Why Teach Design and Technology?

We believe that Design and Technology is at its core all about creativity and imagination. Students learn to design and make products taking into account the modern world and needs of others, allowing them to access a plethora of careers in the growing area of the creative industries and engineering.

Students have to consider others and understand their view points, think in creative ways to solve problems, learning practical skills an variety of media techniques and process in order to achieve an effective end result.

Design and technology requires a combination of divergent and creative thinking blended with theoretical understanding and practical skills.

From designing objects for a commercial market through to clothing, furniture and Food, Design and technology equips students for their future by encompassing practical life skills and encourages students to be make appropriate decisions and solve problems.
 – essential skills for the modern world.

We want our students to be able to think like designers,

Learning for Life and Careers

Employability skills

Literacy, Numeracy, Analysis, Creativity, Organisation, Initiative, Communication, Presentation, Collaboration,

Linking the Curriculum to careers:

Clear career links following designers and makers are shared throughout.

Encounters with employers

The school has links with Northampton collage as a local provider with students visiting for workshops.
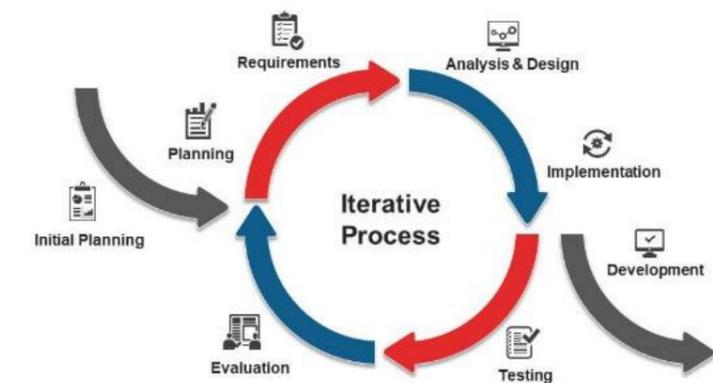
Examples of qualification pathways

Product design can lead to a multitude of further education options such as apprenticeships, engineering, architecture and other design related degrees.

Disciplinary Knowledge

	Designing	Understanding contexts, user and purposes
		Generating, developing, modelling, and communicating ideas
	Making	Planning
		Practical skills and techniques
	Evaluating	Own ideas and products
		Existing products
		Key events and individuals

Iterative Process Model

Curriculum Overview

		Year 7	Year 8	Year 9	Year 10	Year 11
Product		**Wooden Robot**	**Desk Lamp**	**Box**	**GCSE- OCR**	**GCSE - OCR**
		Understand how to shape wood using tools safely. Use materials economically.	Understand how to combine multiple elements to create a 3D object. using machines and tools safely.	Joints and joining methods.	Theory -Woods, Metals, Plastics and SMART materials. Practical outcomes Use of hand tools and powered machinery.	NEA (non-examined assessment) on a chosen theme.

Key Stage 3 and 4	Year 7,8 & 9 (Key Stage 3) subject on rotation with Textiles and Food Students have 1 lesson every two weeks for 1 term			OCR GCSE (Key Stage 4) Students have 3 lessons per two weeks	
	Year 7	Year 8	Year 9	Year 10	Year 11
Topics Covered.	*Wooden Robots* • Health and safety • Tri square and marking gauge. • Hard and softwoods • Cut wood using coping and tenon saws. • Cut curves with a coping saw. • Shape and smooth using machine sanders, hand files and abrasive paper. • Use pillar drill to create holes to attach moving parts. • Join wood together using a dowel to enable movement of the arms. • Smooth, finish and personalise the robot. • Understand and follow Health & Safety in the workshop • Use Machine/Powered Tools.	*Desk Lamp* • Draw ideas out in 2/3D – using Isometric method. • Create templates for cutting and shaping. • Select appropriate tools • Cut and shape using coping and hegner saws. • Sand and smooth using files, sanding machines and sandpapers. • Use pillar drill to create bore/counter bore holes. • Fix and assemble all parts and components using hot glue gun,, screwdriver, spanner, and hex key. • Apply finishing techniques selecting and using appropriate tools and materials.	*Storage Box* • Develop a variety of design ideas considering, user profile, the design brief and feedback from peers. • Draw ideas out in 2/3D • Accurately measure and mark out materials. • Cut and shape using coping and hegner saws. • Smooth and sand using hand files, sanding machines and sandpaper. • Fix joins using glue,c lamps and vices. • Assemble hinges, feet, handles, divides.	*Knowledge and Understanding and Practical Skills* **Wooden Pull Along Toys** • Timbers • Cams • Motions • Linkages • Gears • Levers **Acrylic phone holder** • Polymers • Sustainability • Iterative design • Line bending • Manufacturing processes and techniques **Metal bottle opener** • Metals • Idea Generation • Iterative design • Anthropometrics • Ergonomics **LED light** • Electronics • Soldering • Components used **GCSE NEA – contextual challenges released to students by exam board** • Investigation of contextual challenges • Design brief	*NEA – 50%* • User needs • Product specification • Stakeholders • Existing product research • Exploration of materials • Technical specification • Generation of ideas • Design Development • Critical thinking • Prototype • Plan of manufacture • Feasibility of design • Critical evaluation Written Theory exam July - 50%