

## Now you see me, now you don't! A student project designing and making a child's pop-up book

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Paper engineering is a popular area for GCSE Design and Technology. Matthew Phinn describes his project, which won him £250 and an Arkwright Scholarship.

For my Project Trident Work Experience I spent two weeks in a first school. I became fascinated watching the young children's reactions to the range of bright, inventive and cleverly constructed pop-up books and decided that for my GCSE Design Communication project I would design and construct a children's pop-up picture book using paper engineering.

### ■ Research

Firstly, I researched the project carefully by visiting the public library, bookshops and the local infant school to look at the range of children's pop-up books available. I also wrote to the main producers of the books, Child's Play International and Orchard Books, asking for information and advice.

Sadly, neither publisher replied to my letter. I had heard that the North Yorkshire Advisory and Inspection Service had produced some technique project sheets featuring pop-up books and the Design Technology Adviser kindly lent me a copy. I dismantled two pop-up books — *Small Talk* by Jan Pienkowski and *Learn about Farms* by Child's Play — to discover the different techniques they had used to create pop-up effects and found that there are four main techniques:

- Square fold — this makes the basic box shape and can be used to produce a design involving a table, bed or the base for other figures (Fig. 1)
- V fold — made from a single piece of card folded to make two triangles, this forms a basic V shape and can be used to produce a design such as a duck's beak, a crocodile, a bat or a tent (Fig. 2)
- Slider — this technique is used to make an animated card with an element of surprise. It is where a face or object appears and moves in a sliding action. Creatures can appear from behind bushes, faces pop up or objects slide into view. (Fig. 3)
- Spinner — with this technique, a disc is turned upon a pivot to reveal a hidden object, creature or word. (Fig. 4)

From my research, I came to a number of conclusions, which helped me in the specification:

- Pop-up books are directed towards the age range 4 to 8. Little children like the big, bright and unusual pictures and enjoy the surprises when animals and faces seem to lift from the page.
- The stories featured are simple, clear and printed in bold lettering. The aim is to get children to get to know simple words and phrases and enjoy a funny account.

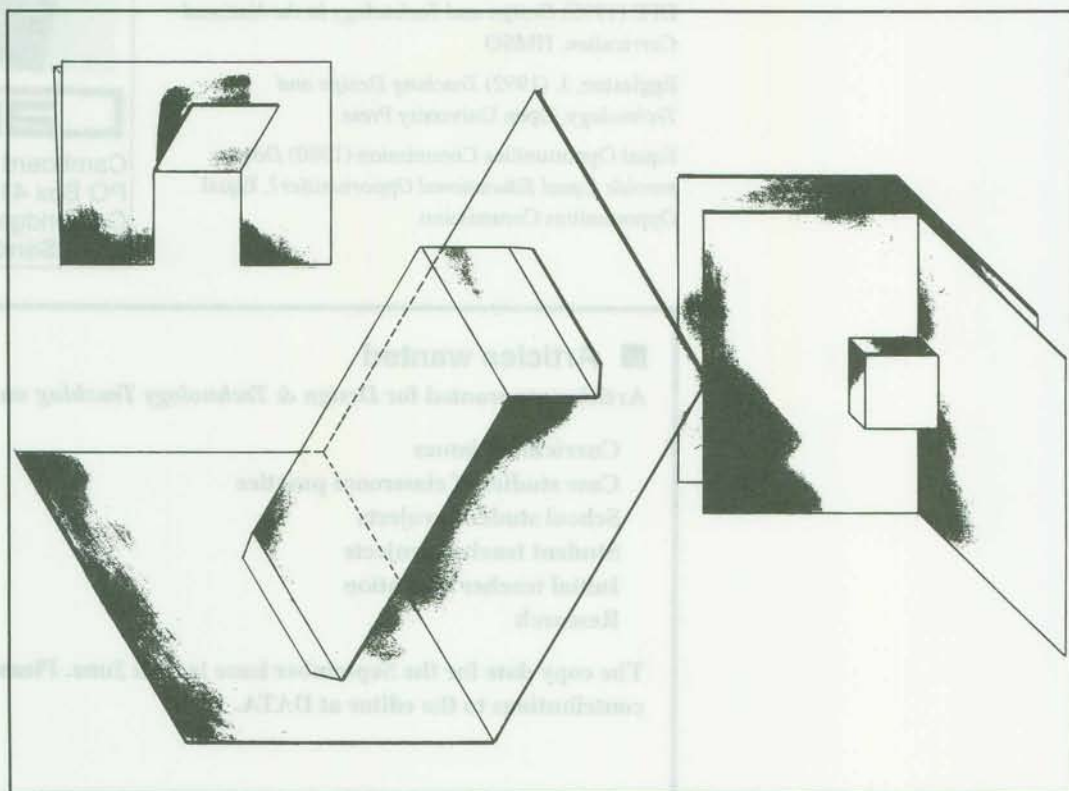


Fig.1: Square fold — this makes the basic box shape and can be used to produce a design involving a table, bed or the base for other figures.

