



Curriculum overview Design & Technology

NORTHGATE
High School

Key Stage 3

Students will complete all topics listed over the course of the year, but due to subject rotations they will not necessarily complete it in the order shown below.

Year	Term 1	Term 2	Term 3
7	<p>Desk Tidy Project Key learning:</p> <ul style="list-style-type: none"> • Safety in the workshop • Basic understanding of plastics and woods • Familiarisation with the workshop • Designing skills • Knowledge of tools and equipment • Correct and safe use of tools and equipment • Collaborative learning • Evaluating a project <p>Gravity Racing Cars Key learning:</p> <ul style="list-style-type: none"> • Designing a product • 3D drawing skills • Making skills and applying finishes • Aerodynamics and friction 	<p>Food Technology Key learning:</p> <ul style="list-style-type: none"> • Cooking techniques: <ul style="list-style-type: none"> ○ selecting and preparing ingredients ○ using utensils and electrical equipment ○ applying heat in different ways ○ using awareness of taste, texture and smell to decide how to season dishes and combine ingredients ○ adapting and using their own recipes • Basic kitchen hygiene and safety • How apply the principles of nutrition and healthy eating through the Eatwell Guide • Understanding of the source, seasonality and characteristics of a broad range of ingredients through researching food miles 	<p>Marine Life Sustainability Project Key learning:</p> <ul style="list-style-type: none"> • The origins of fibres, yarns and fabrics (Natural and synthetic) • Types of fabrics (woven/knitted/bonded) • The 6Rs of sustainable design • How to make felt • Hand stitching techniques • Analysing the work of the artist Nikki Parmenter and using correct vocabulary • Learning how to create decorative weaving using recycled plastics • Learning how to create a mood board and use this to develop design ideas <p>Decorative Cushion Project Key learning:</p> <ul style="list-style-type: none"> • How to use a sewing machine and apply the rules of health & safety to using basic equipment correctly • Producing creative work, exploring their ideas and recording their experiences • Evaluating and analysing the creative work of the artist Abby Diamond using the correct specialist vocabulary

			<ul style="list-style-type: none"> • How to develop mark making and design skills into a developed design idea using personal creativity • Applying this using a range of different decorative techniques to a final piece • Reflecting on the success of their work through self and teacher evaluation
8	<p>USB Hardwood Desk Light Project Key learning:</p> <ul style="list-style-type: none"> • Development of Design Brief and specification and analysis of the client • Design and plan a movable 3D structure • Experience shaping and finishing hardwoods • Construct a Printed Circuit Board assembly for Light Emitting Diodes • Evaluate and suggest improvements to the final product <p>Pencil Box Project Key learning:</p> <ul style="list-style-type: none"> • Isometric drawing skills • Sourcing of timber • Use of tools and equipment • Knowledge of wood joints • Safe workshop practices <p>Structures Introduction Key learning:</p> <ul style="list-style-type: none"> • Investigate mechanisms, machines and systems • Problem solving skills • Teamwork Skills • Levers Investigation • Sketching Skills • Mathematical Application Skills 	<p>Food Technology Key learning:</p> <ul style="list-style-type: none"> • Revisit the hygiene and safety of a kitchen • Revisit and continue to develop cooking techniques: <ul style="list-style-type: none"> ○ selecting and preparing ingredients ○ using utensils and electrical equipment ○ applying heat in different ways ○ using awareness of taste, texture and smell to decide how to season dishes and combine ingredients ○ adapting and using their own recipes • How to apply the principles of macro and micro nutrition and healthy eating through the Eatwell Guide. • How to be creative when adapting a range of dishes. • The science behind bread making and applying this to produce their own flavoured bread and pizza. • The impact of food waste in the UK. • How to carry out a product analysis. 	<p>Graphics Chocolate Bar Project Key learning:</p> <ul style="list-style-type: none"> • Identify a client and produce a branded product • Use hand graphical skills to design and develop a prototype concept • Evaluate the outcome against the client's needs <p>Textile Pencil Case Project Key learning:</p> <ul style="list-style-type: none"> • Recap how to thread and use a sewing machine and apply the rules of health & safety to using basic equipment correctly • To understand the process of being a designer by responding to a brief and specification in order to meet a customer's needs • Create a working prototype suitable for the customer • To learn how to use a view finder to develop designs and make them look more abstract to fit the brief and specification • Produce creative work, exploring their ideas and recording their experiences • Evaluate their own work through self-assessment and teacher assessment to understand how to improve and move their work forward • Learn the decorative technique of batik and how to apply this to their work with precision.

			<p>Look at the history and culture of the technique.</p> <ul style="list-style-type: none"> • How to apply fastenings
9	<p>Timber Box Project Key learning:</p> <ul style="list-style-type: none"> • Design a product to meet a client’s needs • To be able to produce a Design Brief and Specification • To communicate the design and development process • To use hardwood to construct a box with opening lid and personalised design • Evaluating outcomes <p>Upcycled and screen-printed T-shirt Project Key learning:</p> <ul style="list-style-type: none"> • Using mood boards for expressing likes and desires which link to their final design. • Learn the decorative technique of screen printing and understand how to create multi-layer colours • Learn how to design and upcycle a plain white T-shirt using a theme of their choice • Learn how to create stencils and use a craft knife safely to cut the stencils with precision • Learn and understand various decorative techniques including tie dye, dip dye, slashing & tying techniques • Learn how to use CAD to produce design ideas • Producing creative work, exploring their ideas and recording their experiences • Evaluating their own work and self-assessing it to understand how to improve and move their work forward 	<p>Laser Cut Mood Light Project Key learning:</p> <ul style="list-style-type: none"> • Basic electronic theory • Product investigation • Target market investigation • Specification knowledge • Workshop practices and appropriate workshop behaviour • Soldering • Working with Manufactured Boards • Project evaluation and self-reflection • Recycling and environmental awareness • Investigation of advanced electrical and electronic systems & programming <p>Cultural Food Project Key learning:</p> <ul style="list-style-type: none"> • Revisit and continue to develop cooking techniques: <ul style="list-style-type: none"> ○ selecting and preparing ingredients ○ using utensils and electrical equipment ○ applying heat in different ways ○ using awareness of taste, texture and smell to decide how to season dishes and combine ingredients ○ adapting and using their own recipes • Recognise that different cultures consume different foods and that religion plays a part in this • How to carry out a sensory analysis test and produce a star profile of their results • How to cook a repertoire of savoury dishes so that students are able to feed themselves and others, with a focus on Italian, Chinese and Indian culture 	<p>Graphics Art Deco Printing Key learning:</p> <ul style="list-style-type: none"> • Research Art Deco themes • Research existing products and look at the work of other designers • Experiment with different lino printing techniques • Experience the Affinity CAD program and produce brand relevant packaging • Evaluating outcomes <p>Art Textiles Sketchbook Project Key learning:</p> <ul style="list-style-type: none"> • Learn a range of dyeing and printing techniques including the use of transfer paints, fabric pens, mono printing, block printing, wet on wet painting • Research into a cultural theme of choice to inspire designs and patterns • How to create a mood board and understand how to use a mood board to generate shape, pattern, colour and design • Be able to record processes consistently and accurately as part of a working sketchbook • How to independently mount samples and make best choices • Evaluating samples and how to improve and push their samples into more development