



# Product Design / Engineering

Within the safe and supportive environment of Beckfoot, students will be able to develop practical skills in a range of materials and have the confidence to apply these skills to problems they may encounter later in life.

**Intent—To enable students to develop critical thinking, creativity and dexterous skills through engaging practical experiences.**

**Design and technology** is an inspiring, rigorous and practical subject. Using creativity and imagination, students are to design and make products that solve real and relevant problems. They acquire a broad range of subject knowledge and draw on cross curricular disciplines such as mathematics, science, engineering, computing and art. Students learn how to take risks within a supportive environment, becoming resourceful, innovative, enterprising and capable adults. Through the evaluation of existing products (both past & present), they develop a critical understanding of its impact on daily life and the wider environment.

## Confident Communicators

Both graphical and annotated notes are vital to communicating ideas. Students all learn to communicate their design ideas and decisions using different media and techniques for presentation at key points in their designing.

## Knowledgeable and Expert Learners

Using specialist teachers as facilitators, our students are encouraged to develop their practical and designing skills. The use of booklets to document their designing and process knowledge will improve their knowledge and confidence within the workshop.

## Committed Community Contributors

Learners knowledge is regularly linked to everyday products. The decisions which were made when a product was designed, manufactured & disposed. Links beyond the classroom exist around us every moment of the day. Students are encouraged not to take these products for granted.

## Future-Ready Young People

The Product Design / Engineering curriculum links materials knowledge, processes and design with the environment around us. There is an emphasis on time management and independent working as all topic areas have a large element of coursework.

<b>Design</b>	<p>Use research and exploration, to identify and understand user needs</p> <p>Identify and solve their design problems and understand how to reflect on proposals</p> <p>Use a variety of approaches to generate creative ideas and avoid stereotypical responses</p> <p>Develop and communicate design ideas using annotated sketches, oral or digital presentations (inc. computer-based tools)</p>
<b>Make</b>	<p>Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including CAM</p> <p>Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions</p>
<b>Evaluate</b>	<p>Analyse the work of past and present designers and others to develop and broaden their understanding</p> <p>Investigate new and emerging technologies</p> <p>Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users.</p>