# Design Technology

## EYFS – Y6

- Intent, implementation and impact
- DT@ Nancledra
- Programme of study
- Skills coverage (including by cycle and phase)
- Skills progression Cycle A

# DT

**Intent:**

Wherever we look, evidence of design is all around us. From chairs to hospital equipment, from clothes to websites, from advertisements on the side of a bus to playground equipment, everything has been designed. This curriculum aims to inspire students to think about the important and integral role which design and the creation of designed products play in our society.

At Nancledra we aim to inspire pupils to be innovative and creative thinkers who have an appreciation for the product design cycle through drafting design concepts and ideas, creating their product and reflecting on its suitability.
We provide opportunities for our children to research past and present designs and designers, understanding the impact that these products have had on daily life. When designing, children are encouraged to communicate their ideas through diagrams, mock-ups and prototypes. They learn technical knowledge relating to structures, mechanisms, textiles and food technology. They also develop skills when using various tools including scissor, saws and drills, considering accuracy and safety. Our children are encouraged to evaluate and test their ideas and products, ensuing that it meets the initial design brief.
Ultimately, we aim to build an awareness of the impact of design and technology on our lives and encourage out children to become resourceful, enterprising citizens who will have skills to contribute to future design advancements.

**Implementation:**

The curriculum is split into three different areas: 'cook', 'sew' and 'build'. Two different 'aspects' of design are interwoven into the three areas of study: the environment and sustainability, and enterprise and innovation. These 'aspects' acknowledge enduring and contemporary concerns of modern design.
In 'cook' students learn to cook from recipes which gradually build basic culinary skills, culminating in an end product where the pupils produce various small dishes in a whole meal.
In 'sew' students practise using fabric and thread to learn basic sewing techniques to create objects which demonstrate embroidery, appliqué, weaving and plaiting. Concepts such as the properties and creation of different fabrics, fast fashion, industrialisation, waste, recycling and pollution are interwoven into these activities.
In 'build' students learn about the creation of structures and mechanical and electrical devices to create products such as cars, moving cards, toys and books. This culminates with an end product which considers the user in real life. Once again, the practical process of designing and creating a product is interleaved with learning about concepts which have a bearing on what the students make. These concepts, for example force, motion and the properties of materials are often connected with those encountered in the science curriculum.
Throughout the course of the lessons the students explore existing products and their uses, generate ideas and designs by creating drawings and prototypes against criteria which they devise having considered purpose, function and appeal. Evaluation against these criteria concludes the process. Discussion is an important part of this process, as is consideration of the properties of potential materials and the choice of tools. Learning about fundamental concepts, skills, developments in history and understanding of the influence of key individuals in the field are interleaved into this process-driven structure.

**Impact:**

By the end of each Key Stage, all children can apply and understand the concepts, and skills they have been taught, so that they are proficient in building, sewing and cooking. They will understand the functional and aesthetic properties of a range of materials and resources whilst also understanding how to use and combine tools to carry out different processes for shaping, decorating and manufacturing products. They will have built a repertoire of skills, knowledge and understanding to produce high quality, innovative outcomes, including models, prototypes, and products to fulfil the needs of users and scenarios.
This will include knowing and applying the principles of healthy eating, diets and recipes, including key processes, food groups and cooking equipment.
Teachers have high expectations and evidence is presented in a variety of ways. All children use technical vocabulary accurately and pupils are expected to know, apply and understand the skills and processes specified. Teachers formatively assess against the National Curriculum expectations. Children will leave Nancledra knowing that mistakes are okay. They will think for themselves and be critical about their own and other's work through the evaluation stage.

# DT

## @Nancledra


# DT National Curriculum @Nancledra: Programme of Study Overview

**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.

**Aims**

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

| | AUT | SPR | SUM |
|---|---|---|---|
| EYFS | Build<br>Vehicles | Sew<br>Animal Sock puppets | Cook<br>Dips and vegetables |
| Y1 | Build<br>Vehicles | Sew<br>Animal Sock puppets | Cook<br>Dips and vegetables |
| Y2 | Cook<br>Gingerbread | Build<br>Moving pictures | Sew<br>Pencil Cases |
| LKS2 | Build<br>Moving pictures | Build<br>Pop-up books | Cook<br>Bread & butter |
| UKS2 | Build<br>Cam toys | Sew<br>Bags (2024 Blanket) | Cook<br>Honey cake |