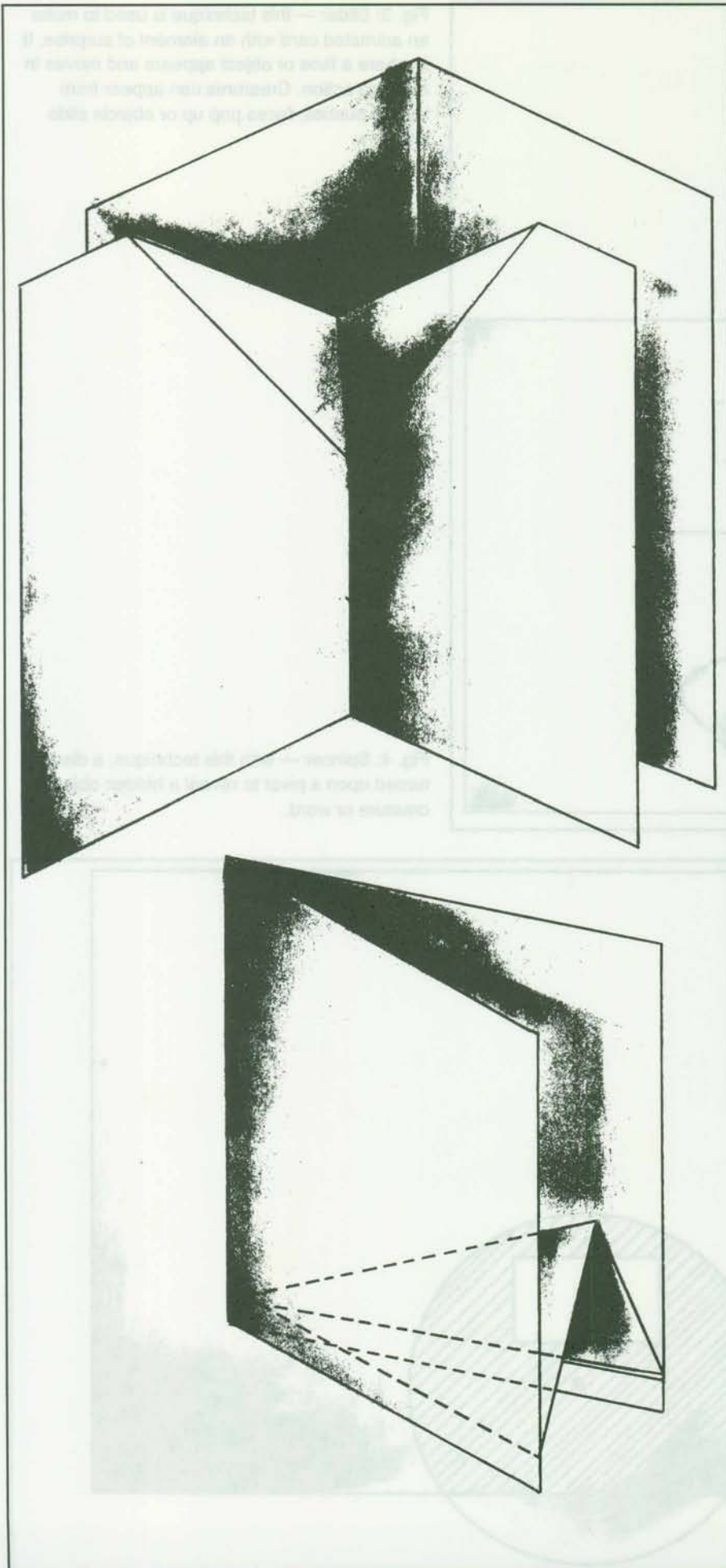


Fig. 2: V fold — made from a single piece of card folded to make two triangles, this forms a basic V shape and can be used to produce a design such as a duck's beak, a crocodile, a bat or a tent.

