'A suggested framework for curriculum planning KS1 and KS2': a planning tool for Birmingham schools

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CURRICULUM DEVELOPMENT

The City of Birmingham has currently two separate yet linked services to support its Key Stage 1 and Key Stage 2 teachers of design and technology – the Schools Advisory Service (SAS), and the Curriculum Support Service (CSS).

It became clear to the three members of the design and technology support team that unless it encouraged all its schools to develop a whole key stage curriculum plan/scheme of work for the delivery of design and technology which reflected all aspects of the National Curriculum Order, and was progressive, this foundation subject would remain difficult to move forward for some schools.

"I am worried and frustrated by this subject!"

"I don't know what I'm doing in D&T"

"I need training in D&T to help me with policy planning."

"I've never used this equipment before."

"Just tell me what to do and I'll do my best!"

"What mechanisms should they experience?"

"How many DMAs should they do in KS1?"

There are many hundreds of very capable and willing colleagues in Birmingham schools, some of whom are frustrated by their own inexperience in planning for the delivery of design and technology as it is defined in the National Curriculum Order. To support these colleagues the SAS and CSS have worked together to produce a long term planning chart "A Suggested Framework for Curriculum Planning KS1 and KS2", two copies of which have been sent to all Birmingham's nursery, infant and junior schools. One is to be displayed for whole staff reference, the other is for the design and technology coordinator to fold or cut for ease of use with colleagues.

Three evening meetings held in different venues across the city allowed for explanation, questions and discussion about the content and intended purpose of the 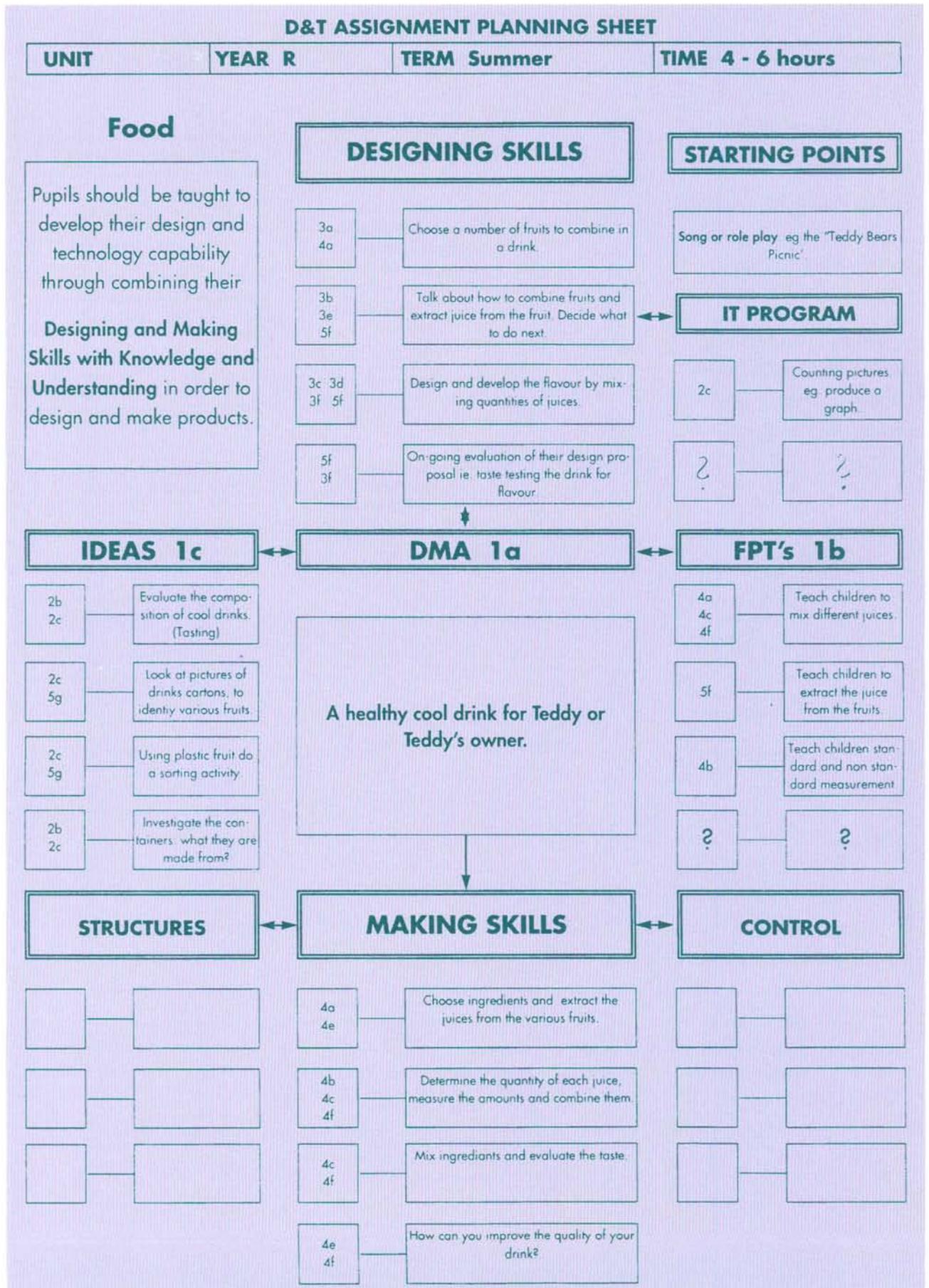chart. They provided an opportunity for teachers to understand that it was never the team's intention to provide a prescription for Key Stage 1 and Key Stage 2 design and technology, but to provide guidance via the use of examples. This guidance is to help colleagues to see how they could plan for the production of successful designing and making assignments (DMAs), which incorporate aspects of the National Curriculum Order such as materials and components, mechanical/electrical control etc. The examples provided here are taken directly from the chart where sample DMAs are accompanied by appropriate focused practical tasks (FPTs) and investigative, dissassembly and evaluative activities (IDEAs). Relevant IT programs are suggested to help pupils resolve the DMAs, together with advice on Health and Safety issues, technological vocabulary, and quality in design and technology work.