| | EYFS | | |
|---|---|---|---|
| | **AUT** | **SPR** | **SUM** |
| ELG Expressive arts and design: Creating with materials | Build - Vehicles | Sew – animal Sock Puppets | Cook – dips and vegetables |
| Concepts | Process of design<br>Vehicles: user and purpose Mechanical systems: wheels and axles<br>Wheels and axles in everyday examples<br>Structures and materials—strong, stiff and stable. Materials—properties and functionality<br>Vehicles and pollution | Process of design Making products with fabric<br>Properties of a range of materials Using suitable materials Fixing fabric together<br>Reusing/recycling materials Features of a puppet<br>Features of different animals | Nutrition—vegetables Sweet v savoury Cooked v raw Cooking from different cultures—Greece |
| Skills | Research and Investigate: Different types of vehicles, different parts of a vehicle, explore wheels and axles in toy cars. Explore simple ideas.<br>Design: Develop and communicate ideas by talking and drawing. Express my imagination and creativity.<br>Make:With support, assemble, join and combine materials using a range of methods – e.g. masking tape, glue, staples<br>Make a structure strong, stable and balanced<br>Use & Evaluate: Test and talk about my creations. Evaluate my work so I can make improvements. | Research and Investigate: Existing products. Explore simple ideas.<br>Design: Develop and communicate ideas by talking and drawing. Express my imagination and creativity.<br>Make: Use a small range of materials such as textiles. Cut and shape materials. With support, decorate fabrics with attached items - e.g. buttons, beads, sequins, braids, ribbons.<br>Use & Evaluate: Test and talk about my creations. | Following a simple recipe. Measuring in spoonfuls. Cutting, chopping, using a knife and a chopping board, bridge and claw technique, cutting with scissors, mashing, mixing.<br>Begin to follow procedures for safety and hygiene. |

# Year One DT Concept and Skill Coverage Cycle A

| | AUT | SPR | SUM |
|---|---|---|---|
| Unit | Build - Vehicles | Sew – animal Sock Puppets | Cook – dips and vegetables |
| Concepts | Process of design<br>Vehicles: user and purpose Mechanical systems: wheels and axles<br>Wheels and axles in everyday examples Structures and materials—strong, stiff and stable. Materials—properties and functionality Vehicles and pollution | Process of design Making products with fabric Properties of a range of materials Using suitable materials Fixing fabric together Reusing/recycling materials Features of a puppet Features of different animals | Nutrition—vegetables Sweet v savoury Cooked v raw Cooking from different cultures—Greece |
| Skills | Research and Investigate: Different types of vehicles, different parts of a vehicle, explore wheels and axles in toy cars Design: Understand criteria (user, purpose, function, appeal), generate/innovate/develop ideas, talking, drawing, labelling Make: Select tools/materials for making a toy vehicle with wheels and axles, cutting, different ways of joining decorating, finishing Use and Evaluate Car racing in the playground exploring speed, film/photograph children doing this, evaluation against criteria and | Research and Investigate: Existing products Design: Understand criteria (user, purpose, function, appeal), generate/develop ideas, talking, drawing, labelling Make: Select tools/materials, making paper templates, drawing/cutting shapes, gluing, joining fabric, drying Use and Evaluate: Recording of children using puppets, evaluate against criteria | Following a simple recipe Measuring in spoonfuls Cutting, chopping Using a knife and a chopping board Bridge and claw technique Cutting with scissors Mashing, mixing |

# Year Two DT Concept and Skill Coverage Cycle A

| | AUT | SPR | SUM |
|---|---|---|---|
| Unit | Cook – Gingerbread | Build – Moving Pictures | Sew – Pencil Cases |
| Concepts | Concepts Spices, spicy/sweet History of food, food transport and cost of ingredients Decoration Cooked v raw Baking | Process of design Mechanical systems: levers and sliders Levers and sliders in everyday examples Structures and materials to make levers and sliders in moving pictures strong, stiff and stable. | Process of design Features of a pencil case—size, materials, fastenings, shape, joining, decoration Using suitable materials Properties of different materials Making products with fabric Join fabric together—sewing and gluing Creating stitches with a needle and thread |
| Skills | Following a simple recipe Measuring using spoons Chopping, Mixing Rubbing fat into flour Cracking an egg Making a dough, rolling, cutting Baking, cooling, decorating | Research and Investigate: Levers and sliders, examples of what products which used these: see saw, scissors, hammer, wheelbarrow, shaduf, research examples of moving pictures Design: Understand criteria (user, purpose, function, appeal), generate/innovate/develop ideas, talking, drawing, labelling, creating a mock up Make: Select tools/materials for making a moving picture with levers and sliders, cutting, different ways of joining decorating, finishing Use and Evaluate: Photograph pictures, evaluation against | Research and Investigate: Existing products Design: Understand criteria (user, purpose, function, appeal), generate/develop ideas, talking, drawing, labelling Make: Select tools/materials, using paper templates/ patterns, drawing/cutting shapes, threading a needle, tying a knot, running stitch, gluing on decoration Use and Evaluate: Photograph pencil cases, written evaluation against criteria |

