

Responding to Ofsted using DATA aids

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Year 2 did a detailed investigation into vehicles for moving things and produced a truck to move a tennis ball

This article describes one year of design and technology work in a North London primary school. The design and technology co-ordinator, Rosey Harding, tells how she devised a plan to counter Ofsted criticisms, how teachers responded and the part DATA aids played in the recovery.

Richard Cobden Primary School is a mixed, two-form entry school with some 350 pupils aged 3-11.

As the summer holidays of 1996 approached, the teachers at Richard Cobden School in Camden found themselves in more than usually euphoric mood. A better-than-hoped-for Ofsted report – “very good with outstanding features” – had been delivered. All our hard work and preparation had been acknowledged and we had the summer to relax completely. Only one subject had been found wanting and that was design and technology in which design skills were thought to be below average in both key stages. While we thought the inspectors’ evaluation of design and technology work in the school was extremely cursory, we could not disagree with their final analysis. We knew we had a lot of work to do in that area.

I took over the coordinatorship from a retiring teacher and while other teachers were switching off I was mulling over our problems. By the end of the summer I had some ideas and had discovered two invaluable aids. The DATA *Primary Coordinators’ File* helped me to understand the role of the coordinator and gave me specific advice on the issues facing me. The second aid, DATA’s *Guidance Materials for Key Stages 1&2*, seemed to offer a way of organising design and technology which made planning straightforward and gave

teachers detailed advice on how to teach particular projects.

As soon as we got back in September I surveyed the staff to find out where they saw their own weaknesses, using the questionnaire provided in the *Coordinators’ File*. There was general agreement that the difficult areas were mechanisms, electrical circuits, textiles and the use of products and applications. And there was the problem that virtually no *design* work was going on. I drew up a two-year development plan based on five global targets:

- improve the quality of teaching
- improve the quality of pupils’ design work
- develop a whole school framework
- rationalise and extend resources and equipment
- demonstrate achievement in design and technology.

The governors allocated some money to the plan and by Christmas we were ready to go.

In the meantime I introduced the teachers individually to the idea of using the DATA units of work. I enthusiastically promoted the units of work as answering all our problems and tried to find a unit to fit in with each teacher’s topics. Key Stage 2 teachers all accepted the scheme immediately and each found a suitable project for the term. Key Stage 1 teachers were more resistant. They were unwilling to deviate from their termly topic plan so unless I could come up with a





At the local secondary school teachers made a wooden box to get first hand experience of the skills required for secondary technology

unit that fitted the topic they continued as before, tackling design and technology projects that arose from the stories associated with the topic.

Although they were initially enthusiastic, Key Stage 2 teachers had mixed success. In the autumn term Paul Williams tried the charity collecting box project with his Year 5 class. He says "I thought the instructions given in the unit of work were clear and I didn't expect it to be difficult. In fact we had several problems. The first was that I had no examples of collecting boxes to show the children so they did not start with a clear idea of the concept. Then we had a lot of trouble making a switch that turned a buzzer on when a coin rolled over it. The best we could achieve was a momentary bleep. If I did this unit again I'd try it with a Year 6 class and spend a lot more time looking at ways of making switches, perhaps incorporating a 555 timer on a little circuit board. At the end of the day my class were frustrated by their limited success." In retrospect we realised that the investigation, disassembly and evaluation phase of the project had been limited by not knowing how other charity boxes worked. We will not do that unit again until we have found some examples.

Meanwhile the two Year 4 classes were making belt bags. Nearly all the children brought in their own belt bags to investigate and compare. We followed the programme set out in the unit of work and all produced very satisfactory results. The headteacher invited both classes to model their bags at assembly and there was enthusiastic applause from the school. Lots of Mums got belt bags for Christmas that year.

Although they were initially hesitant, in the spring term two of the Key Stage 1 teachers tried out units. Sarah Harvey in Year 1 used the celebration cards unit of work as the basis for her design and technology teaching and felt that it gave the project more depth. She was impressed with the cards produced by her class.

In Year 2, Kathy Bannon chose a torches project to fit in with her electricity topic. She followed the instructions for investigation and disassembly and did focused practical tasks but then came to a temporary halt. She was not clear what the final outcome was going to be. Together we explored various options for making the torches and identified potential problems so she was well prepared when she introduced the children to the making stage. The children were wildly enthusiastic about their torches.



Year 5 produced some inventive mechanical toys

Looking back, Kathy Bannon felt the task had been difficult for Year 2 and in fact when the Year 3 classes tried it in the summer term they still found it a difficult project.