The chart is only part of the supporting materials provided by the City. Birmingham's Primary Planning Project provided a further opportunity to produce additional support materials which include guidance on, for example, the formation of a policy, action planning for the development of design and technology and medium and short term planning. The medium and short term plans illustrated in the Birmingham Primary Planning Project booklet are linked directly to the DMAs illustrated in the chart.

Three examples of design and technology assignment planning sheets are provided for medium term planning, one from each material area. They are not comprehensive but do provide a baseline from which colleagues can plan progressive DMAs linked to the content of the programmes of study.

D&T ASSIGNMENT PLANNING SHEET

UNIT	YEAR R	TERM Summer	TIME 4 - 6 hours

Food

Pupils should be taught to develop their design and technology capability through combining their

Designing and Making Skills with Knowledge and Understanding in order to design and make products.

DESIGNING SKILLS

3a 4a	Choose a number of fruits to combine in a drink.
3b 3e 5f	Talk about how to combine fruits and extract juice from the fruit. Decide what to do next.
3c 3d 3f 5f	Design and develop the flavour by mixing quantities of juices.
5f 3f	On-going evaluation of their design proposal ie. taste testing the drink for flavour.

STARTING POINTS

Song or role play eg the "Teddy Bears Picnic".

IT PROGRAM

2c	Counting pictures eg. produce a graph.
?	?

IDEAS 1c

2b 2c	Evaluate the composition of cool drinks. (Tasting)
2c 5g	Look at pictures of drinks cartons, to identify various fruits.
2c 5g	Using plastic fruit do a sorting activity.
2b 2c	Investigate the containers: what they are made from?

DMA 1a

A healthy cool drink for Teddy or Teddy's owner.

FPT's 1b

4a 4c 4f	Teach children to mix different juices.
5f	Teach children to extract the juice from the fruits.
4b	Teach children standard and non standard measurement
?	?

