

#mathscpdchat 19 June 2018

Discussion initiated by an item from NCETM's [Questions, tasks and activities to support assessment: Year 6](#)

What further questions, such as 'Why...', 'What happens if...' could you ask to check that pupils really understand the ideas involved, and can use their understanding to solve a variety of problems?

Only a fraction of each whole rod is shown. Using the given information, identify which whole rod is longer

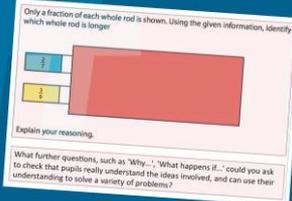


Explain your reasoning.

Hosted by [@mrmarchayes](#)

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

#mathscpdchat
TONIGHT - Tuesday, 19 June, 7-8pm



Discussion initiated by an item from NCETM's Questions, tasks and activities to support assessment: Year 6
Hosted by Marc Hayes @mrmarchayes

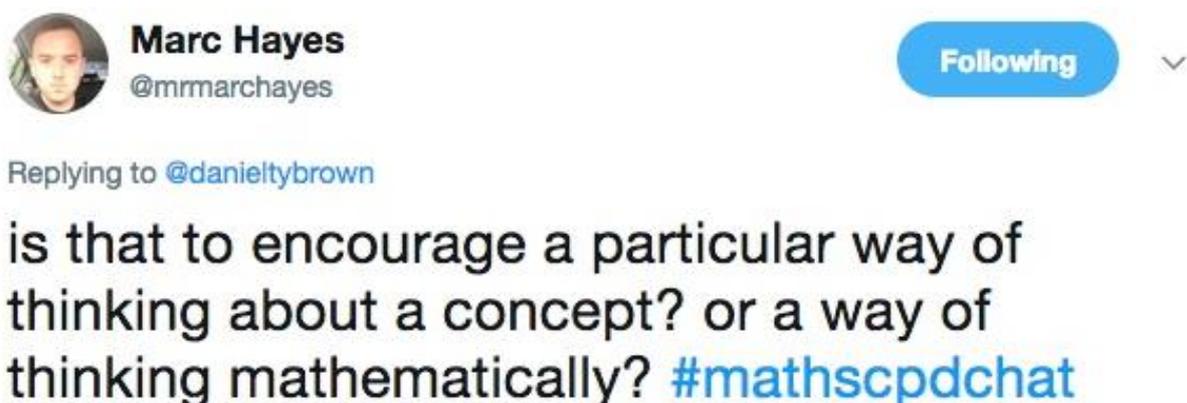
Some of the areas where discussion focussed were:

- how do questions arise in the classroom ... when asking a question what is the **teacher's purpose?**
- helping **pupils to internalise particular kinds of question** (in particular in order to support them in reasoning and problem-solving); 'scaffolding' and 'fading'
- **shifting the emphasis** on questioning **from the teacher to the learner** ... pupils questioning themselves and each other
- distinguishing between questioning to **check recall of facts and procedures**, to **probe and deepen understanding**, or to **prompt mathematical actions** (such as generalising) **and reflection** on them
- **'favourite' question-types**, such as 'Which one doesn't belong?'

A particularly interesting sequence of tweets, about asking particular questions frequently with the aim of getting pupils to know those questions so well that they become able to ask those questions themselves to help direct their thinking, followed from this tweet by [Danny Brown](#):



including this one from [Marc Hayes](#),



this one from [Danny Brown](#)



this one from [Mary Pardoe](#)



Mary Pardoe @PardoeMary · 14h

Meta questions ... [#mathscpdchat](#)

Translate Tweet

1.4 Meta-questions

Meta-questions are questions about the activity which draw learner attention out of the particularities of the current task with a view to making them aware of a process. For example: "What would you have to do next time to answer a similar question?", "What led you to choose this approach?", "What question am I going to ask you?" are typical meta-questions.

This last question is typical of a range of increasingly indirect prompts used to encourage learners to internalise questions which they could usefully ask themselves. When a particular type of question is proving fruitful such as "Can you give me an example", or "What do you know in this problem, and what do you want to find?", the teacher can explicitly refer to the use of these questions, perhaps by asking themselves out loud and replying in front of the learners while working on a problem, then using them with learners.

If learners come to rely on the teacher to ask the same question every time, then learners are being trained in dependency, not educated. After a period of time it is important to become less and less direct, and more and more indirect so that learners begin to internalise the question. The aim is that they take the initiative to ask themselves. To do this they need to withdraw from immediate activity and reflect on it 'as if from another dimension' (geometrically, a reflection can only be manifested if there is a move into a higher dimension). Eventually you can ask questions like "What question do you think I am going to ask you?". Of course the first time you ask this they will probably not know what you are asking, but you can tell them, then use the same prompt again later.

Effective Questioning and Responding
in the Mathematics Classroom¹

John Mason
Open University & University of Oxford
2010

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

Among the links shared were:

[NCETM's Primary Assessment Materials](#) as the source of the item that was the starting-point for the discussion, shared by [@PardoeMary](#)

[Effective Questioning and Responding in the Mathematics Classroom](#) by John Mason, as useful advice about questioning in the mathematics classroom, shared by [@PardoeMary](#)

[Questions and Prompts for Mathematical Thinking](#) from ATM, written by Anne Watson and John Mason, as support for effective questioning to support the learning of mathematics, shared by [@danieltybrown](#).