Book Review: The Little Book of Algorithms

There is little doubt that children find algorithms difficult – the quantity of material available on computational thinking and on programming is huge but the link between them is not always evident. I was hoping that this little book would be one of the elements in establishing that there is a link between computational thinking and programming. It didn't do it for me but that isn't to say that it isn't a useful contribution linking algorithms to python: it is and it scaffolds knowledge between the two.

The premise is right for the book (that pupils find it hard to create programs independently and there needs to be a helpful book they can use to develop the skills required to do so). There is nothing worse than seeing a blank page where code should exist and pupils becoming demoralised.

As a classroom tool I can see where the book would be useful. The problem is that it misses out computational thinking to create the algorithm in the early stages of the book – readers are instead pointed to lines of code. It is only later in the book that they engage with the coding and do the thinking. I realise that this is an attempt to scaffold but

My preference would be for a book which went from computational thinking to algorithms (perhaps to pseudocode) and then to python. I recognise that it would have been rather longer than the name "A little book of algorithms" would allow. I would also like more visuals – which would have meant a much bigger book, but my feeling is that it would have made a bigger and better better. The ideas behind this are great, most of the content is worthy but it reads rather more of a programming book rather than one about algorithms – it looks only at python. It teaches how to code (it would be helpful to be explicit about the actual version of python) and has some useful exercises to make children think about how to do this rather than taking the approach I would prefer which is to build the ideas, develop and explain the algorithm in detail – perhaps using python to do the illustration of how to implement the algorithm.

Will I recommend it to my students? Yes. I will. My students are adults and it provides some interesting pedagogical background. But I will do so recognising the areas that this book would benefit from as well as the things it does well. Where it is good for my students is seeing the level of programming pupils could have early in their GCSE Computer Science and then how to get children to think through applying existing routines to new (but not too new situations)