

# Implementing the new design and technology curriculum in Berkshire primary schools

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## The past

Berkshire has a long history of developing design and technology in primary schools. LEA advisers encouraged schools to introduce pre National Curriculum craft, design and technology (CDT). At this time there was a wonderful ground swell of enthusiasm as technology fairs were held across the county to promote and celebrate work produced by young children.

A small centre was established where teachers could purchase basic materials needed for CDT work. Over the years this has been developed by Dave Jones and Alan Wills into a thriving, friendly resource agency where teachers can buy materials and get expert advice. This was instrumental in getting CDT started in Berkshire primary schools.

The groundwork for technology was laid when in 1989 we started running coordinators training for the new technology

Order. A coordinators' file was produced which proved to be an invaluable guide to the orders. Large scale INSET was organised so every primary teacher in Berkshire had a morning's training on technology. We all started with an open mind and lots of enthusiasm.

When we reviewed our work we concluded that our initial training had focused too much on the process of design and technology and the cross-curricular aspects of the primary curriculum. A major review was undertaken involving many schools and classroom observation. We quickly realised that schools were not planning for progression and the general class teacher had a very hazy view of design and technology – in extreme cases teachers thought the design and technology process came through all primary subjects so they didn't have to teach any specific knowledge or skills. We found some bizarre activities going on such as *Design a rain dance* and we had to ask ourselves "is this design and technology?!"

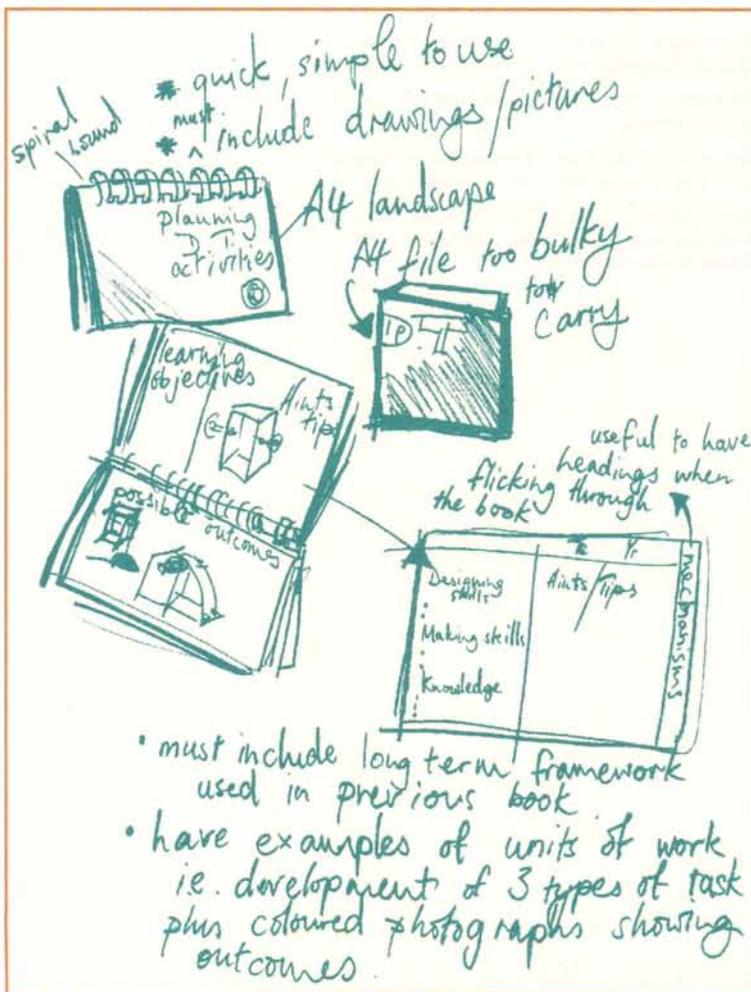
We therefore ran in service sessions on:

- planning for progression
- knowledge and basic skills
- assessment training for Key Stage 1 and 2

We also ran highly successful 15-day GEST courses, each culminating in a large display of course work and children's work. The courses were organised in conjunction with the University of Reading.

However, this training was set against a background of draft documents and overload in the primary curriculum, particularly at Key Stage 2. There seemed little point for teachers to expend time and energy in planning when the document was not in place. They had already spent hours and hours planning maths and science only to see the documents change twice. Design and technology was put on the back burner except where schools had a long history of developing design and technology or where there was still an enthusiastic coordinator.

## Draft design specification



**The present**

We decided in 1994 to write additional and more detailed support materials. Our aim was to raise the base level of design and technology in Berkshire primary schools and to help coordinators plan for balance and progression. The materials would help schools implement the revised Order.