- The colours used are primary, bright, bold and eye-catching, with thick outlines
- The books have few pages. The majority I examined had between six and eight pages. To make a longer book would be difficult to construct and be too bulky.
- The techniques varied. The spinner and slider techniques usually appeared in the information books such as *Learn about Shapes* (written by Dot and Sly Barlow). Nick Bantock's books *Solomon Grundy* and *Jabberwocky* contained the widest variety of techniques but were intended for an older audience.

I noticed on my work experience that in the First School the children handled the books roughly, pulling and pushing at the constructions and bending the card to see what was behind. The cheap pop-up books, produced in Hungary and Czechoslovakia, fell apart easily however carefully they were handled. The books produced in Britain were constructed of thick, resistant, hard-wearing card and the pop-up mechanisms did not tear easily. In my specification I therefore decided to use strong card and a combination of the V folds and square folds.

### ■ The specification

I decided that the pop-up book would:

- contain no more than six pages (twelve sides)
- be suitable for children aged 4 to 8
- be constructed in strong but thin card
- measure 10 cm by 220 cm
- contain a range of paper engineering techniques
- contain large, simple, colourful and imaginative illustrations
- be coloured in primary colours using a range of techniques: felt-tips, gouache paints, air-brush, pastels and computer graphics

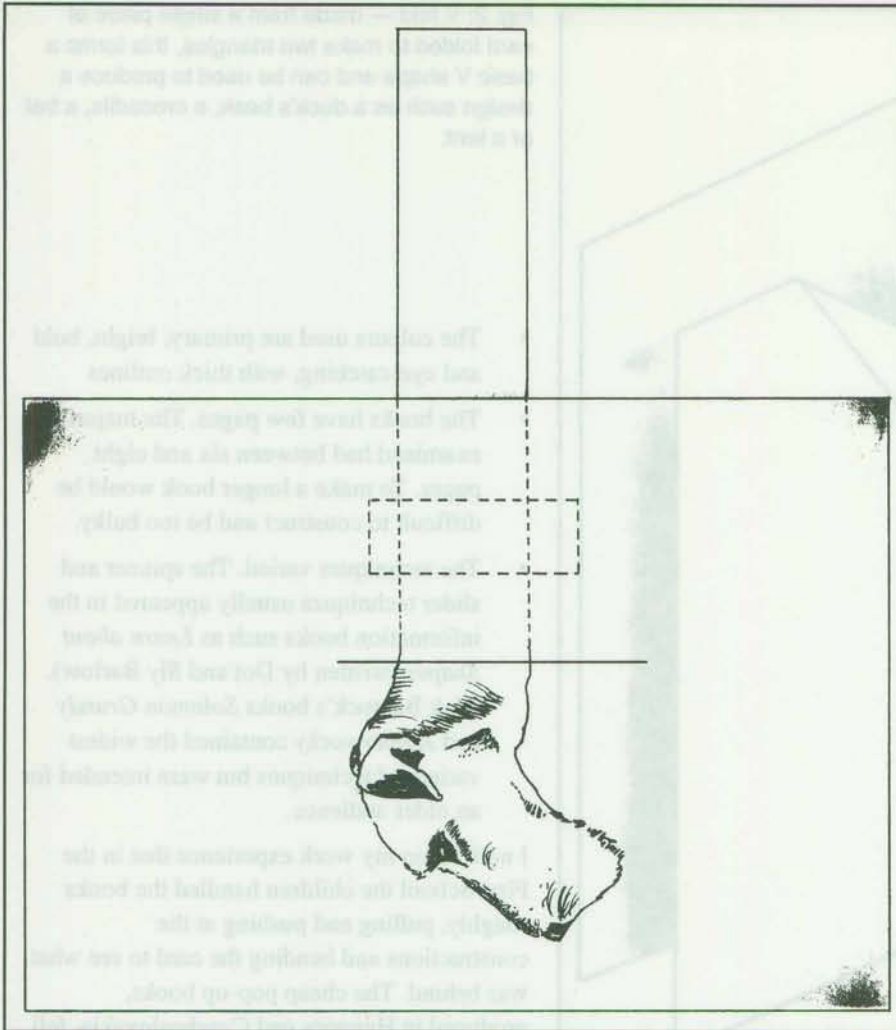


Fig. 3: Slider — this technique is used to make an animated card with an element of surprise. It is where a face or object appears and moves in a sliding action. Creatures can appear from behind bushes, faces pop up or objects slide into view.

