



# Design & Technology Program of Study

## Daffodil Preparatory School

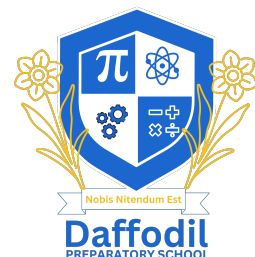
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We have carefully crafted a comprehensive Design and Technology Curriculum at Daffodil Preparatory School, designed to both inspire and challenge our students. Our curriculum focuses on:

1. Developing key technical knowledge and skills.
2. Teaching technical vocabulary to facilitate discussions, investigations, and evaluations of designs.
3. Designing and creating products with a specific purpose and user in mind.
4. Investigating and evaluating existing products as well as the ones our students create.



**Nobis Nitendum Est**

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## WHAT OUR STUDENTS WILL LEARN (INTENT):

At our school, we have adopted the Kapow Design and Technology program, aligning with the Statutory Framework, Development Matters (Expressive Arts and Design), and the National Curriculum for Design and Technology. This approach enables our teachers to deliver creative, inspiring, and engaging lessons. We have customized the scheme to meet the unique needs of our school community. Our curriculum encompasses the following areas:

1. Cooking and Nutrition
2. Mechanisms
3. Structures
4. Textiles
5. Electrical Systems

**Nobis Nitendum Est**

Each unit in the Design and Technology Curriculum incorporates four essential strands: Design, Make, Evaluate, and Technical Knowledge. Additionally, we have a standalone unit dedicated to Cooking and Nutrition each year. Whenever possible, we strive to create connections with other curriculum subjects, as they often provide a meaningful context and end-user perspective for the products our students design and make. Our rolling program ensures that all students receive a comprehensive Design and Technology education within our mixed-age class structure.

## How Our Students Will Be Taught the Design and Technology Curriculum (Implementation):

Design and Technology is taught in focused blocks during each term, allowing students to delve deeply into the curriculum. This approach provides students with the time needed to complete more extensive projects over the course of a block, rather than having shorter, weekly sessions. Expressive Arts and Design projects are also taught in blocks. Students have the opportunity to engage in continuous provision throughout the term, enabling them to revisit and build upon their previous learning, refine ideas, and enhance their ability to represent their ideas (as outlined in Development Matters).

# PROGRESSION AND ASSESSMENT:

- In Key Stage 1 (KS1), students will revisit their work at spaced intervals, and teachers will assess their knowledge to identify any gaps.

- In Key Stage 2 (KS2), students' learning is assessed during and at the end of each unit, at spaced intervals (approximately 2, 6, and 12 weeks). We use the assessment materials provided in the Kapow scheme of work. Evidence for assessment is gathered through photographs, pupil sketchbooks, and observations of students' work.

Cooking and Nutrition	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Name and taste different fruit and vegetables. What do they taste like? Talk about how are they different?	Name and taste different fruit and vegetables. Design based on food combinations that work well together	Create a healthy and nutritious recipe considering taste, texture, smell and appearance	Design a biscuit within a given budget	Adapt a design of a recipe	Include facts and drawings from research undertaken
Make	Chop a range of fruit and vegetables safely using a <b>vegetable knife - child safety type</b> (for example, apple, carrot, cucumber) 1. Lay food flat on chopping board 2. Use a claw grip to hold the fruit	Slice food safely using the <b>claw grip</b> and the <b>bridge grip</b> (for example, the bridge grip is best for curved shapes like tomatoes, plums, aubergines,)	Follow instructions within a recipe and learn basic rules to avoid food contamination.	Follow a baking recipe cooking safely following basic hygiene rules	Follow a step-by-step method carefully to make a recipe using equipment safely including knives, slow cooker hot pans, and hobs.	Follow a recipe, including using the correct quantities of each ingredient. Adapt a recipe based on research.
Evaluate	Test and evaluating different foods describing appearance, smell, and taste	Taste testing food describing the taste, texture and smell. Evaluating effective grip.	Establish and using a design criteria to help test and review dishes. Suggesting improvements.	Evaluate a recipe considering: taste, smell, texture and appearance. Suggesting modifications.	Identify the nutritional differences between different products and recipes	Evaluate a recipe, taste testing and scoring final products, suggesting and writing up improvements.
Technical Skills / Knowledge	Understand the difference between fruits and vegetables and	Know the five food groups and how they can be combined.	Work with cooking equipment safely and hygienically. Learning that	Understand the impact of cost and the importance of budgeting. And	Understand where food comes from. And learning to	Understand where food comes from and the term 'Farm to

Textiles	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Use a pre-made template to create a design	Create own design template	Develop design criteria from a given brief	Personalise a design and articulate design decisions	Develop a design considering the main component shapes and considering proportions.	Design in accordance to specification linked to a design criteria to fit a specific theme. Annotating designs.
Make	Sequence steps for construction.	Select and cut fabric	Follow design criteria selecting and cutting fabrics using fabric scissors	Making and testing a paper template with accuracy and in keeping with the design criteria	Measure, marking, and cutting fabric accurately and independently	Mark and cut fabric accurately, in accordance with a design.
Evaluate	Reflect on a finished product explaining likes and dislikes	Discuss the quality of their work against the success criteria. Evaluating the quality of their peers work.	Evaluate an end product and thinking of ways to create similar items.	Test and evaluate the end product against the original design criteria. Suggesting modifications and improvements.	Test and evaluate an end product and giving points for further improvements.	Evaluate work continually as it is created.
Technical Skills / Knowledge	Learn different ways in which to join fabrics together.	Sewing –using running stitch, with evenly spaced neat stitches	Thread needles with greater independence and Sewing- using cross stitch and applique	Understand that there are different types of fastenings and what they are.	Thread needles independently and learning blanket stitch to join fabric	Learn different decorative stitches and sewing accurately.

