



Department
for Education

Design and technology

Programmes of study for Key Stages 1-3

February 2013

Contents

Purpose of study	3
Aims	3
Attainment targets	3
Subject content	4
Introduction	4
Key Stage 1	5
Key Stage 2	6
Key Stage 3	7

Purpose of study

Through creativity and innovation, design and technology continue to shape our lives. Using an activity-focused approach, a high-quality design and technology education should give pupils opportunities to create, innovate, design, make and evaluate a variety of well-crafted products. Pupils should be taught the technical skills and craftsmanship to execute practical tasks, thereby developing confidence in using these skills.

Aims

The National Curriculum for design and technology aims to ensure that all pupils:

- understand food and nutrition and have opportunities to learn to cook. In meeting this aim schools without access to a teaching kitchen, nearby kitchen or mobile kitchen may have to adapt what they teach accordingly to the facilities available.

It also aims to ensure that, working in fields such as materials (including textiles), horticulture, electricals and electronics, construction, and mechanics, they:

- develop valuable practical skills and use these safely with a range of resistant and non-resistant materials, drawing media, tools and equipment, in both 2-D and 3-D
- design and make well-crafted products that are fit for purpose
- develop and use a range of common practical skills, in contexts such as mechanical, diagnostic and repair tasks
- understand and, where appropriate, use the design cycle of planning, developing prototypes, modifying, making and evaluating
- know about good design, everyday products and use correct technical terminology
- investigate the rich history of design and technological innovation in Britain and further afield, from the Industrial Revolution onwards, as well as current innovations.

Attainment targets

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

Subject content

Introduction

In Key Stages 1 to 3 pupils should be taught progressively more demanding practical knowledge, skills and crafts, working in fields such as:

- food and cookery: to learn about food and plan and prepare healthy, wholesome dishes, following straightforward recipes and using a range of common ingredients and techniques. In meeting this requirement schools without access to a teaching kitchen, nearby kitchen or mobile kitchen may have to adapt the recipes and techniques they teach accordingly to the facilities available.
- materials: to plan, design, make and evaluate decorative and/or practical objects, using a range of common materials such as wood, metal, plastic and card (see also *textiles*, below)
- textiles: to plan, design, make, repair and evaluate decorative and/or practical objects, using a range of textiles and employing common techniques such as sewing, embroidery and knitting
- horticulture: to cultivate plants for practical purposes, such as for food or for decorative displays
- electricals and electronics: to carry out common diagnostic, maintenance and repair tasks on electrical and electronic appliances, and plan, design, make and evaluate simple electrical or electronic devices
- construction: to carry out common diagnostic, maintenance and repair tasks and use simple techniques in building and construction
- mechanics: to undertake common diagnostic and maintenance tasks on mechanical objects such as bicycles and motor vehicles.

Pupils should always be taught to work safely, using common tools and techniques that are appropriate for the task.

Key Stage 1

Pupils should explore and develop purposeful, practical skills in design and technology, taking advantage of local opportunities and the expertise of teachers.

Pupils should be taught the basic principles of balanced eating and where food comes from, and should be encouraged to develop an interest in cooking.

Through working in fields selected from those listed in the introduction (materials (including textiles), horticulture, electricals and electronics, construction, and mechanics), pupils should be taught to:

- perform simple, useful, practical tasks (for instance, making products for a purpose using a basic range of tools and materials, and techniques such as cutting, forming and joining)
- explore different materials, and become familiar with their properties and uses
- communicate ideas simply, such as through drawing, jottings, modelling in 2-D and 3-D and, where appropriate, using information and communication technology to record the development of their designs
- appreciate the need for good design by evaluating a range of design and designers.

Key Stage 2

Pupils should develop their skills and the safe use of tools and equipment by undertaking a range of practical tasks, such as making products, maintenance or cooking. They should increase their experience in different areas of design and technology, including through learning about local crafts or industries. They should understand how to use constructive feedback to improve what they design and make. Pupils should be taught about key historical developments in design and technology.

Pupils should be taught about the major components of a balanced diet and how ingredients can be combined to prepare healthy meals. They should be taught basic cooking techniques and how to cook a variety of savoury dishes. In meeting these requirements, schools without access to a teaching kitchen, nearby kitchen or mobile kitchen may have to adapt the dishes and techniques they teach accordingly to the facilities available.

Through working in fields selected from those listed in the introduction (materials (including textiles), horticulture, electricals and electronics, construction, and mechanics), pupils should be taught to:

- use safely and increasingly effectively a wider range of tools, equipment and materials with increasing skill to make products that are fit for purpose
- develop and use straightforward practical, maintenance and repair skills
- extend their skills to communicate their ideas visually in 2-D and 3-D, including through using information and communication technology
- use constructive comments from others to improve their work
- understand key events and turning points in design and technology, such as the Industrial Revolution, and how they have shaped the world we live in.

Key Stage 3

Pupils should be able to select and use complex tools, equipment, machinery and techniques skilfully to develop well-conceived and well-executed practical solutions. They should explore materials and technological developments, and experiment with using them. They should develop sophisticated practical skills and carry out diagnostic, repair and maintenance tasks in a range of contexts. Pupils should be given the opportunity to work in emerging areas of design and technology, such as food design, design for disability, and age-related design. They should be taught how to use historical and contextual references to influence and improve their work.

Pupils should be taught about the importance of nutrition, a balanced diet, and about the characteristics of a broad range of ingredients in choosing and preparing food. They should be encouraged to develop a love of cooking. They should be taught to cook a repertoire of savoury meals and become confident in a range of cooking techniques. In meeting these requirements, schools without access to a teaching kitchen, nearby kitchen or mobile kitchen may have to adapt the repertoire and techniques they teach accordingly to the facilities available.

Through working in fields selected from those listed in the introduction (materials (including textiles), horticulture, electricals and electronics, construction, and mechanics), pupils should be taught to:

- increase their skills, knowledge and competence in using materials, machinery, techniques and processes
- plan, design, make and evaluate a range of quality products, in a variety of materials, that are fit for purpose
- complete common practical, diagnostic, repair and maintenance tasks and multi-stage processes
- communicate their ideas and designs skilfully and accurately in 2-D and 3-D, using a variety of techniques, including information and communication technology
- analyse the work of others, including iconic designs, to inform their own work
- understand developments in design and technology and the responsibilities of designers, including environmental responsibilities.



Department
for Education

© Crown copyright 2013

You may re-use this information (excluding logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence or e-mail: psi@nationalarchives.gsi.gov.uk.

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

Any enquiries regarding this publication should be sent to us at www.education.gov.uk/contactus.

This document is also available from our website at www.education.gov.uk/nationalcurriculum.