Four of us met for an initial brainstorming meeting. We drew up a draft design specification for the booklet.

We decided that it must:

- be user friendly, quick and easy to use *(because primary teachers have got information overload)*
- be easy to carry *(A4 folders can be a pain when you want to carry them home for planning and are reminiscent of original National Curriculum orders)*
- be completed for in-service training prior to Autumn 1995

*(schools will need it for planning and implementing the new orders)*

- have drawings and pictures
- be accessible to a new coordinator with no background in design and technology but our experienced, enthusiastic coordinators need to be able to dip in at another level.

*(for these reasons we abandoned the idea of here is a set of 18 activities – do these and this is your scheme of work.)*

- be adaptable and flexible with some specific activities, and others which assume greater background knowledge
- build on previous Berkshire booklets
- **not** be a regurgitation of the National Curriculum – it must be of practical help to get design and technology up and running in the classroom – *(we want action not talk)*
- the activities must only include what is expected in the National Curriculum, however desirable we think it would be to include other aspects *(the whole point*

*Page format*

- identified learning objectives

**Activity:** Mechanical toys - using cams and cranks

**Learning objectives:**

**Design skills:**

- model ideas using temporary fixings, paper / card
- sketch ideas thinking about who will use the mechanical toy
- final drawings to include simple measurements

**Making skills:**

- use of drill / drillstand
- drilling holes off centre
- bending wire / welding rod
- possible use of corrugate or square section timber
- produce a step by step plan

**Knowledge & understanding:**

- simple mechanisms produce different types of movement - rotary movement changes to reciprocating (up and down)
- learn how mechanisms function
- vocabulary - cam, crank, follower, spindle / shaft, rotary, reciprocating

**Hints and tips**

- show how to drill a hole off-centre to make a cam
- compare with wheel and axle
- talk about changing the direction of movement

rotating → changes to → reciprocating

show the position of the cam and the follower to make more movement

making a crank

- plastic tubing with hole punched for rod
- bend rod using pliers
- welding rod
- Hoists wire

- helpful information on specific skills and techniques which can be developed into **focused tasks** or **investigative tasks**

- examples of **Design and Make Activities**. Any one of which can be selected and built into a termly or yearly plan.

**Possible Outcomes**

- encourage children to try out first ideas using boxes to hold the mechanisms
- make sure cams are secure on the axle for smooth movement
- a cotton reel or tubing may be needed if the follower is wobbling

design and make a toy

a double crank to make bobbing clams

using two cams and two levers

use clothes pegs to hold axle

use tape to make hinge

a moving boat

jumping fish

design and make a series of moving entertainments to show the story of Noah

| Unit of work  | Topic / theme:   | Activity:                      | Year                             |
|---|--|--------------------------------|----------------------------------|
| <b>Tasks and activities:</b> <ul style="list-style-type: none"> <li>Investigation tasks</li> <li>Focused practical tasks</li> <li>Design &amp; make assignment</li> </ul> | <b>Key learning objectives</b> <ul style="list-style-type: none"> <li>Design skills</li> <li>Making skills</li> <li>Knowledge &amp; understanding</li> </ul> | <b>Materials and resources</b> | <b>Links with other subjects</b> |