# LKS2 DT Concept and Skill Coverage Cycle A

| | AUT | SPR | SUM |
|---|---|---|---|
| Unit | Sew – Keyrings & decorations | Build – Pop up books | Cook – Bread & butter |
| Concepts | Process of design Making products with fabric Types of fabric - natural/synthetic Properties of fabric—thickness, softness, stretchiness How fabric is fit for purpose Features of a key ring/decoration—size, materials, shape, joining, stitching, decoration | Process of design Mechanical systems: linkages: moving pivot, fixed pivot, types of motion Linkages: uses and purpose in everyday examples Materials to make linkages in moving books: strong, stiff and stable. | Sweet/Savoury Making bread with flour made from wheat Yeast , wholegrains and health Baking Dairy products, milk and butter production |
| Skills | Research and Investigate: Examples of key rings/ decorations, different fabrics, how to make felt Design: Devising criteria (user, purpose, function, appeal), generate/innovate/develop ideas, annotated drawings Make: Select tools/materials, making paper templates/ patterns, drawing/cutting shapes, pinning, threading a needle, tying a knot, running stitch, backstitch, joining, stuffing, gluing, sewing/gluing on a loop Use and Evaluate: Photograph, written peer evaluation—against criteria and existing products | Research and Investigate: Linkages, examples of what products which used these: clothes horse, lifts, tool box, engines Design: Devising criteria (user, purpose, function, appeal), generate/innovate/develop ideas, create annotated drawings and prototypes Make: Select tools/materials for making pop-up book with linkages, cutting, different ways of joining, decorating, finishing Use and Evaluate: Photograph books, written evaluation against criteria and existing products | Following a recipe, measuring using scales Using yeast Mixing Making a dough, kneading, rising Baking Cooling Slicing, spreading |

# UKS2 DT Concept and Skill Coverage Cycle A

| | AUT | SPR | SUM |
|---|---|---|---|
| Unit | Build – Cam toys | Sew – Blanket | Cook – Honey Cake |
| Concepts | Process of design Mechanical systems: cams, followers, sliders, camshaft, rotary motion, linear motion, cam profiles Everyday examples and purpose of cams mechanisms Structures and materials to make products with cams and followers — 3d shapes, strong, stiff and stable | Process of design Making products with fabric Types of fabric—natural/synthetic Properties and suitability of fabric How fabrics are made—weaving Features of a bag – size, materials, fastenings, shape, joining, decoration, handles. Decoration—appliqué, embroidery | Sweet/Savoury Honey production and history Health benefits of honey Baking |
| Skills | Research and Investigate: Cams mechanisms, examples of what products use cams and followers (mechanical toys, sewing machines, engines, clocks), history of cams and mechanisms (Ismail al-Jazari), structure of a cams toy Design Devising criteria (user, purpose, function, appeal), generate/innovate/develop ideas, create annotated drawings, cross-sectional diagrams Make Select tools/materials for making a cam toy, cutting, different ways of joining, decorating, finishing Use and Evaluate Videoed peer evaluation— | Research and Investigate: Methods of decoration— appliqué, embroidery, bag design, materials and features Design: Devising criteria (user, purpose, function, appeal), generate/innovate/develop ideas, annotated drawings Make: Select tools/materials, drawing/cutting shapes, pinning, threading a needle, tying a knot, backstitch, overcast stitch (whipstitch), joining, embroidery, appliqué, plaiting Use and Evaluate: Written evaluation, photograph, film peer evaluation—against criteria and existing products | Following a recipe Measuring using scales and a measuring jug Mixing Cracking an egg Beating Baking Cooling |