STRUCTURES

MAKING SKILLS

4a 4e	Choose ingredients and extract the juices from the various fruits.
4b 4c 4f	Determine the quantity of each juice, measure the amounts and combine them.
4c 4f	Mix ingredients and evaluate the taste.
4e 4f	How can you improve the quality of your drink?

CONTROL

CURRICULUM DEVELOPMENT

D&T ASSIGNMENT PLANNING SHEET

UNIT	YEAR 3	TERM Summer	TIME 15 hours

Textiles

Pupils should be taught to develop their design and technology capability through combining their

Designing and Making Skills with Knowledge and Understanding in order to design and make products.

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DESIGNING SKILLS

3b 3c	Which ways will children generate and clarify their ideas? eg freehand drawing.
3b 3c	Make paper mock-ups of the intended outcomes.
3d 5a 5h	How will you make sure your hat looks good, fits you and keeps your head cool?
3f	Produce a step by step sequence of actions.

STARTING POINTS

Science topic - 'hot and cold'

IT PROGRAM

| 2c | Paint brush/paint spa: eg. design a logo for the hat. |
| ? | ? |

IDEAS 1c ↔ DMA 1a ↔ FPT's 1b

3a	Look at hats and materials. eg are they appropriate?
3c	Look at hats to identify the shapes of component parts.
3f 3g	Look at how component parts are assembled.
5a	Investigate the materials required for your hat.

Design and make a hat with a brim to act as a shade.

4b	Cut out the component parts in paper
4c	Explore ways of joining and assembling them.
4c	Teach children how to join textile materials. eg. stitching.
?	?

STRUCTURES ↔ MAKING SKILLS ↔ CONTROL

5e 5b	Reinforcing textiles eg. the brim/peak of the hat.
?	?
?	?

4a 4b	Choose equipment, tools and materials and measure, mark out and cut their textile materials.
4c	Use temporary and permanent fixings when making the hats.
4f	Test and evaluate the hat to see if it is fit for purpose. eg. adjustable.
4g	Following evaluation improve the hat as necessary.

D&T ASSIGNMENT PLANNING SHEET

UNIT	YEAR 6	TERM Autumn	TIME 15 hours

Resistant Materials

Pupils should be taught to develop their design and technology capability through combining their

Designing and Making Skills with Knowledge and Understanding in order to design and make products.

DESIGNING SKILLS

3b / 3e	Which techniques are appropriate to generate ideas for this task? eg. Two point perspective.
3g	What methods will be used to evaluate ideas as they develop?
3g / 5h / 5i	What will you do to ensure that the ride is well designed and effective? eg. Design in 3D using a construction kit.
?	?

STARTING POINTS

Investigation - of fairground machinery.

IT PROGRAM

| 5f | 'I control': eg. use electricity file. |
| 5d | 'Logo' eg. control switching circuits for lights & motors. |

IDEAS 1c ↔ DMA 1a ↔ FPT's 1b

3a	Investigate, disassemble and evaluate toys with simple gearing.
5f	Draw, photograph mechanical components and structures.
5g	Investigate gearing on a bicycle, hand whisk/drill, or clock.
3a	Look at pictures of fairground machinery.

DMA 1a

Design and make a fairground ride eg. ferris wheel/simple carousel. The speed must be controlled by simple gearing.

5c	Make a frame using 4 strips of card, stop it collapsing.
5e	Devise ways of preventing the structure collapsing.
4c	Practice making mechanical components: eg. gears.
4c	Practice soldering joints.

STRUCTURES ↔ MAKING SKILLS ↔ CONTROL

5b	How will you design the structure so it is strong enough?
5e	How will you test the structure?
4f	What methods will you use to evaluate the structure?

4a	Which materials tools and techniques will be used to make gears that will work well?
4b / 4c / 5h	What degree of accuracy is needed when making this product?
4d	Which finishing techniques will be used to enhance this product? How will they be applied?
4e	How will you organise the stages of making?

| 5c | How will you control this ride so that it starts, stops, pauses, and travels forward and reverse? |
| 5d | What electrical control systems will be built into this DMA? |

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