

Implementing the new orders – a whole school approach

This article outlines one school's approach to planning with the new orders, to include:

- understanding the new Order
- reviewing existing schemes of work
- identifying appropriate resources
- reviewing the existing design and technology policy

With the publication of the new National Curriculum orders in 1995, our school began the review and reorganisation of its policies and schemes of work. It was decided that design and technology should be one of the first subjects to be reviewed as it is considered to be a cornerstone in the school's cross-curricular project system – a system that all staff wanted to continue. It was felt that it was important to build upon existing design and technology work in school, recognising the good practice that was in place already. We wanted to produce a coherent programme of learning for each year group that would fit our project

approach and, at the same time, would ensure continuity and progression across each year group and key stage.

The review of design and technology began with a teacher day that was organised by the post holder. The post holder presented the structure of the new document and raised staff awareness of the nature of design and make assignments (DMAs), focused practical tasks (FPTs), and investigative, disassembly and evaluative activities (IDEAs) and how FPTs and IDEAs could support DMAs. Staff trialled some activities for themselves in a practical workshop session. Thus before any work was done on revising the programme of work for the children, a shared understanding of the new document and design and technology capability was established.

Next, the staff compared the new order with the current project cycle (*figure 1*) that was in place and considered how they could develop a cohesive scheme of work that would fit into the project cycle that already had been developed.

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Figure 1: Project cycle with history themes

Year	Autumn Term	Spring Term	Summer Term
R	Letterland	Growing	Homes
1	All About Me & What I Eat	Journeys	Splash
2	Protection	Flash, Crash Rumble & Roll	Changes
3	Me & Other Things That Grow/Me & My Clothes HU Local History School grounds/ Where We Live	A Cup of Tea/Food HU farming	Ancient Greece/On The Move HU Ancient Greece
4	Protection/Invaders HU Invaders/Settlers	Communication/Space HU Transport	Our Neighbourhood/ Travel & Tourism HU Local History Lozells
5	Structures/Bodies & Bones HU Stuarts & Tudors	Journeys & Flight HU Local History 2nd World War	Storms/Our City HU Local History Birmingham
6	Our World/Light & Colour HU Aztecs/ Explorations & Encounters	The 20th Century/ Machines & Industry HU Britain Since The 1930s	A Beneath The Surface/Ancient Egypt HU Ancient Egypt

(Key Stage 1 one project per term, Key Stage 2 two projects per term)

Figure 2

Design & Technology Focus			
Project	KS	Class	Term
Design & Make Assignments			
Focused Practical Tasks: These will support children with skills they require to do design and make assignments			
Activities to investigate, disassemble and evaluate simple products (IDEAS):			
Designing Skills:			
Making Skills:			
Knowledge & Understanding:			

The aims were:

- to establish assignments in which children could design and make quality products in meaningful contexts that could be incorporated into part of an existing project
- to map focused practical tasks and investigative, disassembly and evaluative activities onto an existing project framework to develop and practise appropriate skills and knowledge that would support design and make assignments.

To achieve these aims, we identified the following:

- the area of the curriculum in each topic which has the strongest link with design and technology
- the opportunities in the projects for evaluating existing design and technology
- the opportunities for the children to gain first hand experience
- a context to enable the children to identify and respond to particular needs and purposes
- a materials focus for each project, to ensure that each key stage developed skills using all the materials specified in the new order

- the opportunities for a range of quality outcomes in the context of the project
- children's previous experiences upon which to build
- the identification of key skills, concepts, knowledge and understanding for each project.

Discussions were carried out in key stage groups in directed time and once this important information had been identified it was possible to plan the school's new design and technology projects. A pro forma was prepared (*figure 2*) that identified all the areas that the staff felt should be included to ensure a balance coverage of the new National Curriculum. Detailed planning was then organised in phases, starting with reception, then Key Stage 1 and Key Stage 2 as it was felt that continuity and progression could be addressed more easily using this system. Key Stage 1 teachers planned their FPTs, IDEAs activities and assignments, building on the reception programme and Key Stage 2 teachers built on the skills, knowledge and understanding which had been covered on the previous two stages. Thus at each level, the materials focus, the skills and the knowledge and understanding could be built on and extended, rather than identified in

