



Uplands Junior School

Design & Technology Policy 2019-2020

Our school policies reflect commitment to an inclusive, creative and exciting curriculum, based around high quality teaching and learning. All children and young people at Uplands Junior School are entitled to learn in a safe and supportive environment. As part of our goal to become a 'Rights-respecting School' and further embed the 'Respect for All' ethos in school, this policy has been written in line with the UN Convention on the Rights of the Child. We acknowledge the following articles: 12 (respect for the views of the child), 13 (freedom of thoughts and opinions), 23 (children with disabilities), 28 (right to education) and 29 (goals of education).

Introduction

This document is a statement of the aims, principles and strategies for teaching and learning of Design and Technology at Uplands Junior School.

Intent

Design and Technology is an inspiring, rigorous and practical subject. Pupils use creativity and imagination; they design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.

They acquire a broad range of subject knowledge and use cross curricular skills from mathematics, science, computing and art.

Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Aim

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.



Practical experiences, at the heart of this subject, need to foster positive attitudes towards overcoming problems, working collaboratively and developing a flexibility of approach. The subject serves to reinforce the notion that we do not always work towards pre-ordained solutions.

Learning Objectives

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the attainment targets.

Key Stage 2

Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make

- select from and use a wider range of tools and equipment to perform practical tasks
- select and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products
- understand and use electrical systems in their products
- apply their understanding of computing to program, monitor and control their products

Cooking and nutrition

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed



Implementation

Teaching methods to achieve the aims and objectives of this document will vary according to the classroom situation and the work planned by individual teachers. However the following points will help to achieve common themes and quality outcomes:

- Design & technology should be taught in the context of current topics and themes in the classroom. It should possess tangible and evident cross-curricular links to other subjects.
- Progression and continuity should be sustained by regular consolidation of previously taught skills and knowledge. The acquisition of new ones will then be a smoother process.
- Design and Making Tasks should serve to reinforce collaborative work in group sizes that allow a challenging and appropriate division of labour.
- All pupils should have equal opportunities to access the curriculum irrespective of race or gender. Provision should be made for pupils with SEN to be provided with appropriately challenging tasks to develop their D&T capability.

The types of activities that take place should broadly fall into one of the following categories. Over a year there should be a balanced blend of all three:

FOCUSSED SKILLS TASKS - a highly structured session, working towards a predetermined outcome with a particular focus on acquiring knowledge or skills to secure a specialised capability in D&T.

DESIGN TASKS - these facilitate a freer design & make experience; pupils have the opportunity to explore their creative potential by applying their existing skills.

INVESTIGATION TASKS - pupils evaluate and assess the advantages and disadvantages of a range of other products in terms of their design elements. This could be achieved through observation, handling, testing and disassembly.

Classroom Organisation

Time allocated may vary from week to week and term to term. Teachers may prefer to structure their coverage in blocked or modular termly units of work, rather than in an allocated weekly timetabled 'slot'.

Group sizes should be determined by teachers according to the nature of the activity. A project may be broken down into a series of activities that may



require different group sizes at different stages. Whole class teaching could be used to introduce new topics / projects.

Classroom assistance may be sought from non-teaching staff within the school; students / trainees, governors or parents could also be used to facilitate D&T tasks in a supervisory capacity. Subject specialists with particular expertise can also be invited into to school to enhance a theme / objective.

Resources

Some resources are stored in dedicated year group areas

The coordinator stores some tools and specific pieces of equipment that need to be kept securely.

Impact

Pupils' achievements can be assessed in a variety of ways. These include direct observation, discussion and questioning of pupils as well as by evaluation of the finished product itself.

Teachers should collect evidence of individual, group or class work for assessment purposes, chosen from the following formats: Pupils' annotated sketches / plans / drawings; photos / videos of pupils 'at work'; specific assessment assignments to evaluate a particular capability; photos / videos of part or completely finished work (products); children's own written / verbal evaluations of their tasks / activities; appraisal / evaluation of the finished article.

These types of records can be used to accumulate a snapshot of current D&T practice within the subject portfolio for the whole school.

Some evidence of attainment in D&T should be recorded. An annual report of the child's attainment and effort in D&T is to be included the Parent's Report issued in the summer term.

Displays of work will serve to reinforce and celebrate success in D&T activities.