By the summer term I had realised that the success of the projects depended on whether the teacher had read and understood the unit of work for their term's project. For a design and technology specialist the units seem quite straightforward but if your understanding of design and technology and the terminology is vague they may well be off-putting. To resolve this I produced a simplified version for each teacher. This took the form of a typed sheet giving week by week instructions, accompanied by a prototype design folder. So a teacher would have an instruction:

- look at a car
- draw from front, side and back
- note how views are different
- introduce technical vocabulary ...

and alongside it would be a sketch of the type of drawings the children might be expected to produce. This tweak turned out to be very successful and resulted in much

better analysis and design – and good quality finished articles. Both teachers and children began to realise the benefits of undertaking a thorough design process as a preliminary to making something.

While all this was going on we devoted nearly all the school's yearly allocation of INSET time to design and technology. I felt it was important to keep in mind the need to prepare our children for their secondary experience. So our first session was a visit to the local secondary school to see how design and technology is taught there. Then the Education Officer from the Design Museum came along to talk to us about evaluating the design of products, using things as simple as a lemon squeezer. We all found this a useful session. We then spent one whole day making demonstration boards. During this session we each took a topic, for example levers, switches or textiles, and put together examples of all the essential teaching points with key vocabulary and interactive elements all on one board. This had a learning function in that it gave teachers time to analyse what the teaching points were for their topic but it also had a practical function. We now have a collection of boards which are taken to the classroom for use in teaching focused practical tasks.

Our last INSET of the year was designed to address the problem of teachers not knowing the likely outcome of their unit of work before they taught it. Here each teacher made an example of the project they would be teaching in the autumn term. This enabled them to check the equipment and materials they will need and to get a grasp of potential difficulties. As one teacher said: "you can now be there when a problem is likely to occur".

Reflecting on our progress in meeting the global targets set out at the beginning of the year I feel we have made a very good start. Teachers are becoming more confident and more interested in the subject. As Key Stage 1 teacher Kathy Bannon says "I feel I've covered design and technology properly this year. There's great clarity in the series of steps you go through and now I couldn't think of doing it any other way. I wish we could apply the same logic to all the subjects."

In the summer term I was released for an afternoon a week to work with teachers on design and technology projects and this gave me an opportunity to help several teachers through areas of uncertainty. The headteacher has promised that this will continue for at least one more term. Key Stage 2 children had a design and technology assembly where they showed their work to the rest of the school and this was followed later in the year by Key Stage 1 doing the same. This showed everyone the standard of work being achieved throughout the school.

The plan for 1997/98 is to repeat the projects that were successful and replace those units that did not work for us. With the new units of work produced by DATA and with some slight adaptations we have managed to plan a year's work for the whole school, from nursery to Year 6, using existing units. And by next year, when we're heartily sick of torches and belt bags, we should be capable of writing some new units of our own.

We have been given a resources room to store design and technology equipment so now we will start to build up our collection of artefacts and products relevant to the units of work we plan to do. I will continue to provide simplified versions of the units of work for teachers who need them in the hope that they will feel confident in using the real thing pretty soon.

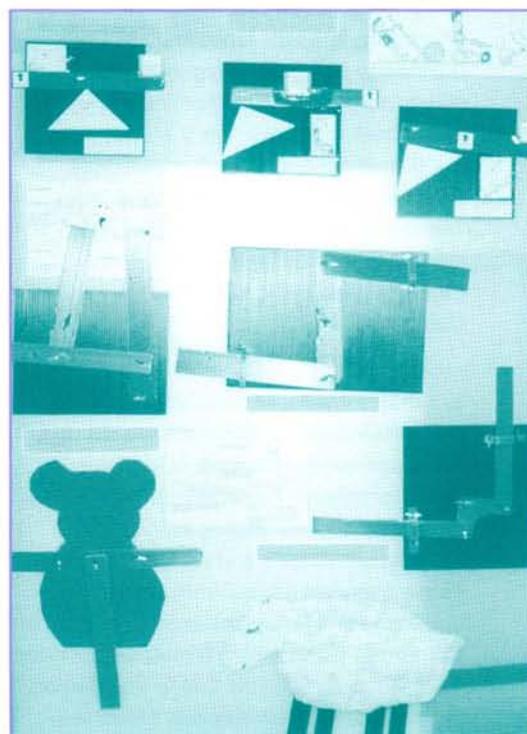
I am concerned that we are becoming too prescriptive – not giving the children enough opportunities for exploring ideas and coming up with their own designs. But I am equally aware that allowing this freedom requires a high level of competence and confidence on the part of the teacher and it will come more easily to children who have been developing design and technology skills from the moment they joined the nursery school. This will take time.

References

DATA (1995) *Guidance Materials for Design and Technology – Key Stages 1 & 2* Wellesbourne: DATA
 DATA (1996) *The Design and Technology Primary Coordinators' File* Wellesbourne: DATA



Year 2 children were thrilled with the torches they made



Teachers produced ten demonstration boards which are used in the classroom to help with focused practical tasks