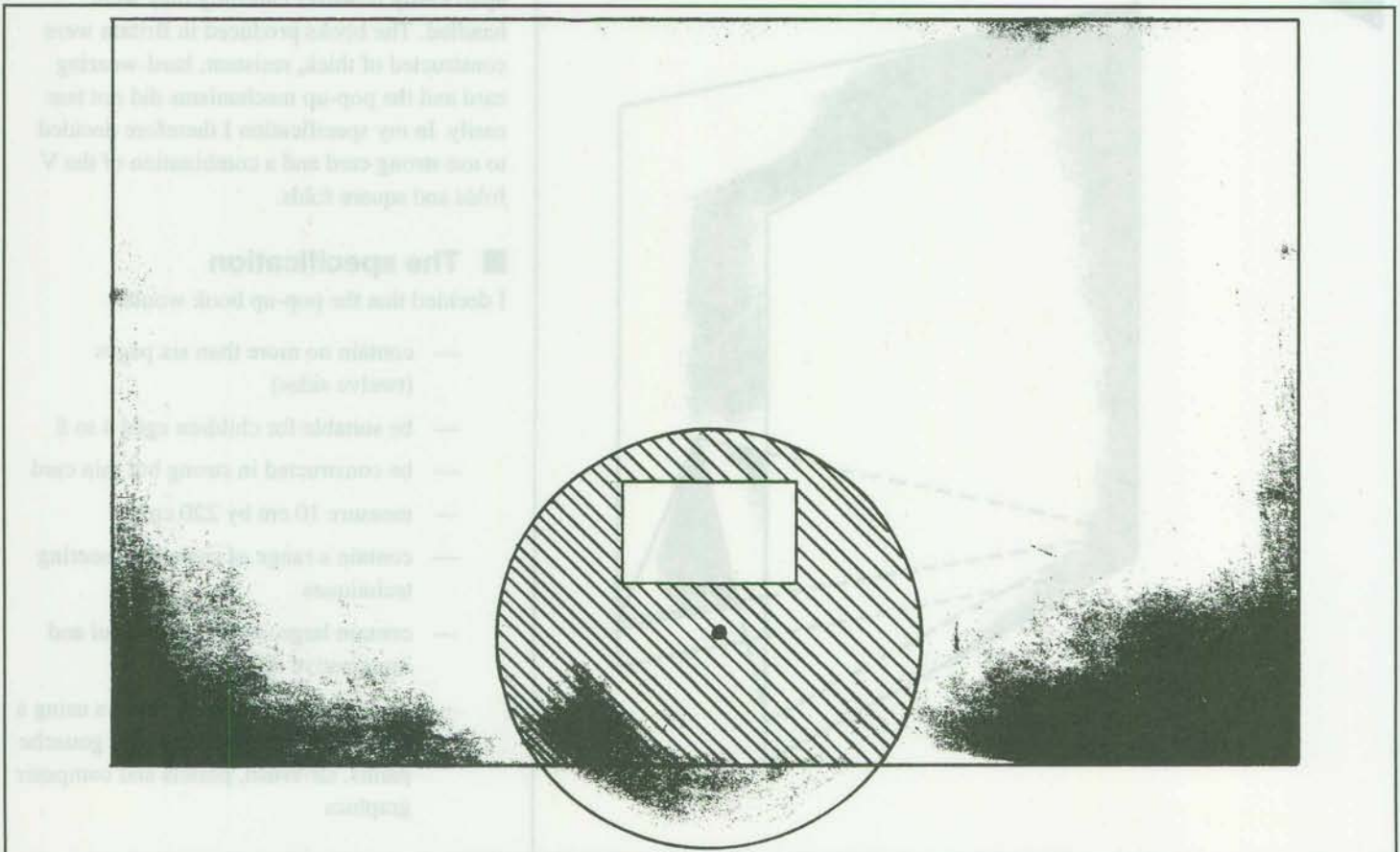


Fig. 4: Spinner — with this technique, a disc is turned upon a pivot to reveal a hidden object, creature or word.

