Enhancing Numeracy in Triple Science
The Mock Turtle went on. “We had the best of educations . . . Reeling and Writhing, of course, to begin with, and then the different branches of Arithmetic—Ambition, Distraction, Uglification, and Derision.”

“I never heard of Uglification,” Alice ventured to say. “What is it.

The Gryphon lifted up both its paws in surprise. “Never heard of uglifying!” it exclaimed.

There are a number of ideas in science that really only make sense if we have a grasp of numeracy. These are some examples:

- It is relatively easy to understand that light from the sun can be used by a PV cell to produce a flow of current, which can then power a motor. Why is it then that the internal combustion engine in a car can’t be replaced by an electric motor powered by a PV cell on the roof? In order to understand the challenge in scaling up the table top demonstration using a bright light and tiny motor there needs to be an understanding of scale and proportion.

- Many pupils are used to drawing graphs in experiments which generate data. The construction of a graph requires skills but interpretation requires a partially different set. Making sense of a graph you’ve drawn is easier because you know what was going on in the experiment that informed it. If the graph is your only source of information you have to learn how to ‘tell the story’ represented.

- Many concepts in science are about the interrelationship of factors and these relationships may be represented by formulae. The formula is a representation of that relationship; as teachers we have to decide whether to settle for pupils having a mechanistic grasp of formulae or to try and develop an understanding of the relationship behind it.