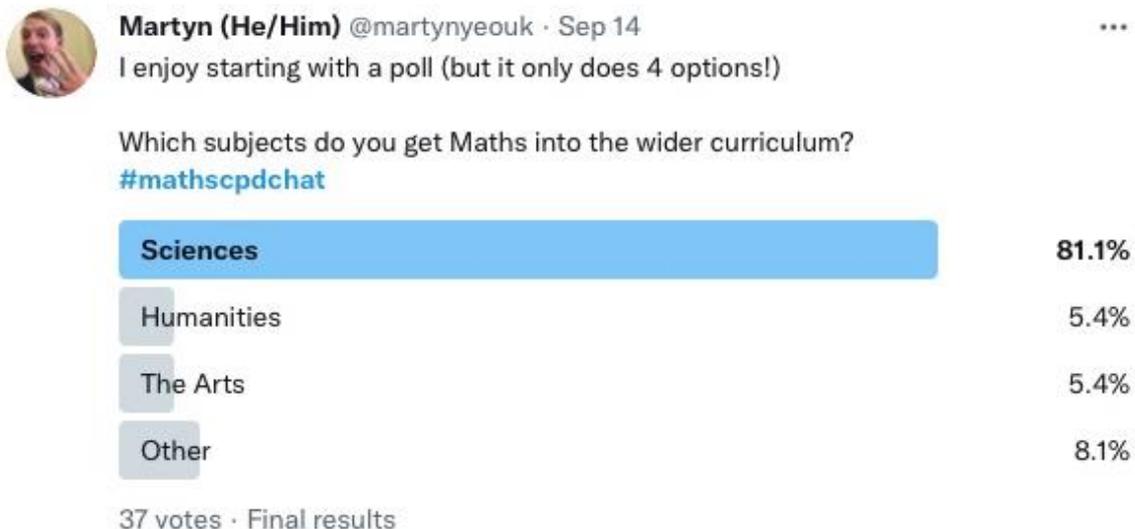
the 'leading' diagonal in which two of four 'square dancers' swap places is the 'dos-e-dos' or 'inner-twiddle' dance move! It was shared by [Mary Pardoe](#)

[The Magic Flute](#) which is a page of Marcus du Sautoy's website relating to performances at the Royal Opera House in which Marcus explored, with singers and the audience, the mathematical and philosophical roots of the symbolism and ideas within Mozart's *Die Zauberflöte*. It was shared by [Mary Pardoe](#)

[#mathsCPDchat summary 29 June 2021](#) which is the summary of a Twitter-chat hosted by [Martyn Yeo](#), in which the questions discussed were 'What material (such as guidance on websites, books, schemes and research reports) is proving to be most helpful in your primary-phase maths teaching? How is it helping?'. It was shared by [Mary Pardoe](#)

The screenshots below, of chains of tweets posted during the chat, show parts of three conversations about looking out for opportunities for pupils to do (work on) some mathematics in school subjects other than maths itself. **Click on any of these screenshots-of-a-tweet to go to that actual tweet on Twitter.**

The conversations were generated by this tweet from [Martyn Yeo](#):



**Martyn (He/Him)** @martynyeouk · Sep 14

I enjoy starting with a poll (but it only does 4 options!)

Which subjects do you get Maths into the wider curriculum?  
[#mathscpdchat](#)

Sciences	81.1%
Humanities	5.4%
The Arts	5.4%
Other	8.1%

37 votes · Final results

and included these from [Peter Mattock](#), [Martyn Yeo](#) and [Catherine Edwards](#):



**Mr Mattock FCCT NPQSL** @MrMattock · Sep 14  
Replying to @martynyeouk

**Martyn (He/Him)** @martynyeouk · Sep 14  
Replying to @martynyeouk  
Am thinking which subject do you get Maths in the most? [#mathscpdchat](#)

**Catherine Edwards** @Edwards08C · Sep 14  
Replying to @martynyeouk  
Some of the question is, what do we mean maths and how explicit does the maths have to be in the other subject? So DT do a lot of measuring, is that maths?  
[#mathsCPDChat](#)

**Martyn (He/Him)** @martynyeouk · Sep 14  
Replying to @Edwards08C  
A good question - do you make it explicit when you do maths in other lessons?  
  
