

In addition I used the trial versions of the Learning Support Materials that the Nuffield Project and Longman have developed. Longman intend to produce packs for September containing copiable worksheets, student booklets and teacher's notes. Sample materials will be available at INSET sessions in the summer term and at the Education Show in March.

To provide my pupils with the necessary making skills I developed a simple Lapel Badge Project. The products are simple but pleasing and the exercise gives the pupils confidence with both tools and materials.

The scheme of work is shown in Table 1. I was able to cross-reference the activities to the Programme of study and the resources required. I was also able to use the Teacher's Guide to choose appropriate assessment methods and include these in the scheme of work as well. Both the pupils and I are pleased with the results. There is a variety of pets – dog, cat, frog, fish, shark etc. – and a range of simple mechanisms: friction drives for rotation of heads and precessing, "wagging" of tails, simple cams for opening and closing mouths. The basic frames are well constructed and the pupils have finished the toys by painting with care and attention to detail.

References

Nuffield Design and Technology materials for KS3
Longman, 1995

Working with Nuffield D&T, the beginning, 1995 –
available from DfEE

Nuffield Design and Technology Resource Task File, Longman, 1995

Nuffield Design and Technology Teacher's Guide,
Longman, 1995

Two of the toys developed from the Pet Shop Parade task

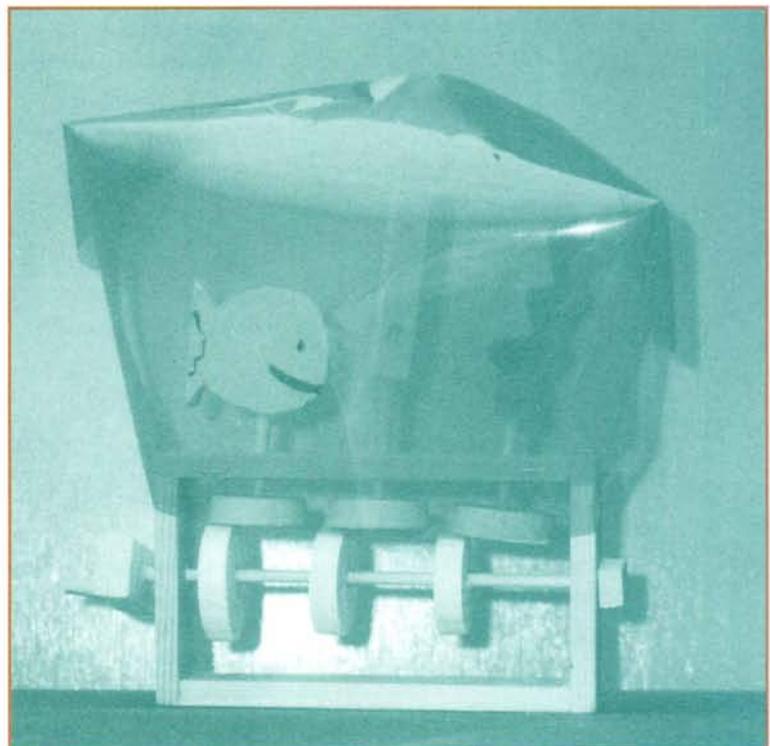
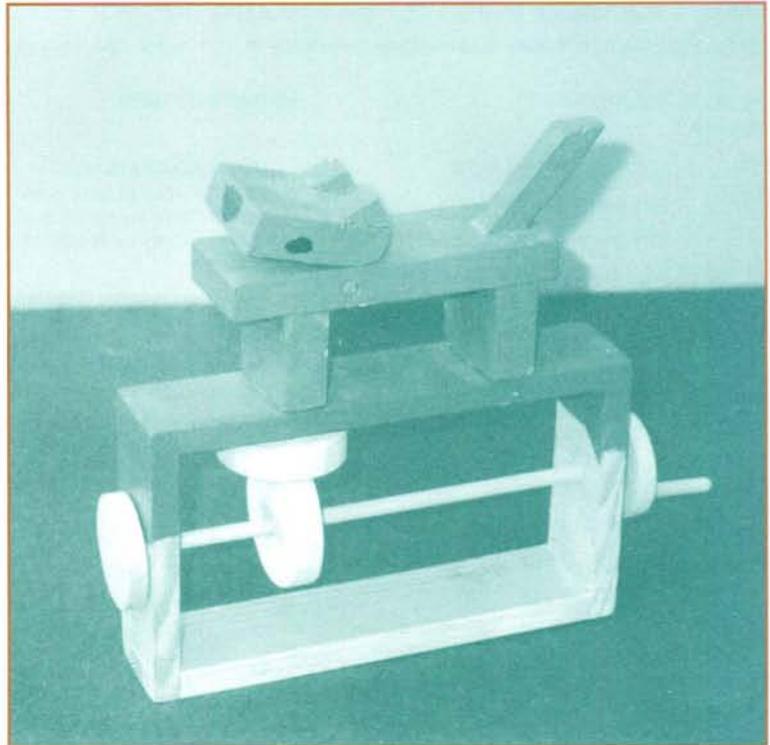


TABLE 1 SCHEME OF WORK - PET SHOP PARADE

Focus:Resistant materials and mechanisms Year 9 12 weeks - 24 lessons (70 minutes)

