DESIGN AND TECHNOLOGY AT NEWTON

Intent: Design and Technology at Newton aims to give opportunities for our pupils to use creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts, considering their own needs and others' needs, wants and values. We want our children to:

- learn how to take risks
- become resourceful, innovative, enterprising and capable citizens
- be able to evaluate past and present design and technology and develop a critical understanding of its impact on daily life and the wider world.
- Understand how Design Technology contributes to the creativity, culture, wealth and well-being of the nation.

Implement: Based on a carefully curated (Cornerstones) Curriculum, In Key Stage 1, the main focus is on **introducing** the children to basic design concepts, tools and materials and in Key Stage 2, the main focus is on **developing** children's understanding of design ideas, skills, concepts, tools and materials.
Our young designers will be:

- identifying and naming basic materials (e.g., paper, cardboard, fabric, wood)
- Exploring different shapes and textures
- Creating simple designs using construction kits, such as Lego or Duplo
- Developing simple models using a range of materials and tools
- Learning about safety rules and how to use tools responsibly
- Understanding the design process and basic design vocabulary

As our designers progress they will be:

- Developing more complex designs using sketches and technical drawings
- Working with a wider range of materials and tools, such as glue guns, saws and drills
- Learning about the properties of materials and how they can be manipulated
- Understanding how to incorporate electrical components into designs, such as switches and bulbs
- Developing more advanced problem-solving skills through design challenges
- Learning about sustainability and how to create designs that are environmentally friendly
- Using computer-aided design (CAD) software to create 3-D models and prototypes

LEARNING OVERVIEW
2023-24 (Cycle A)
2024-25 (Cycle B)

<table>
<tr><th colspan="7">2025-26 (Cycle C Oak Class/Cycle A Juniper and Willow Classes)</th></tr>
<tr><td>EYFS</td><td colspan="6">Children in EYFS will undertake learning and activities related to the content of the Year 1 DT curriculum (see unit plans for detail) but being consistent with EYFS pedagogy and underpinned by the focuses from EYFS Framework/Development Matters.</td></tr>
<tr><td></td><td colspan="3">Reception Expressive Art and Design

• Explore different materials freely - to develop their ideas about how to use them and what to make.
• Develop their own ideas and then decide which materials to use to express them.
• Join different materials and explore different textures</td><td colspan="3">ELG

Children at the expected level of development will:

• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
• Share their creations, explaining the process they have used.
•</td></tr>
<tr><td></td><td>AUTUMN 1</td><td>AUTUMN 2</td><td>SPRING 1</td><td>SPRING 2</td><td>SUMMER 1</td><td>SUMMER 2</td></tr>
<tr><td>JUNIPER
Year cycle
(A/B repeats)</td><td colspan="2">Shade and Shelter</td><td colspan="2">Taxi!</td><td colspan="2">Chop, Slice and Mash</td></tr>
<tr><td>WILLOW
Cycle A</td><td colspan="2">Remarkable Recipes</td><td colspan="2">Beach Hut</td><td>Cut, Stitch and Join</td><td>Push and Pull</td></tr>
<tr><td>WILLOW

Cycle B</td><td colspan="2">Cook Well, Eat well</td><td colspan="2">Making It Move</td><td colspan="2">Greenhouse</td></tr>
<tr><td>OAK

Cycle A</td><td colspan="2">Food for Life</td><td colspan="2">Engineer</td><td colspan="2">Make Do and Mend</td></tr>
<tr><td>Oak

Cycle B</td><td colspan="2">Moving Mechanisms</td><td colspan="2">Eat the Seasons</td><td colspan="2">Architecture</td></tr>
</table>

Oak Cycle C	Fresh Food, Good Food	Functional and Fancy Fabrics	Tomb Builders

IMPACT (End goals)

By the end of KS1 pupils should be able to:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical Knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles] in their products

By the end of KS2 pupils should be able to:

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 [for example, cutting, shaping, joining and finishing], accurately
- select from 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
- understand how key events and individuals in design and technology have helped shape the world

Technical Knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures

	• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • apply their understanding of computing to program, monitor and control their products

ASSESSMENT

Design and Technology learning will be recorded in DT books or individual Learning Journeys (Juniper Class). This learning may include written responses, sketches, diagrams, plans, evaluations and photographs of finished products. It may also include - typically in the younger years - a class learning journey where adults might capture learning as scribed oral contributions from pupils, or photographs or other observations/commentary.

Teachers assess learning in number of ways: by making observations of the children working during lessons, listening to their responses and ideas and looking at work in books/finished products. All these assessment tools help teachers to reach a judgement as to how well the unit content has been learnt ie. do children know, remember and can do the things we have been teaching them? While it is crucial that the teacher then acts on the outcomes of this assessment so that it informs future learning, it also provides a snapshot summary identifying who is on track, who is not there yet and who is out in front.