Health & Safety

Whilst Health and Safety considerations & risk assessment remain the primary responsibility of the teacher in charge, the children should be taught to:

- Reduce risks through responsible behaviour and use good practice to avoid hazardous situations developing.
- Abide by simple safety rules when using tools or equipment.
- Consider and recognise hazards in their proposed ways of working, and take action to minimise them.
- Assess the risk of hurt or damage posed by evaluating their own and other designer's products and suggest remedial action.



- Store tools and materials with due regard, and organise their working environment /practices in a safe way.

Areas for special concern include;

- **The use of hot-melt glue guns - these are not for pupil use.**
- Food Technology lessons require that hygiene is given the utmost priority. Activities involving the use of cookers / ovens require a high level of supervision with appropriate safety / protective clothing being available.
- Fabric work that involves scissors, sharp cutting tools, pins and needles requires careful resource management. Children should be taught simple storage strategies for dealing with sharp objects that are 'not in use'.
- Contact with foodstuffs and other materials likely to cause allergic reactions should be avoided.

The Role of the Co-ordinator

- To take the lead in policy development and be responsible for schemes of work that ensures progression and continuity in D&T throughout the school.
- To support colleagues.
- To suggest assessment and record keeping strategies.
- To oversee the resource needs of the subject and introduce teachers to new and appropriate materials & equipment as they become available.
- To monitor progress in D&T and advise the Head teacher on any action to take or areas to develop.
- To disseminate information to colleagues regarding up to date D&T curricular developments in accordance with national & local guidelines.
- To report back to staff and advise on INSET and other professional development opportunities.

SEN Inclusion

Pupils with Special Educational Needs receive support from their class teacher to undertake appropriate tasks / projects matched to their needs and ability.

All pupils will generally work in mixed ability groups, with individuals making a valued contribution to the overall process. This promotes self-reliance, self-esteem and a collaborative attitude. Pupils with learning difficulties who may need support with literacy and numeracy may well exhibit well-developed dextrous and practical skills, and should be provided with appropriate opportunities to develop their potential.



Opportunities should be provided for pupils to communicate their ideas other than through writing or drawing. Help in realising their ideas into drawings or models could be achieved through means of a facilitator.

Pupils who possess physical difficulties in manipulating materials or tools may need specific support to help develop their skills into tangible experiences. Processes should be adapted to suit pupils with limited dexterity.

Pupils with physical disabilities should be given opportunities to use multi-sensory approaches to gain understanding about different products and to use this information to generate ideas.

Able pupils who demonstrate a high ability level should be presented with increasingly challenging assignments within the context or theme of the whole-class project.

ICT Support for D&T

D&T assignments should provide pupils with opportunities to enhance their learning through incorporating the use of ICT.

ICT can support D&T activities in some of the following ways;

- By enhancing skills in designing and making - e.g. through the use of paint/draw/CAD/CAM software
- By providing a range of information sources for research & background knowledge - e.g. through CD-ROMs databases, internet
- By providing access to source of visual material / images for inclusion in research - e.g. through CD-ROMs, databases, internet
- By aiding the presentation of a completed project - e.g. through use of word-processed text or Digital Photography (annotations, instructions, packaging, evaluations etc.)
- By collecting and interpreting data collected during a project - e.g. through using a questionnaire on a database or displaying findings on a spreadsheet



- By employing Control Technology devices to help gain understanding of sequencing & control systems.
- By demonstrating how the latest technology is incorporated in commercial D&T processes and thus impacts on our everyday lives - e.g. through transmitting design information electronically via CD-ROM's & email, and through use of CAD/CAM and Control devices.

Useful websites that support D&T;

General;

British Educational Communications & Technology Agency www.becta.org.uk

Design and Technology Association www.data.org.uk

www.designmuseum.org

www.24hourmuseum.org

www.museumfortextiles.on.ca

www.designandtech.com

www.dtonline.org

www.technology.org.uk

www.howstuffworks.com

www.kented.org.uk/ngfl/websites/tech.html

www.3Dmodelworks.com

Food;

www.food.gov.uk

www.milk.co.uk

www.foodafactoflife.org.uk

www.birdseye.com

www.foodandhealth.com

Mechanisms;

www.cabaret.co.uk

www.flying-pig.co.uk

www.sagecraft.com/puppetry

Misc.;

Centre for Alternative Technology: www.cat.org

www.kidsdomain.com/craft/