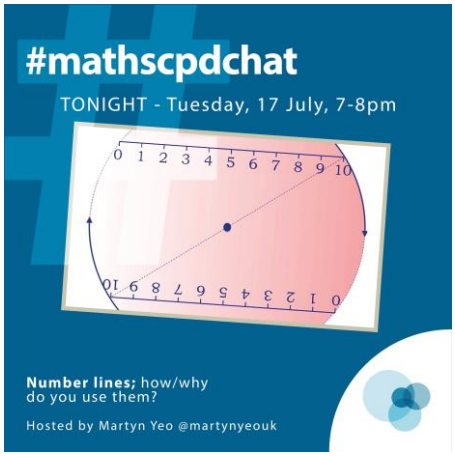
#mathscpdchat 17 July 2018

Number lines; how/why do you use them?

Hosted by @martynyeouk

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

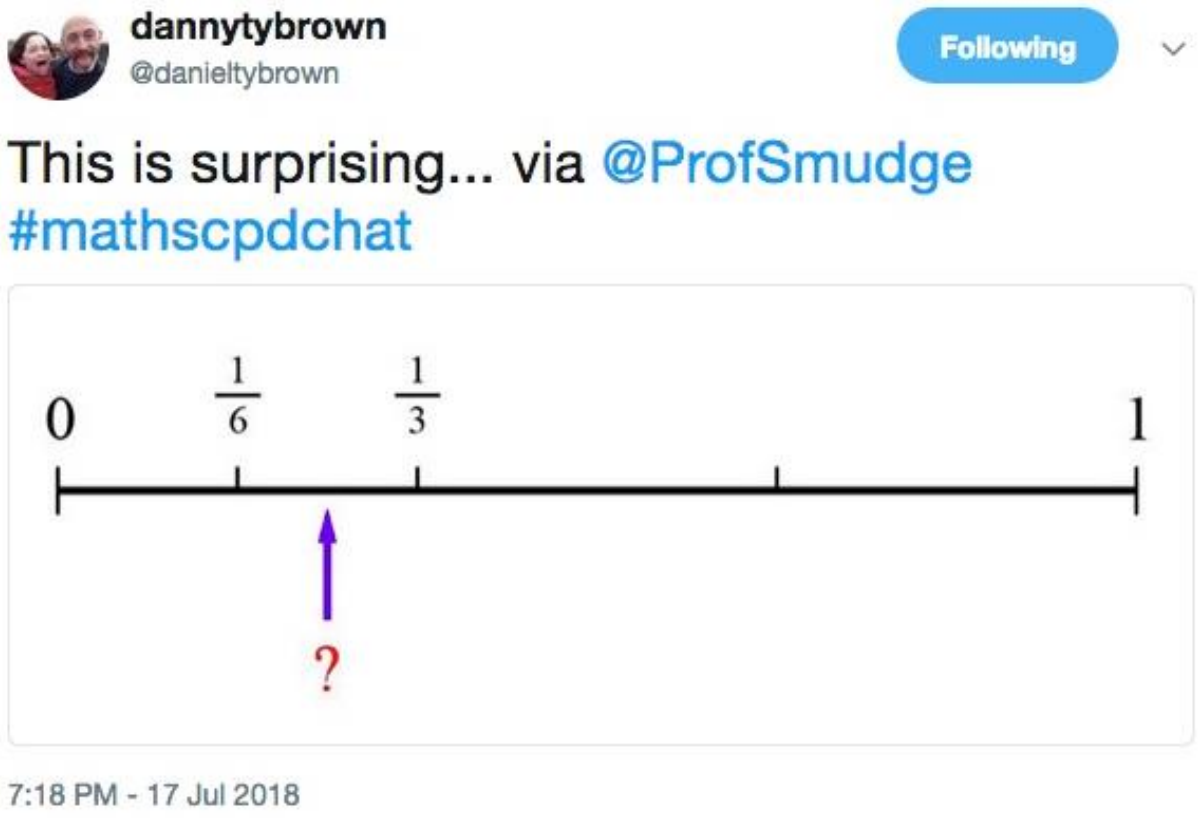


Some of the areas where discussion focused were:

