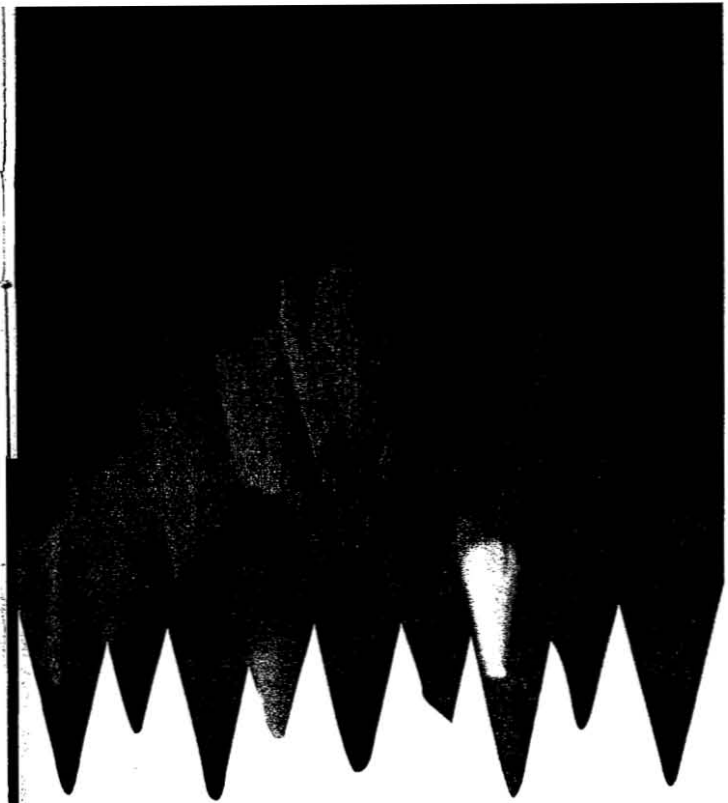


Take the humble pencil and encourage pupils to think about maths in new ways. Questions are all you need

We may say that maths is all around us, but do pupils see it that way? This activity could fill a few spare moments, or you might prefer to take much longer over it and make it into a major piece of work.

Take an everyday object, such as the humble pencil. What maths is there in and around a pencil? Learners might suggest all sorts of things: what shape is a pencil? How many planes of symmetry does it have? What order of rotational symmetry has it got? What does it look like when viewed from different directions? How many pencils would it take to stretch across the length of a football pitch? How many would it take to reach the moon? Estimate how many pencils are manufactured in the UK in one year. Estimate how many pencils a person gets through in their life. How many pencils would it take to do all the questions in your maths textbook?

It's claimed that one pencil can draw a line 60km long before it is used up – is that reasonable? How many pencils would it take to write out all the numbers from one to a million? How long would it take? How much area could one pencil colour in? How many pencils would it take to colour in an area the size of Antarctica? On average, how many times can you sharpen a pencil? What is the probability of a dropped pencil landing a certain way? How many pencils can you make out of one tree? Are pens or pencils more



Pencils make a point

environmentally friendly?

You can choose different objects on different occasions. The kind of questions pupils construct will reveal what bits of maths they are familiar or comfortable with at that time. Learning to ask good questions is a worthwhile end in itself and encourages learners to have their mathematical eyes open as they go about their lives. Groups could choose questions to investigate and present their findings ■

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Object of the exercise

- Estimate sizes of everyday items.
 - Calculate using approximate values.
 - Justify why answers are reasonable or unreasonable.
 - Convert from one unit to another.
 - Resource: Guinness Book of Records.
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