



# *So what is... Design and technology?*

Staff meeting

How confident are you that you are teaching each aspect of the Design and technology National curriculum with the rigour it requires to develop all the necessary knowledge, skills, and understanding?

## *The Design and technology National curriculum:*

- The Design and technology National curriculum outlines the three main stages of the design process: **Design, make** and **evaluate**.
- Each stage of the design process is underpinned by **technical knowledge**, which encompasses each key area's contextual, historical, and technical understanding.
- Cooking and nutrition has a dedicated section, focusing on specific principles, skills and techniques in food, including where food comes from, diet and seasonality.

# Key areas in the D&T National curriculum:

If we were to break down the D&T National curriculum into the key technical areas that are outlined to deliver, they would be:

## Key stage 1 and 2

### Cooking and nutrition

balanced diet, preparation and cooking skills. Kitchen hygiene and safety. Following recipes.



### Mechanisms/ Mechanical systems

using mechanisms such as cams, followers, levers and sliders.



### Structures

aesthetic properties, strength and stability, stiffen and reinforce structures.



### Textiles

and functional fabric techniques including cross stitch, blanket stitch and appliqué.



## Key stage 2 only

### Electrical systems

circuit components, circuit diagrams and symbols, combined to create various electrical products.



### Programming products

and control, develop designs and virtual models using 2D and 3D CAD software.



# The Design process

## Evaluate

- ★ Explore existing products.
- ★ Evaluate against a list of design criteria.
- ★ Evaluate, investigate and analyse existing products.
- ★ Evaluate their own and others' ideas.
- ★ Understand how key events and individuals have helped to shape the world of D&T.
- ★ Consider feedback to make improvements.

Technical  
knowledge

## Design

- ★ Research
- ★ Design criteria (e.g. tailoring to an audience/user).
- ★ Idea generation (e.g. annotated sketches).
- ★ Idea development (e.g. templates, pattern pieces.).
- ★ Models and prototypes (both virtual and physical).
- ★ Cross-sectional and exploded diagrams.
- ★ Innovative, fit-for-purpose and functional product solutions to design problems.

## Make

- ★ Select and use appropriate tools and equipment.
- ★ Understand and select materials and components (including ingredients) based on their aesthetic and functional properties.
- ★ Carry out practical tasks with increasing accuracy and precision.
- ★ Understand the importance of, and follow the health and safety rules.



# *The Design process*

- **Cooking and nutrition:**

Food units can still follow the design process summarised in slide 5, for example, by tasking the pupils to develop recipes for a specific set of requirements (design criteria) and to suggest methods of packaging the food product, including the nutritional information.

- **Approach the design cycle at different points:**

The design process does not need to begin at 'Design'; it could start at the 'Make' or 'Evaluate' stage.

For example, starting at the 'Evaluate' stage, pupils could explore and analyse various existing products with the same purpose before using their discoveries to inform the design of a new and improved product.

## *Key benefits of D&T*

Design and technology has a range of direct and indirect benefits for pupils, here's eight of our favourite:

- ★ Pupils are introduced to a wide range of specialisms such as electrical systems, mechanisms, programmable devices, materials (e.g. woodwork, textiles), structures, cooking and nutrition that can support not only their everyday lives but also their future career prospects.
- ★ Allows pupils to apply knowledge from other disciplines in a practical context such as measuring and marking out accurately (maths).
- ★ Pupils are able to think critically about existing or new products to solve real problems and apply their knowledge to develop imaginative, functional solutions.

## *Key benefits of D&T*

- ★ Pupils learn how to take risks and become resourceful, innovative, enterprising and capable citizens - [D&T National Curriculum \[Purpose of study\]](#)
- ★ Pupils will evaluate their projects at different stages, and that of others, and in-turn this process will support them to become reflective learners.
- ★ Gives pupils opportunities to consider others, by developing a product to meet another individual or groups' wants and needs.
- ★ High-quality Design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation. - [D&T National Curriculum \[Purpose of study\]](#)
- ★ Develops an awareness of the factors that are contributing to problems the planet faces such as plastic pollution.



## *A few common misconceptions:*

- It is the same as or very similar to Art and design.
- It is about the end-product for the children to take home.
- A finished product is the key outcome or main goal of a Design and technology project.

## *Clarification:*

- Design and technology has strong connections to a variety of subjects, for example, Science (e.g. circuits, material properties, mechanisms) and Computing (e.g. programmable products).
- A key benefit of Design and technology is to consider the needs of other individuals and groups to solve real-world problems. Why not start a class photo gallery that celebrates all stages of the design cycle (design, make, evaluate and the knowledge that underpins it all).
- The journey from the very beginning of the project to the end will encompass various opportunities for children to demonstrate their knowledge and skills - this is sometimes not reflected in the final product. As with many practical techniques they can take time to master, pupils may already fully understand their purpose even if they cannot execute them properly yet.

## *Lacking staff confidence?*

Here are a few ways you can tackle low confidence in staff when delivering Design and technology:

- ★ Use staff meetings to design and make a planned pupil product.
  - This will support you in recognising potential pitfalls before your class experience them.
  - You will also feel in a better position to challenge and support changes at the design and make stages.
- ★ Co-teach more than one class and take it in turn to host the lessons.
  - This also presents the opportunity to demonstrate to the class how different an outcome can be between two different sets of ideas, and lessens the chance of fixation from using just one example.

# *Access resources for free*

- Click here for a [Design and technology subject leader toolkit](#).
- Click here to start [your free 7-day trial](#).
- Join our [Facebook community group](#) for ideas, support and inspiration.



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