Does that make it more effective?  
[#mathscpdchat](#)

**Catherine Edwards** @Edwards08C · Sep 14  
I'm a secondary maths teacher hopping into the conversation, so can't really answer, although I make it explicit the other way when I use science or humanities in Maths. I think making those skills links is vital though as students have a tendency to silo knowledge [#mathsCPDchat](#)

**Martyn (He/Him)** @martynyeouk · Sep 14  
That's such a good point - we make those reading writing opportunities explicit - so why not maths?  
  
What's stopping us? [#mathscpdchat](#)

-  **Catherine Edwards** @Edwards08C · Sep 14 ...  
Certainly a secondary lack of knowledge of where/when mathematical skills as delivered across the curriculum.  
Time pressure to get content delivered. In some cases lack of staff confidence in explaining those links.  
[#mathsCPDchat](#)
-  **Martyn (He/Him)** @martynyeouk · Sep 14 ...  
And yet with everything the pupils have missed - we need to get every opportunity in - is your school doing anything? Maybe cross subject meetings with science?  
[#mathscpdchat](#)
-  **Catherine Edwards** @Edwards08C · Sep 14 ...  
It was my NPQSL project last year, mostly focused on the graphs used, hoping we'll have a little working party taking it further this year .  
[#mathscpdchat](#)
-  **Martyn (He/Him)** @martynyeouk · Sep 14 ...  
That sounds a great project - what did you discover and recommend to others from your work? [#mathscpdchat](#)
-  **Catherine Edwards** @Edwards08C · Sep 14 ...  
focussing a lot on really accurate language selection and fine details. Making sure when we say line of best fit for example we all mean the same thing in different areas. curriculum sequencing, DT wondered why Y7 couldn't use compasses, but they come up in Y8 maths [#mathscpdchat](#)

these from [Simon Ball](#), [Mary Pardoe](#), [Peter Mattock](#) and [Atul Rana](#):

-  **Simon Ball** @ballyzero · Sep 14 ...  
Replying to @martynyeouk  
I'm thinking you've got them in a good ascending order there: most in Science, with the subject retreating as you go down the list! [#mathscpdchat](#)
-  **Mary Pardoe** @PardoeMary · Sep 14 ...  
What about Art ... can get lots of maths into artistic creations?!  
[#mathscpdchat](#)
-  **Simon Ball** @ballyzero · Sep 14 ...  
Replying to @PardoeMary and @martynyeouk  
You can - if it's introduced that way. I don't remember any maths in the Art lessons I did as a student at any stage... so I would encourage people to give me examples and change my mind! [#mathscpdchat](#)
-  **Mary Pardoe** @PardoeMary · Sep 14 ...  
Replying to @ballyzero and @martynyeouk  
I ran maths-art lessons at one time (Y9) ... pupils loved them ... had regular exhibitions of what pupils created in Worthing library!  
[#mathscpdchat](#)

**Simon Ball** @ballyzero · Sep 14 ...  
I would have absolutely loved that. One of the realisations I've come to over the years is how beautiful and artistic mathematics can actually be! [#mathscpdchat](#)

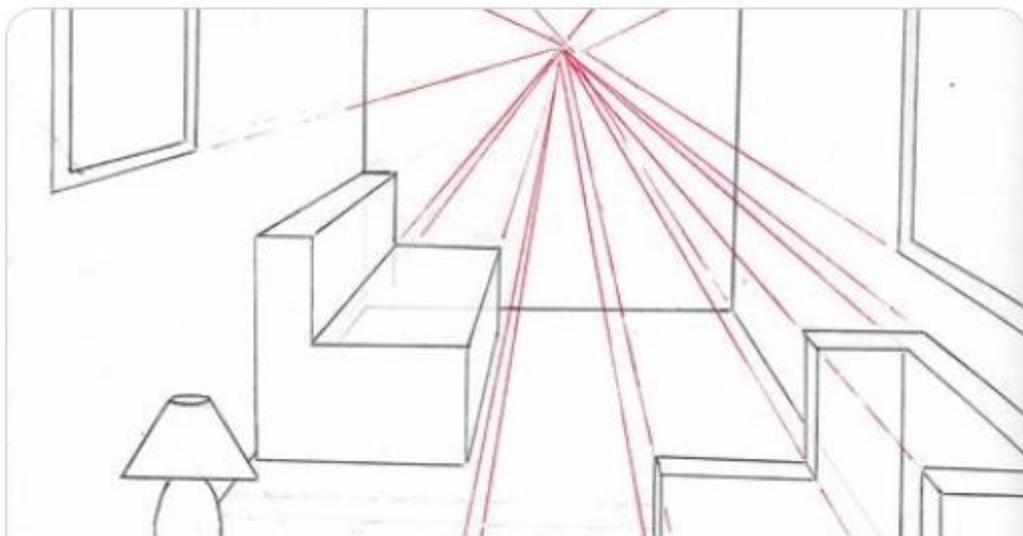
**Mr Mattock FCCT NPQSL** @MrMattock · Sep 14 ...  
You never examined symmetry or perspective in Art, Simon? [#mathscpdchat](#)