No of lessons	NC - POS	ACTIVITY OUTLINE	RESOURCES	ASSESSMENT METHOD
3/4	<p>INTRODUCTORY TASK</p> <p>1(a) design & make using... MDF</p> <p>3(e) generate design ideas</p> <p>3 (j) explore, develop & communicate design ideas</p> <p>4 (c) select and use appropriate methods of shaping</p> <p>4 (g) apply finishing techniques</p>	<p>– LAPEL BADGE PROJECT</p> <p>Design Brief - Design and make a lapel badge that could be sold in a shop specialising in products related to hobbies and interests</p> <ul style="list-style-type: none"> Brainstorm hobbies / interests Sketch 6 ideas Choose one design – preference research amongst peers Draw that design to size and trace ready to transfer to MDF Demonstrate / discuss painting techniques Intro to workshop routines / safety Demonstrate use of shaper saw and finishing techniques Make, paint, varnish badge Evaluate <p>Ongoing activity: Produce a poster for display in the workshops to illustrate painting techniques</p>	<p>Lapel Badge Project Paper</p> <p>3mm MDF acrylic paints pencils pencil crayons tracing paper varnish brushes</p> <p>shaper saw</p>	<p>Teacher observation plus finished product</p> <p>Annotated sketches</p> <p>simple notes</p>
1/2	<p>3(a) Identify appropriate sources of information that will help with designing</p>	<ul style="list-style-type: none"> Introduction to task How would we research design ideas Selecting recording tools Writing interview questions Write questionnaire (home work and IT lesson) 	<p>Nuffield Student's Book SRT1 Selecting recording tools SRT 2 Writing interview questions</p>	
1	<p>3(a) as above</p> <p>3(d) Consider the needs and values of intended users</p>	<p>Visit to Whitehall Garden Centre:</p> <ul style="list-style-type: none"> Develop design ideas User preference/groups 	<p>Garden Centre Worksheet</p>	<p>Teacher observation Questionnaire</p>
1	<p>3(a) and (d) as above</p>	<ul style="list-style-type: none"> Write up research Image board Sketches Results of questionnaire 	<p>Base on answering questions in worksheet</p>	<p>Image boards Annotated sketches</p>
2	<p>3(j) Develop ability to communicate ideas</p>	<ul style="list-style-type: none"> Using simple shapes as guideline Producing design ideas using simple boxed shapes for animals Drawing quick 3D views Shade drawings from last lesson 	<p>Nuffield Student's Book SRT 17 Using simple shapes and guidelines SRT 20 Drawing quick 3D views SRT 22 Making things look solid</p>	<p>Teacher observation plus drawing</p>

TABLE 1 SCHEME OF WORK - PET SHOP PARADE (continued)

Focus:Resistant materials and mechanisms Year 9 12 weeks - 24 lessons (70 minutes)

No of lessons	NC - POS	ACTIVITY OUTLINE	RESOURCES	ASSESSMENT METHOD
2	6(a) Design and use simple mechanical systems 6(b) How to interconnect mechanisms to achieve different kinds of movement	<ul style="list-style-type: none"> Look at a variety of ways of changing movement using models Extension mechanism flick book Using cams and eccentrics to model movement 	Nuffield Student's Book MRT 1 Changing types of movement Lego models & cam box MRT 5 Mechanism flick books Crank, link & lever based on SRT 25 Modelling movement Cam models	Sketches and simple notes Teacher observation
3	4(a) Use range of processes 4(b) Select tools & equipment appropriate to task 4(c) join and combine materials in temporary and permanent ways	constructing box, axle, holding piece	Jelutong Softwood 4mm dowel	Teacher observation Finished box
1	3(c) develop a specification for their product	Write a design specification Generate spider diagrams Write specification Discuss how research will affect design ideas	Nuffield Student's Book p.38-39 SRT 10 Specifying products – Learning support Booklet 1	Written specification
2	3(j) Consider function aesthetics, safety, reliability of their design 3(g) Take account of properties and materials when deciding when & how to use them 3(j) explore, develop and communicate design ideas by modelling ideas in a variety of ways	Draw four design ideas Choose one, giving reason for choice <ul style="list-style-type: none"> Sketch design ideas Annotate Discuss with a response partner which best fits this design Choose one and give reasons for choice Test mechanisms by modelling with eccentrics, cams and wheels 	Research Image Board A3 paper Pencils Pencil crayons	Teacher observation Annotated sketches
2	3(e) generate design proposals that match criteria 3(k) develop a clear idea of what has to be done and propose an outline plan 4(i) develop an outline plan to include materials	<ol style="list-style-type: none"> Present formal design idea – carefully annotated Produce a step-by-step plan that identifies the main stages in making <ul style="list-style-type: none"> Use small squares of paper to write tasks to be done, order and stick them onto a large piece Write a list of materials required, stating sizes (Extension activity – cost items) 	A3 paper Small squares of paper to plan	Annotated sketches Working plan Materials list Teacher observation
4	4(a) Use a range of processes to shape and form 4(b) Select tools and equip appropriate to task 4(g) Apply finishing techniques suitable to materials	Using box as a base – make the design making changes as necessary	Jelutong 4mm dowel Range of pre-cut circles to use as eccentrics or cams Acrylic paint Brushes	Teacher observation Finished product
1	4(j) Evaluate products as they develop including testing performance against specified criteria	Evaluate the product Does it meet the specification What changes did you make along the way What changes would you make if you had to do it again Evaluation of own performance	Finished design Evaluating design – Learning support Booklet 5 Paper	Discussion Finished evaluation