<p>R Design and make a container to put letterland cards in from reclaimed materials, exploring ways of decorating card and paper</p>	<p>Design and make seed packets, exploring tearing, cutting and joining paper and card</p>	<p>Designing and making furniture for the three bears using construction kits. Opportunities to handle, join and begin to develop ideas using range of construction kits</p>
<p>1 Design and make a sandwich for school trip/ drink for lunch time/ healthy breakfast cereal. Classifying and grouping food and exploring characteristics of food and ways in which these can be changed using simple combining, assembling and finishing techniques. Personal hygiene and safety when working with food. Assessing products by asking others.</p>	<p>Design and make a weather board for the classroom. Exploration of tearing, cutting and joining a variety of paper and card using fasteners, paper clips and glue. Using simple templates. Exploring ways of decorating paper.</p>	<p>Design and make a wheeled vehicle for Six Dinner Sid (character from a book). Opportunities to investigate simple mechanisms in everyday products. Opportunities to use simple mechanisms. Using reclaimed materials to model design ideas. Using simple finishing techniques. Cutting dowel with hacksaw for wheels, investigating wheels.</p>
<p>2 Design and make a protective bag to take books home in. Classify and group textiles, fibres and fabrics, using easily recognisable properties, investigate fibres, simple techniques to join fabrics, eg gluing, simple sewing techniques.</p>	<p>Design and make a jointed shadow puppet for a class performance. Fold, cut bend and score paper and card with increasing accuracy, use templates and stencils to mark out before cutting. Use a range of appropriate shaping & cutting techniques. Opportunities to become familiar with simple ways of joining materials to allow movement. Cutting and joining wood to move arms etc.</p>	<p>Design and make a biscuit to sell at break times to raise money for school fund. Understanding that food may need preparation, scrubbing, peeling, mixing, shaping. Understanding some foods might need cooking. Personal hygiene when cooking.</p>
<p>3 Design and make a glove puppet for a group performance to show rest of the class. Design, make and use fabrics for specific purposes, make simple patterns/templates to construct textile items. Explore a wider range of fabrics and techniques eg joining and decorating. Distinguish how well a product has been made and how well it is designed.</p>	<p>Design and make table place settings for tea tasting afternoon, coasters for cups, place settings for plates, serviettes, serviette holders. Design and make a cake to eat with tea tasting. Draw cut accurately along lines, consider properties of different types of paper, using card creatively. Explore properties of plastic, joining square section of wood, using triangles to strengthen joints (serviette holder). Choosing food for different occasions, knowing that designers of food products take account of the preferences of people.</p>	<p>Design and make a pop-up book for class Ancient Greek Museum. Investigating simple ways of using mechanisms to produce movement, eg hinges, cut away technique to let picture to pop up, cut out shapes within shapes.</p>
<p>4 Design and make a treasure box to hide valuables in. Explore a variety of structure ways of strengthening, stability, joining square section of wood, using triangles to strengthen joints, joining wood with other materials</p>	<p>Design and make a space buggy, continuing to explore a variety of structures, joining wood etc. Investigating simple electrical circuits and making switches, electrical motors and propellers to create movement</p>	<p>Design and make a brochure to advertise the local area to visitors. Investigating levers and linkages, recognising how paper and card can be combined to make them more useful for the task.</p>
<p>5 Design and make a game for younger children to teach them about the structure of the body levers and linkages to create movement, mechanisms to create movement. Use a variety of finishing techniques, planning and designing using 2D and 3D mouldable materials, cutting and shaping corrugated plastic card.</p>	<p>Design and make a weather station for the courtyard so that we can record weather over a long period of time. Investigating ways of creating models that move, ways in which structures can be strengthened, planning in 2D and 3D mouldable materials, select appropriate wood, tools and techniques to make a product, use a variety of finishing techniques</p>	<p>Design and make a kite to fly at Handsworth Park. Investigating ways of joining plastic to other materials, selecting appropriate materials and tools for task, using a variety of finishing techniques eg embroidery, dyeing, screen printing.</p>
<p>6 Design and make food for a community lunch/invited guests, planning menu, considering cultures, preparing foods in different ways, grilling, baking, boiling, microwaving etc, identifying sequence of task. Exploring climate and geographic conditions influence food production etc.</p>	<p>Design and make a paper/sweet to sell, visit related factory. Design and make machines to show rest of school all the components of a working factory. Use skills and knowledge of paper and card in designing and making, devise mechanisms to create different types of movements, gears, pulleys, levers etc. Use techniques to reinforce and strengthen structures. Using wood to make products, employing a variety of processes and finishing technique.</p>	<p>Design and make an Egyptian museum for parents' evening. Visit one first, make masks/tiles from clay, paper, shadufs etc. Children generate ideas, decide upon materials and components to use employing a variety of processes and finishing techniques</p>

