

About the writer

If you have got this far it's probably because you want to know why I have troubled to write lessons about atoms and molecules free of charge! I'll explain as briefly as I can.

The science that pioneered atoms and molecules is chemistry, and in 1965 I left a university chemistry department in England to start up a new one in Central Africa. Existing chemistry courses seemed to satisfy no one, and I was convinced that they provided too much material for students to properly digest. I felt that if the new department were to put quality of learning before quantity and give greater attention to the essentials, students would begin to see the wood as well as the trees, and the natural attractions of the subject would then become apparent. The proof of a pudding is in the eating, and after the African university's first ten years more students had majored in chemistry than in any other subject. (There was no cheating – our graduates did well when they went abroad for further studies.)

Returning to England on retirement, I found a sad contrast: fewer and fewer young people there were studying chemistry. I felt that they were choosing, not better subjects, but subjects they could understand better, and that many of them would have chosen differently if they had met a few clarifying ideas about chemistry when they were younger. Children were surely losing out! I had the time and knowledge to make a contribution; and I could visualise a topic that would make a crucial difference to the early teaching of chemistry.

Atoms and molecules are now essential knowledge not just in chemistry, but in most of the other sciences as well, and since the first lessons are rather like playing with bricks they are suitable for young children. I therefore became a primary school volunteer. Of course I lacked the professionals' knowledge of how to teach young children – my first class could have been students in a lecture theatre, only shorter! But even that class must have had a sense of something worthwhile, for I was allowed back again; and after eighteen successive years of teaching, with the help of many different teachers and classes, a very good topic has emerged.

I hope this version of it will be useful to parents who teach their children, and that it might suggest to syllabus creators a more successful way of starting chemistry. I think the teaching of atoms and molecules in primary schools is long overdue.

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