Unit of work: designing slippers

| Unit of work  | Topic / theme:  | Activity:  | Year  |   |
|---|---|--|---|---|
| <b>Tasks and activities:</b> <ul style="list-style-type: none"> <li>Investigation tasks                             <ul style="list-style-type: none"> <li>using slippers on display discuss how they have been constructed</li> <li>talk about suitability of slippers for different users and different purposes</li> <li>discuss comfort, appearance and use of fabrics</li> </ul> </li> <li>Focused practical tasks                             <ul style="list-style-type: none"> <li>demonstrate how to make a pattern allowing for seam allowances (1/ 1.5cms)</li> <li>show how to - pin pattern on fabric                                     <ul style="list-style-type: none"> <li>stitch right sides together</li> <li>snip curved edges</li> <li>tack wadding to fabric</li> </ul> </li> <li>explore ways of constructing a slipper with paper, pins, staples</li> </ul> </li> <li>Design &amp; make assignment                             <ul style="list-style-type: none"> <li>design a pair of slippers</li> <li>ask children to specify who will wear the slippers</li> <li>think about appropriate size, suitability, fabrics - insulating properties, feel</li> <li>sketch or model ideas using paper</li> <li>make a working drawing and pattern of chosen idea and plan of action</li> <li>evaluate finished slippers</li> </ul> </li> </ul> | Time needed<br>30 mins (approx)<br><br>30 mins (approx)<br><br>5 hrs (approx) | <b>Key learning objectives</b> <ul style="list-style-type: none"> <li>Design skills                             <ul style="list-style-type: none"> <li>modelling ideas with paper and sketching</li> <li>collecting ideas from looking at slippers</li> <li>choosing appropriate fabrics for the slippers - <i>hardwearing, warm, fleecy</i></li> <li>designing slippers for a specific person</li> </ul> </li> <li>Making skills                             <ul style="list-style-type: none"> <li>pattern cutting and construction</li> <li>sewing skills - use of running stitch, back stitch, tacking</li> <li>a simple plan to indicate steps in construction</li> <li>evaluating slippers - strengths and weaknesses</li> </ul> </li> <li>Knowledge &amp; understanding                             <ul style="list-style-type: none"> <li>pattern cutting</li> <li>reinforcing / securing seams for a quality finish</li> <li>evaluating slippers - comfort, warmth, suitability for user</li> <li>combining fabrics to create more useful properties - interfacing to stiffen fabric, wadding for insulation</li> </ul> </li> </ul> | <b>Materials and resources</b> <ul style="list-style-type: none"> <li>collection of slippers for display</li> <li>a selection of fabrics including wadding</li> <li>fabric scissors, eyelet hole punch, need and threads, cord for lacing</li> <li>beads, buttons, fasteners, velcro</li> <li>paper, grid paper</li> <li>books showing shoe construction</li> </ul> <b>Links with other subjects / themes</b> <ul style="list-style-type: none"> <li>Science - investigations of insulation properties in different fabrics</li> <li>Maths - area, measurement, investigations into relationship between height and foot size</li> <li>Ourselves</li> <li>Seasons - Winter</li> </ul> | Materials<br>Designing slippers 1 Term / Year 5/6 |

Example of work: designing slippers

*of the Dearing review was to simplify the curriculum and it is totally unhelpful for subject advisers to suggest more ideas)*

We decided on a page format which would include a section on learning objectives for the activity, i.e. "What do I want the children to learn" not "What shall we make in this topic", a section for developing practical skills and another page showing ideas which could be developed into a design and make activity (the format evolved as the work developed).

We would also include some examples of units of work showing how the activities could be developed with colour photographs of the type of work to expect from children.

In February 1995 we had a draft booklet for Key Stage 2 finally ready for the planned in-service training (we were still collating the booklets at 10.00 the night before). We asked the teachers to evaluate the book and they thought it was difficult to find specific sections, so the final version is colour coded for showing the sections on textiles, food, mechanisms, sheet materials etc.

The final booklets were ready in June and we ran the in-service training around the county. Teachers' initial reactions have been good. Coordinators have found it very useful when trying to inspire reluctant members of staff.

Where it has been very successful is where confident design and technology coordinators are adapting the materials to suit their school. They are writing units of work for each year group, backed up by photocopied pages for the relevant activity, and a short practical session has been run for the staff from the appropriate year group.

In some OFSTED inspection reports the materials have been cited as providing a good basis for the school's scheme of work.

#### **Our evaluation**

Coordinators are at very different levels and the booklet cannot take the place of good practical in-service training. Where the coordinators attended the in-service training linked with the booklets and have attended

practical workshops in the past the materials have been very successful. We are raising the profile of design and technology again.

#### *Specific weaknesses of the booklet:*

- the pages on generic design skills can be overlooked.
- the pages should be numbered (some teachers have added their own page numbers)
- perhaps there are too many ideas

#### *Strengths of the booklet:*

- teachers have found the booklet useful not only in Berkshire but throughout the country including Northern Ireland, South Africa and Holland.

We are now producing a booklet to show how good planning with clear objectives links with assessment. It will show children's work which has been developed from the activities in the first book.

#### **The future**

In Berkshire schools have access to a relatively large design and technology team. In April 1998 Berkshire will be split into six unitary authorities with a substantially reduced advisory/inspectorate service. How they will provide advice and support is unclear.

Many questions arise:

- Who will run the design and technology courses?
- Who will develop the materials to support Berkshire teachers?
- Who will run the resource agency set up with such vision in the 1980s?

What is happening in Berkshire reflects many other LEAs. Advisory teachers are under threat across the country. Without expert support and advice the future is bleak for the development and support of design and technology at local level.

#### **Acknowledgements**

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If you wish to purchase a copy of *Guidance for Planning Activities in Design and Technology (Key Stage 1 – £10, Key Stage 2 – £12 or both copies for £20)* please call 01734 773045 or 790242.