Figure 3: General Outline of Design and Technology Programme

Figure 4 : Year 1
Project, Summer Term:
Journeys

Materials Focus: Reclaimed materials, construction kits, mechanisms

Time: One Term

Design and Make Assignments (DMAs)

Design and make a vehicle with working wheels that will carry "Six Dinner Sid" around his six houses each day (*Six Dinner Sid*, I Moore, Simon & Schuster) This assignment will be based around a book children will be familiar with in this topic, the journey Sid the cat makes each day to get his six meals. The vehicle will need a space for Sid to sit in. (Could supplement story, but making vehicle must have a purpose, a need).

Investigative, Disassembly and Evaluative Activities (IDEAS)

- Let children explore a range of toy cars (including duplo cars etc.), how many wheels there are and how they are fixed to the axles. Let children explore how car moves on different surfaces
- Let children explore a collection of materials that could be used for wheels, cotton reels, corks, lids etc., get them to roll them, evaluate etc.
- Let children look at vehicles other children have made (last year or another class to look at way materials are joined)

Focused Practical Tasks

- Let children join different wheels to axles, roll them along, compare performance, roll down ramp (see science)
- Let children roll different toy vehicles down ramps (see science)
- Let children make vehicles from construction kits
- Let children explore ways of joining wheels to boxes etc. paper fasteners and card loops, card triangles with holes punched (group activity make a moving vehicle for journey display vehicle to move around table map e.g. of school). Look at ways of keeping the wheels fixed
- Give children experience of using junior hacksaw and holding devices to cut a piece of dowel (group task for map vehicle)
- Let children experience cutting card and junk materials (various activities related to other project curriculum areas)

National Curriculum Programmes Of Study

Designing Skills

3a: Draw on their experience to help generate ideas

3b: Clarify ideas through discussion

3c: Develop their ideas through shaping, assembling and rearranging materials & components

Making Skills

4a: Select materials, tools and techniques

4c: Assemble, join and combine materials & components

4d: Apply simple finishing techniques

Knowledge and Understanding

5a: To use simple mechanisms, including wheels and axles, and joints to allow movement

5e: That the quality of a product depends on how well it is made and how well it meets its purpose

5g: To use appropriate vocabulary for naming and describing the equipment, materials & components they use

Using IT To support tasks

- Use a word processing package to write signs, numberplates etc. for their vehicles for Six Dinner Sid: Word 1, Caxton. Alternatively concept keyboard overlay could be produced to meet children's requirements.

isolation. *Figure 3* gives a general outline of the whole framework while *Figure 4* gives a more detailed sample of a term's project.

Once the planning had been completed, the projects were trialled in the classroom in the summer term, with the intention of developing and evaluating them as they were worked through. This will continue until next summer when the whole programme will have been completed and evaluated and if necessary changes can be made then.

To ensure that appropriate resources were available to implement the revised design and technology curriculum, staff began to review the contents of the resource room. Each year group listed their requirements and if materials were not available, they were ordered. As it was the beginning of the financial year money was available for this, and staff were encouraged that they were able to purchase essential items. All staff gave up time after school to organise the resource room where the design and technology supplies were stored. This has helped to keep the room tidy as staff now know what is available and where items need to be taken from and returned to. Resources which could not be purchased were put on a high priority list, linked to the school's development plan.

As the design and technology project framework, together with the identification of appropriate resources, was now in place, staff turned their attention to a review of the design and technology policy in order that the developments that had taken place could be reflected in it. The aims and objectives were reviewed through a brainstorming session to ensure that they took into account the new National Curriculum and the approach to its delivery that the staff had decided upon.

The next stage will be to review the school assessment framework to ensure that this links with the new planning framework. The staff are confident that few adjustments will need to be made as formative assessment is based on the identification of learning outcomes from each activity. Staff will continue to identify these for each session and record achievement on standard pro formas used for each subject.

The whole staff have been involved in the making of the policy and scheme of work; it was a combination of all their ideas and effort and they have ownership of it. Hopefully, this will ensure the continued successful implementation and evaluation of design and technology in our school.

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