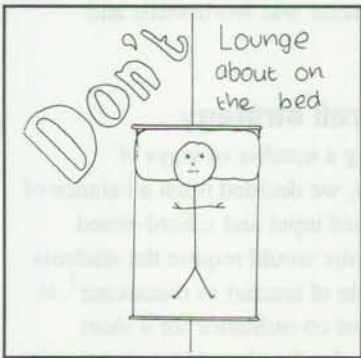
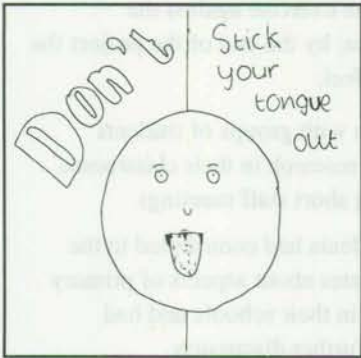
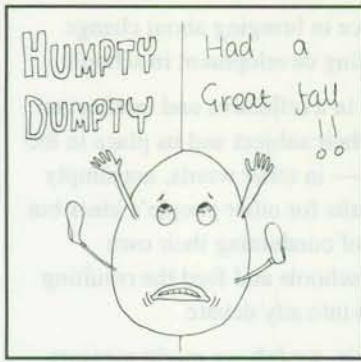
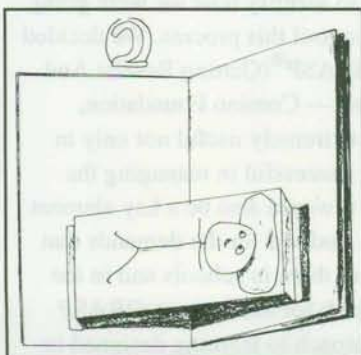


Fig. 5: Initial ideas for *Humpty Dumpty* and *Don't!*

Fig. 6: An early attempt at the bed — which as Matthew found, would only work if it lay vertically across the fold.



- contain large print of various sizes but with one principal font style
- illustrate a simple story or poem which I would write myself.

■ Ideas

I considered a number of ideas, starting with 'Safety in the Home'. The engineering could illustrate the dangers of playing near sockets, cookers and machines, and tell children what to do in case of fire. I drew out some initial ideas, but found that the task of making pop-ups illustrating the danger of, say kettles and tools, would be too difficult.

I then considered a well known rhyme — Humpty Dumpty. Most children are familiar with this character, and I felt there would be some exciting possibilities constructing the King's horses, the falling egg and the broken shell. On further consideration, however, I decided to opt for something more original.

This was *Don't!* — a short, simple story which I would write, using a number of different paper techniques. The theme was some of the 'Don'ts' which parents are always saying to their children. The book features an angry father, telling his child:

- 'Don't speak with your mouth full!'
- 'Don't lounge about on the bed!'
- 'Don't squint!'
- 'Don't stick your tongue out!'
- 'Don't get into fights!'
- 'Don't just sit there, DO something!'

Fig. 8: With this face, it seemed better to focus on the squinting eye.

■ Making

The actual construction of the book was lengthy and difficult and made me appreciate just how demanding this sort of project — which looks relatively easy — can be. Once I had finished, I tried out my story with an infant audience. The children enjoyed it but said it wasn't scary enough. My next pop-up book is to be about Dracula. Now *that* will be a challenge!



Fig. 7: Matthew wanted the whole face to spring out as well as the tongue, but modified this later so the mouth was less of a beak.

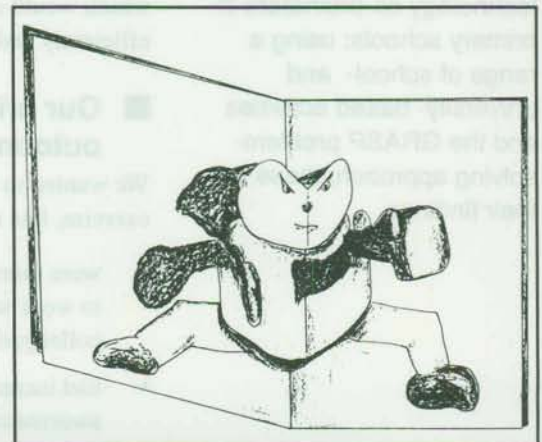
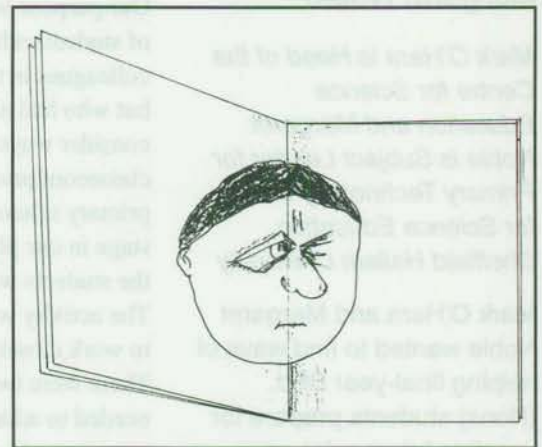


Fig. 9: Don't get into fights! This has three pop-ups: the body and the head pop up with V folds, and the arms pop up through slits in the body.