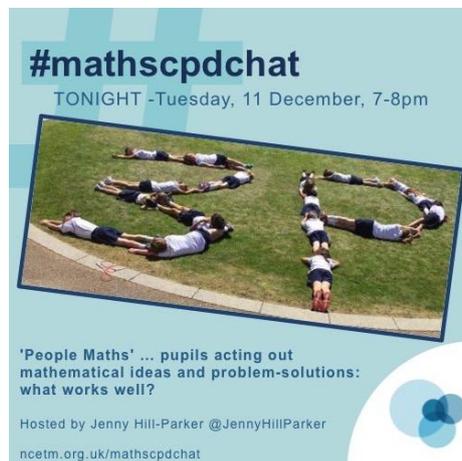


#mathscpdchat 11 December 2018

‘People Maths’ ... pupils acting out mathematical ideas and problem-solutions: what works well?

Hosted by [@JennyHillParker](https://twitter.com/JennyHillParker)

*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 focussed were:

- **representing place value and multiplication/division by powers of 10** ... pupils stand in a row linking arms (with an object such as a chair positioned to represent the decimal point) ... pupils move n places to left/right according to a stated operational command, such as ‘multiply by 1000’, ‘divide by 100’, ... ;
- **representing addition and subtraction of small whole numbers** ... pupils stand on a number-line marked on the floor, or on a 100-square composed of marked carpet tiles ... pupils move according to operational commands such as ‘add 10’, ‘subtract 5’;
- **exploring coordinate systems** ... pupils sit on chairs arranged in rectangular arrays with columns and rows numbered ... pupils stand up in response to commands such

as 'pupil in position (4, 5) stand up' ... commands such as 'pupils whose row number is one more than their column number stand up' lead to representation of straight-line graphs;

- **exploring simple statistics** ... pupils line up in order according to some property, such as age in months ... identify statistics such as median, quartiles, range, interquartile range;
- **representing scatter graphs** ... with axes marked in some way, pupils position themselves according to two particular factors (for example, number of siblings, number of pets) ... discuss correlation (or lack of correlation) for various pairs of factors;
- **introducing Venn diagrams** ... with large overlapping 'circles' (within a larger marked 'rectangle') marked in some way and labelled (for example 'blue eyed' and 'dark haired') pupils position themselves appropriately ... identify 'intersection', 'union', 'complement' ...;
- **'human loci'** (particularly helpful when working with low-attaining pupils) ... pupils position themselves according to conditions stated in relation to identified 'points' (such as bins) and 'lines' (such as line where floor meets wall) ... can be extended to represent graphical transformations (for example pupils representing $y = x$ move to represent $y = x + 1$);
- pupils **'acting-out', exploring and generalising in, combinatorial and other situations** ... for example 'how many handshakes when n pupils all shake hands once with each other pupil?' ... different ways of climbing n stairs, such as '1 stair, 1 stair, 2 stairs' or '2 stairs, 2 stairs';
- pupils standing in a line performing and exploring **shuffles**;
- pupils moving about in order to **represent transformations** ... reflections, rotations, translations ... even enlargements;
- using **dance** to explore relationships (and even fractions ... see Macarena dance).

An interesting 'conversation' of tweets, about pupils positioning themselves to form 'human loci', followed from this tweet by [Mary Pardoe](#):



Mary Pardoe @PardoeMary · 16h

Has anyone mentioned 'human loci' yet? Pupils position themselves according to conditions ... some notes here teachmathematics.net/page/3978/huma...

[#mathscpdchat](#)

including this from [Jenny Hill-Parker](#):



Jenny Hill-Parker @JennyHillParker · 16h

This is a godsend for introducing loci to low attaining students - need to get really secure with standing in the correct place before they go anywhere near a pair compasses! #mathscpdchat

this from [Kathy Hodgson](#):



Kathy Hodgson @KathHodgson · 16h

Replying to @PardoeMary

Often do this, always makes me laugh when they realise they can run to the other end of the rugby pitch & still be equidistant from 2 bins

and this from [Geoff Wake](#):



Geoff Wake @geoffwake1 · 4h

Can also be used for graphical transformations. E.G. with pupils representing $y=x$ investigate $y=x+1$ (step), $y=x-2$ (steps) etc.



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

Among the links shared were:

[People Maths: Hidden Depths, e-book](#) is an e-book from the Association of Teachers of Mathematics (ATM) that describes 43 different 'activities' in which people are used as pieces

of a puzzle, sum or diagram; the focus is on the 'hidden depths' of the activities which include the value of discussion generated by the activities, shared by [Mary Pardoe](#)

[Learning and Teaching Mathematics Without a Textbook](#) is a book by [Mike Ollerton](#) from the Association of Teachers of Mathematics (ATM). It is about learning mathematics using investigative approaches without needing to use a textbook as the main resource, and includes a wide collection of starting points and extension tasks, shared by [Gerry McNally](#)

[Human Loci](#) which is a page of the 'teachMathematics' website that provides notes on ways of working with pupils so that they become 'points' on 'human loci', shared by [Mary Pardoe](#)

[An idea for the classroom - Adam's Move](#) which is an article from the NCETM Secondary Magazine 61. It describes an exploration in which pupils act out problem-solutions that provide opportunities for pupils to generalise and express their generalisations concisely, shared by [Mary Pardoe](#)

[Being a Number](#) is a video in which [Mike Ollerton](#) presents the starting point for a special 'environment' ... people, who are seated in a circle, explore numerical relationships by 'becoming' whole numbers each of which is one of five colours that have been assigned systematically, shared by [Mary Pardoe](#)

[Focus on...perfect shuffles](#) is an article from the NCETM Secondary Magazine 63; it explains how pupils can work mathematically by acting out particular shuffles, shared by [Mary Pardoe](#)

[People Maths](#) is part of the TRANSUM website that describes many interesting 'People Maths' starting-points, shared by [Mary Pardoe](#)

[Dancing the maths](#) is a video where Mike Askew shows how pupils' learning of mathematics can be facilitated and enhanced when they dance in particular ways, shared by [Mary Pardoe](#)

[Adding fractions. The Macarena Method!](#), a resource by William Emery on the 'Great Maths Teaching Ideas' website, in which a way of using dance can help some (particularly low attaining) pupils see how to add fractions, shared by [Jenny Hill-Parker](#)