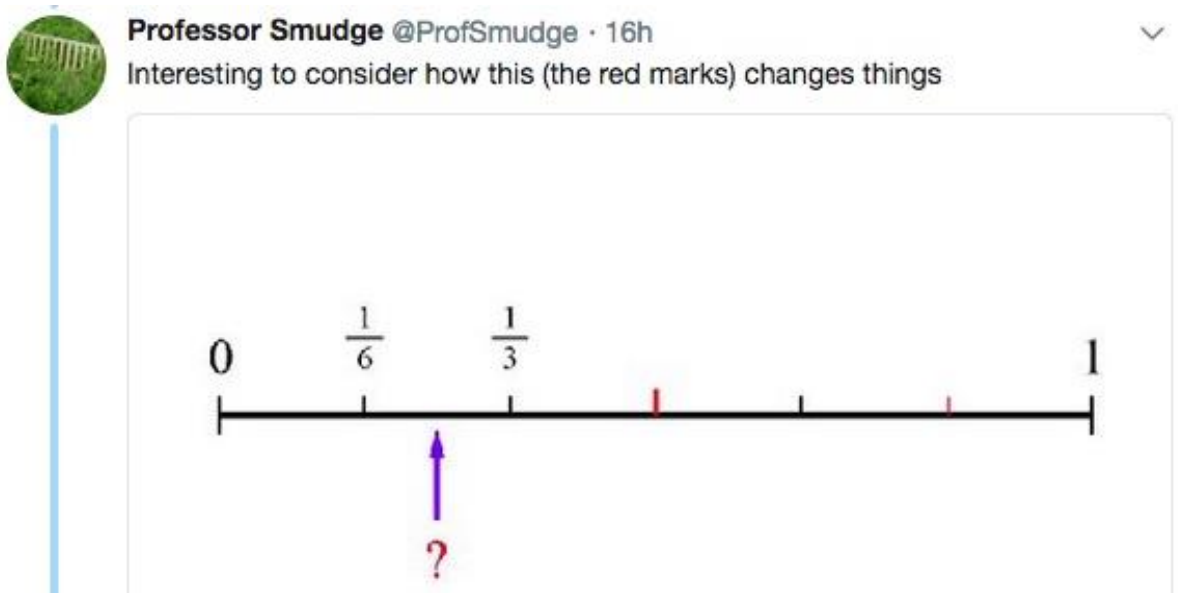
- number lines featuring in the **learning of Y1 pupils**, for example pupils responding to the prompt 'There are many ways to count!' by counting in jumps and writing their numbers in lines;
- gaining insight into the '**number-confidence' of Y7 pupils** by challenging them to draw the number lines that they 'have in their heads';
- **estimating, or deducing the exact, values** of numbers at points on number lines with equal divisions and where at least two numbers are shown; linking to axes on graphs,ratio and scaling;
- pupils using number lines as **calculating-aids when solving problems**, for example when pupils are trying to solve Foundation tier GCSE problems involving time or timetables;

- links to **'zoomable' number lines** that allow users to 'zoom' in and out on number lines;
- using number lines to challenge and **overcome misconceptions**, for example those derived from 'two negatives make a positive';
- using number lines to **support rounding**, for example to nearest ten, unit, tenth, hundredth … ;
- using number lines to support **understanding of aspects of proportionality**, including using unitary methods, scale-factors;
- tasks using **less obvious number lines**, for example an oblique line on a square grid where the only marked points are √20 and √80, or number lines in different modular arithmetics;
- how number lines can be used to support learning in **most topics** at any level in which questions have **numerical answers**; for example when … ordering and comparing statistics, comparing solutions of equations, solving inequalities, presenting answers to A level questions.

A particularly interesting sequence of tweets, about using a number line imaginatively to focus on a 'surprising' numerical relationship, followed from this tweet by Danny Brown:



including this one from Professor Smudge



and this one from [Martyn Yeo]

and this one from [Danny Brown]

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

Among the links shared were:

[MOTION MATH ZOOM] which is an interactive number line, shared by [@MathsladyScott]

Decimal number line which is an interactive teaching program from the Primary National Strategy that allows users to select an interval from a given number line and show that interval as a second number line divided into ten equal parts but on a bigger scale, shared by @Simon_Gregg

ZOOMING INTEGERS: MAGNIFYING THE NUMBER LINE which is mathematics software, shared by @MathsladyScott

Zoomable Number Line in which users can zoom in or out on a number line and scroll to left or right, shared by @MathsladyScott

Year Eight Multiplicative Relationships Mini-pack which is a National Numeracy Strategy resource about using number lines to support understanding of proportionality, shared by @inspiringmaths

Strike it Out which is a game from NRICH; it is a game for two players that is played on a number line, shared by @PardoeMary