

Design and Technology Intent

At its heart, our Design and Technology (D&T) curriculum aims to equip children with a creative, technical and practical understanding of an effective production process. As our children progress through the school, they will develop the skills and technical knowledge to refine designs, assessing their products against key criteria set out in the design brief. Children also draw upon other areas of the curriculum such as science, maths, computing and art, making crucial links to further improve their products. Step by step we aim to improve.

Aims

Aim 1

We aim to equip our children with the technical knowledge to create effective products with a clear purpose, following a clear **Design, Make, and Evaluate** format. The progression of this knowledge is carefully planned within a cyclic, year A and B structure, to allow children in KS2 to retrieve and build on the firm understandings developed in reception and KS1.

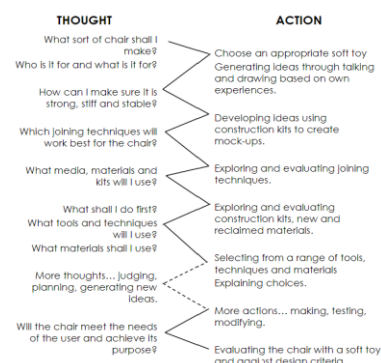
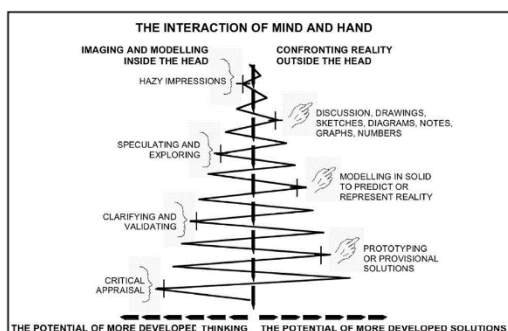
Aim 2

Within our D&T sessions, we aim to provide a wide variety of first-hand experiences, with a range of materials and tools, as well as conduct a vigorous and iterative design process. By clarifying the task and developing children’s competence within our D&T curriculum, we aim to pass control of the process to the children. Hereby encouraging them to become resourceful, innovative and enterprising risk takers. Communicating their ideas through technical talk as well as demonstrating their ideas with diagrams allows the children to experience the production process as it would be in a real-world situation.

Aim 3

We aim to give children experience in investigating and evaluating the designs and products of others, both past and present. In doing so our children develop further understanding of how D&T plays a role in daily life and the wider world. As a result, this provides our children with the capability to incorporate the ideas they have collected and utilise them as inspiration and inform future projects of their own.

To meet these aims our D&T curriculum is taught, for the majority, during Wild Tribe with termly and half-termly project focuses. Teaching in this way allows us the space and facilities to create ‘wow outcomes’ that children truly feel a sense of pride in creating and broadens the opportunities in the scale and fashion of the outcomes possible.



Figures 1 & 2 The iterative design process, The D&T association.

The Process

The children participate in 3 overarching actions as part of each project. With each cycle of development, an iterative design methodology is employed. Based on this cyclic process, the children continuously design, make, evaluate and redesign, all the time refining their products or processes.

Design

At this point in the process children design purposeful, functional and appealing products based on their own needs and the needs of others, based on specific design criteria. These ideas are developed, modelled and communicated through talking, mock-ups and drawings, done both by hand or where appropriate, in CAD software.

Make

When making, our children select the appropriate tools and equipment to complete their designs using hands-on skills such as cutting, joining, shaping and finishing. The children also carefully select the correct materials according to their characteristics, ensuring they are fit for their purpose. This provides experience in using construction and electronic materials, textiles, and ingredients.

Evaluate

The children will then investigate and evaluate pre-existing designs against the specific design briefs and success criteria they developed, considering how it meets the needs of the user. With this understanding, the children are able to further progress their designs and products in an informed way.

Design and Technology Progression within Holsworthy Primary school

Our D&T curriculum of progression is designed to fulfil children's learning. The progression of the knowledge is as follows.

KS1
<ul style="list-style-type: none">• Building structures – Exploring strength, stiffness and stability within simple shell and frame structures.
<ul style="list-style-type: none">• Exploring mechanisms – Including levers, sliders, wheels and axles.
<ul style="list-style-type: none">• Cooking and nutrition – Preparing healthy and varied dishes and understanding where their food comes from.

LKS2
<ul style="list-style-type: none">• Building complex structures – Exploring how to stiffen, strengthen and stabilise more complex shell structures.
<ul style="list-style-type: none">• Mechanical structures – Including pulleys and levers.
<ul style="list-style-type: none">• Electrical systems – Including switches and bulbs, in a series circuit.

<ul style="list-style-type: none"> • Computing to program – monitoring and controlling products.
<ul style="list-style-type: none"> • Cooking and Nutrition – Principles of a healthy and varied diet, preparing and cooking a variety of mostly savoury dishes with a small number of ingredients and preparation. Through growing some ingredients, the children will understand the seasonality and origin of the ingredients used.

UKS2
<ul style="list-style-type: none"> • Building complex structures – Exploring how to stiffen, strengthen and stabilise more complex frame structures.
<ul style="list-style-type: none"> • Mechanical structures – Including gears, cams, and linkages.
<ul style="list-style-type: none"> • Electrical systems – Including switches, bulbs, buzzers and motors in series circuits.
<ul style="list-style-type: none"> • Computing to program – monitoring and controlling products.
<ul style="list-style-type: none"> • Cooking and Nutrition – Principles of a healthy and varied diet, preparing and cooking a variety of dishes with a larger number of ingredients and preparation. Through growing some ingredients, the children will understand the seasonality and origin of the ingredients used.

The National Curriculum

Purpose of study:

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils 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 draw on disciplines such as mathematics, science, engineering, 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.

DfE (2013), *National curriculum in England: design and technology programmes of study*, The national curriculum.

The national curriculum for Design and technology (2014) 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**.

DfE (2013), *National curriculum in England: design and technology programmes of study*, The national curriculum.