

**Success is compulsory.** This is one of our most important maxims. We believe that every time a child makes something that's supposed to work it is the teacher's responsibility to see that it does work. It's no good the teacher saying, 'Sorry, can't help. I don't know why it doesn't work either!' We can't support an approach that has failure as an almost inevitable outcome. If children are given design tasks that produce solutions that are beyond the comprehension of the class teacher, then someone is making a very serious misjudgement. This means that we have to provide class teachers with proper support and we mustn't put children in the position that their *magnum opus*, with all that's invested in it, results in a failure. Primary school isn't the proper place for this, the children there are not likely to be motivated by failure, they must be helped to succeed, and only the class teacher can do this by managing the level of the design challenge.

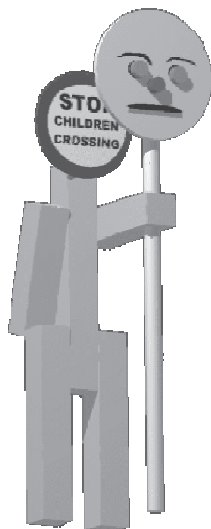
Later in this book you will find more than twenty projects that have accompanying design 'challenges'. Treat these design briefs with caution. If the children do not seem ready for the challenge then walk away from it. Every one of the forty or so focussed activities can be used for exercising and developing decision making skills. Every model stops well short of its potential. Children can, and should, be encouraged to modify, and we would hope improve, each and every one of them. It may be that a particular sized card disc is not available, perhaps they've all been used. So, the children can work round the problem, find another way. THIS IS DESIGNING. If a child's idea for an improvement doesn't work they can fall back on the illustrated version and success will be restored. As children's experience grows then naturally they will be able to tackle more ambitious challenges, but there's no rush. They're still at primary school!

It is perhaps the P6 or P7 pupil who is most at risk from being overstretched in this way. A project labelled suitable for P7 pupils assumes that they have accumulated six years technology experience. If they haven't then some are likely to struggle.

#### TEAMWORK - the Group Project

It is often stated that design & technology is well suited to developing the 'Team Approach' to problem solving, and we have to admit there are compelling reasons for operating technology activities with groups of children. Firstly there's the possibility of saving materials. Thirty electric buggies are going to use up more scarce resources than six made by the same thirty children working in groups of five. Then there's space. Are thirty suspension bridges going to fit in the classroom? These are serious considerations, and it may well be that such activities are best tackled by groups.

Perhaps more important are the social benefits with opportunity for the development of interpersonal skills - with children being encouraged to work together, to make joint decisions and to learn to compromise. These are all worthwhile outcomes but valid technology experiences mustn't be sacrificed, however laudable these secondary benefits might be. Each and every child must be able, not only to make important decisions, but to be in a position to act on them. The success of a team depends on a successful blend of the strengths of those who make up the team. A successful team is rarely made up of individuals who bring identical abilities to that team. A good team has a leader who recognises the strengths of each team member and has the ability to place that member in the position where his or her individual abilities add most to the success of the team. So where's the place for the child without easily identifiable skills and abilities? Do they get to hold the wood while the glue dries? Is this what we want in primary schools? Possibly, but surely not all the time. To identify a child's abilities is great for their self-esteem, but to identify their weaknesses with a view to improvement is surely an equally important role of the primary school. What about the introvert with lots of good ideas who always ends up helping to make someone else's idea work?



A large proportion of the class group's technology activity must be organised on the basis that individuals form their own hypotheses and then test them by practical application. Anything else sells them short. By all means have some group work, especially when the project demands the use of valuable resources, but for the best results individual children must make their own models, models they can take home and show their families with pride and satisfaction.

Ideally this happy event should happen several times a term, even if that means many of the items produced are very small and very simple.