**Simon Ball** @ballyzero · Sep 14 ...  
In Art lessons, when I was a pupil - no. [#mathscpdchat](#)

**Mr Mattock FCCT NPQSL** @MrMattock · Sep 14 ...  
Maybe a product of your school curriculum at the time. What about techniques for drawing using circles and polygons a la the Simpsons?  
<content://com.android.chrome.FileProvider/images/screenshot/16316438550743627968314827740649.jpg>

**Simon Ball** @ballyzero · Sep 14 ...  
I wouldn't be surprised - I entered Year 7 thirty years ago. It's to be hoped that things have moved on since then! [#mathscpdchat](#)

**Atul Rana** @atulrana · Sep 14 ...  
I show links between single perspective drawings/photos when looking at enlargements for the first time. Stuff like that is here:  
[instructables.com/How-To-Draw-A-...](https://www.instructables.com/How-To-Draw-A-...)  
[#MathsCPDchat](#)



**How to Draw a Room Using One Point Perspective**  
How to Draw a Room Using One Point Perspective: By making a drawing using one point perspective, students will learn to make a two-dimensional space ...  
[instructables.com](https://www.instructables.com)

and these from [Peter Mattock](#), [Simon Ball](#), [Martyn Yeo](#), [Mary Pardoe](#) and [Atul Rana](#):

 **Mr Mattock FCCT NPQSL** @MrMattock · Sep 14 ...  
Not forgetting that all of music is basically maths [#mathscpdchat](#)

 **Simon Ball** @ballyzero · Sep 14 ...  
I hear/read that an awful lot - but never hear/see those links made explicit to students. Perhaps this is my position in a sixth form college working against me!  
😄 [#mathscpdchat](#)

 **Martyn (He/Him)** @martynyeouk · Sep 14 ...  
Yes! A friend of mine is a great mathematician and musician - definitely a correlation! [#mathscpdchat](#)

 **Mary Pardoe** @PardoeMary · Sep 14 ...  
Replying to @martynyeouk @MrMattock and @ballyzero  
... and Marcus du Sautoy is interesting re music/maths ...  
e.g. [simonyi.ox.ac.uk/performances/t...](http://simonyi.ox.ac.uk/performances/t...)

[#mathscpdchat](#)



 **Atul Rana** @atulrana · Sep 14 ...  
The story of Pythagoras is also interesting, not just the theorem of course but things like his contribution to music theory. Especially if there's a guitar involved. Makes for an excellent hook [#MathsCPDchat](#)

#### Guitar Mathematics

Image Copyright 2012 by Passy's World of Mathematics

Here at Passy's World we love playing guitar. What is ...

[passyworldofmathematics.com](http://passyworldofmathematics.com)