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Make	n/a	n/a	Make, referring to the design criteria	Assemble according to the design and success criteria	Map out where different components will go	Tweak components to improve function and decorate to a high-quality finish.
Evaluate	n/a	n/a	Test against the original design criteria and justifying opinions	Test and evaluate the success of a final product and taking inspiration from the work of peers	Evaluate a completed product against the original design sheet and looking at modifications that can be made, and aesthetics.	Test own and others finished games, identifying what went well and making improvements.
Technical Skills / Knowledge	n/a	n/a	Understand what static electricity is and how it moves objects. And use static electricity to make objects move in a desired way.	Learning how electrical items work and understanding that a battery contains stored electricity and is a power source.	Learning the key components in a functioning circuit and know the difference between series and parallel circuits.	Understand that when electricity enters a magnetic field it can make a motor work.

Evaluate	Test a finished product seeing whether it moves as planned. How can it be fixed?	Evaluate own design against design criteria. Test and adapt a design.	Use the view of others to improve designs. Suggest improvements, testing and modifying.	Evaluate the performance of a final product based on shape and accuracy of workmanship.	aesthetically pleasing result. Evaluate the work of others and receiving feedback on own work, 'suggesting' points for improvement	Evaluate the work of others and receiving feedback on own work, 'applying' points of improvement.
Technical Skills / Knowledge	Identify whether a mechanism is a lever or slider (Vocabulary: up, down, left, right, vertical, horizontal.)	Know there is an input and an output in a mechanism. -Linkage is a system of levers that are connected by pivots	Know that mechanisms are a system of parts that work together to create motion	Know that kinetic energy is the energy that something (object, person) has by being in motion.	Know that input is the motion used to start a mechanism and output is the motion that happens as a result of starting the input	Explore types of motion and direction of motion. (Exploring cams shape and movement)

<b>Electrical Systems</b>	1	Year 2	Year 3	Year 4	Year 5	Year 6
Design		n/a	Develop design criteria from a given brief Identify a target audience	Personalise a design	Develop a design with a range of features, for example simple electric control features	Model ideas through prototypes



Evaluate	Evaluating according to the design criteria, is it strong/stable? How can we improve it?	Evaluate the strength, stiffness and stability of their own structures. Suggesting points for improvements	Evaluate own work, suggesting points for modification of the original design.	Evaluate work, describing what characteristics of a design and Construction made it most effective/ ineffective?	Suggest points for improvement for own designs. Identifying weakness and adapting and improving.	Improve a design plan based on peer evaluation. Testing and adapting a design to improve it.
Technical Skills / Knowledge	Learn that the shape of a structure can be changed to improve the strength and stiffness of structures. 2D to 3D	Know that shapes and materials can be manipulated to improve strength and stiffness	Identify suitable materials considering weight, compression, tension. Understand the difference between frame and shell structure.	Build on prior knowledge of net structures and implementing frame and shell structure knowledge.	Understand the terms: compression and tension. Find different ways to reinforce structures	Know that structures can be strengthened by manipulating materials and shapes and identify shell structures in everyday life.
<b>Mechanisms</b>	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Discuss design criteria for a moving monster	Generate design ideas for a moving monster in accordance with design criteria.	Design a toy which uses a pneumatic system Develop design criteria from a given brief	Personalise a design	Develop a design with a range of features, for example a mixture of structures and mechanisms, simple electric control features	Consider how mechanisms will be used considering effective and ineffective designs.
Make	Follow a design that uses levers and sliders.	Experiment with linkages. Cut and assemble components neatly	Select materials due to their function and aesthetic characteristics	Measure, mark, cut and assemble with increased accuracy	Follow a design brief neatly with focus on accuracy and for an	Measure, mark and check the accuracy of the components

<b>Structures</b>	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design	Discuss design criteria for a structure (chair for baby bear)	Generate design ideas for a structure (baby bear's chair) through sketching and modelling	Draw and label 2D shapes and corresponding 3D shapes (that will make features of the castle)	Design a stable structure and select materials to make it aesthetically pleasing.	Create a stable frame structure with focus on triangulation	Give careful consideration to how the structures will be used considering effective and ineffective designs.
Make	Follow instructions, cut and assemble the structure	Make a structure according to design criteria	Create special features for individual designs	Create a design in accordance with a plan, selecting appropriate materials for the structure	Select appropriate tools and equipment. Identify where a structure needs reinforcement	Measure, mark and cut wood to create as structure

## IMPACT:

At the end of the academic year, we conduct a comprehensive review to assess the impact of our Design and Technology Curriculum. This review includes observations and assessments of students' learning, evaluations of their work, and discussions with students about their learning experiences. This process ensures that our curriculum remains effective and continues to meet the needs of our students.