## Pythagoras Ratios for Guitar Frets

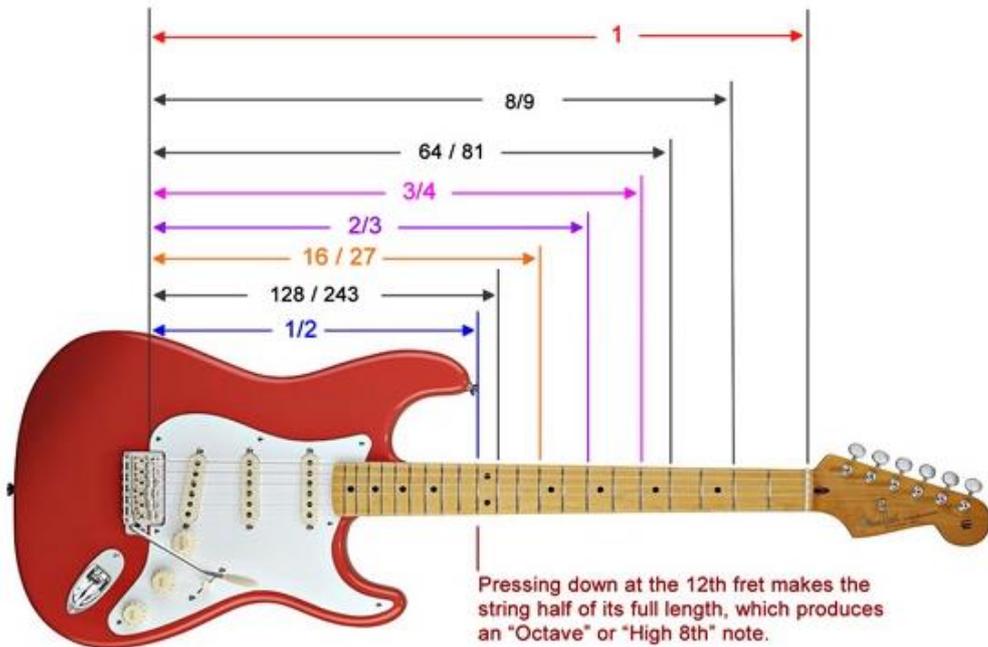


Image Copyright 2012 by Passy's World of Mathematics

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

There were only a few other areas where discussion focused. The poll that Martyn (the host) tweeted at the start of the chat generated most of the discussions that constituted the whole hour-long chat.

The main content of the discussions that were in response to the poll is indicated by the extracts from threads of tweets that are reproduced above as sequences of screenshots:

- however, in response to the poll there were also some comments about not trying to address-at-the-same-time too many of the mathematical ideas that can arise when the focus is on a particular curriculum area other than maths;



**Catherine Edwards** @Edwards08C · Sep 14

...

I think the temptation is to try and cover everything at once, or make links unnecessarily. Focussing on graphs was great because it kept it manageable for everyone and filled a need in the school. Once people see the benefits then we can build.

[#mathscpdchat](#)

- also, some subject areas other than those discussed in the tweets reproduced above were mentioned;

**Atul Rana** @atulrana · Sep 14 ...  
 Replying to @atulrana @PardoeMary and 2 others  
 Inverse square law, proportionality in balancing equations in Chemistry, surface area to volume ratio in Biology leading to smaller organisms with higher metabolic rates, rates of reaction...loads of science hooks as well.  
[#MathsCPDchat](#)

- a previous recent #mathsCPDchat that had included discussion about using stories as starting points for mathematical learning was also mentioned (link provided above);

**Martyn (He/Him)** @martynyeouk · Sep 14 ...  
 Replying to @atulrana @PardoeMary and @ballyzero  
 Of course - we could do a whole #mathscpdchat on using stories in maths - isn't that right @MathsStories

1      ↻      ❤️ 5      ↗

**Mary Pardoe** @PardoeMary · Sep 14 ...  
 (We did this #mathsCPDchat on 29 June this year, Martyn ... you hosted it!)

[ncetm.org.uk/media/ui5b2eea..](https://ncetm.org.uk/media/ui5b2eea..)

1      ↻      ❤️ 3      ↗      📌

**Martyn (He/Him)** @martynyeouk · Sep 14 ...  
 I thought it sounded familiar ;)

tweets that might have been responses to the host's 'Q 1' had already been generated by his poll-tweet, but 'Q 1' did prompt a short discussion:



**Tom Oakley** @ThatMathsMan · Sep 14

...

I like to see maths, particularly measures, applied in DT and cookery at school.

Personally I'm not very good at wood work, but the old rule of 'measure twice and cut once' seems to help.

[#mathscpdchat](#)

 **Martyn (He/Him)** @martynyeouk · Sep 14

Q1  
So how do you use maths in other areas of the curriculum?

How effective is it?

[#mathscpdchat](#)





**Martyn (He/Him)** @martynyeouk · Sep 14

...

Replying to [@ThatMathsMan](#)

And would you make it explicit you are doing maths or just keep it quiet?

[#mathscpdchat](#)



**Tom Oakley** @ThatMathsMan · Sep 14

...

Depends on what I'd want the children to think about in the lesson.

In a lesson that focuses on the correct use of cutting tools measuring will come up... but if I want to avoid cutting accidents, best to avoid the maths qs at that crucial first hacksaw cut... 🤔

[#mathscpdchat](#)



**Martyn (He/Him)** @martynyeouk · Sep 14



A good point - safety first



the host asked if there was anything (else!) that teachers would not recommend doing:



**Tom Oakley** @ThatMathsMan · Sep 14



Replying to @martynyeouk

Try and teach too much new content in one lesson.

E.g., trying to teach a geography lesson about mapping landscapes so children better understand topography and elevation... and then also trying to squeeze in maths about coordinates and measuring distance.

[#mathscpdchat](#)