

Creative Technologies Curriculum Overview Year 8

Key stage 3 Curriculum overview 2024-25

In key stage 3, students work in all areas of Creative technologies by rotating through a carousel of different material areas, following a common theme which is explicitly evident within the national curriculum. These two themes of eco and social draw upon the focus that D&T should solve real world problems for people. By embedding this into the curriculum students will develop empathy, understanding of client's needs and wants and a better cultural capital. Students will explore many different material areas and develop their skills and techniques with a range of different tools and equipment. They will make links with other subject areas such as art, computer science as well as maths and English. Students will become independent, problem solvers through a variety of creative and practical activities, which allow them to discover a depth of knowledge, understanding and skills needed to engage in an iterative process of designing and making.

Theme-

Design & Technology	Engineering	Graphics/Textiles	Food prep & nutrition
Assessments <ul style="list-style-type: none"> Formative/ Practical- Initial Ideas Summative/ Theory- End of unit test Homework 1- Interview and primary research Homework 2- Client feedback	Assessments <ul style="list-style-type: none"> Formative/ Practical- Independent soldering Summative/ Theory- End of unit test Homework 1- Metals fact sheet Homework 2- Forms quiz	Assessments <ul style="list-style-type: none"> Formative/ Practical- Decorative techniques on sensory pizza. Formative/ Practical- Photoshop skills and techniques for graphic design. Summative/ Theory- End of Unit Test Homework 1- Materials fact file Homework 2-Graphics Resolution	Assessments <ul style="list-style-type: none"> Formative/ Practical- Pizza Whirls and Bread Rolls Summative/Theory-Marked work in books Homework 1- Local and Seasonal foods Homework 2-Cooking Methods Experiment
Assistive technology for arthritis	Electronics game	Sensory Toys and packaging	
Unit outline and practical skills: Students will explore, design, create and evaluate an assistive aid to help someone with arthritis.. <ul style="list-style-type: none"> Design communication including orthographic projection 3D card and Styrofoam modelling CAD/CAM using Onshape software and 3D printing 	Unit outline and practical skills: Students will learn how electronic components are combined to create working circuits. They will use this knowledge to make a handheld game that encourage fine motor skills and dexterity in children <ul style="list-style-type: none"> Metals, uses and properties Soldering and electronics Safe use of workshop machinery and equipment 	Unit outline and practical skills: Students will explore, design and create a sensory toy and it's packaging for a young child. In Graphics students will design and create both the Logo and Packaging for the client company and sensory product. In textiles, they will: <ul style="list-style-type: none"> Analyse a client brief to understand the context of the product they are making. Use a variety of textiles techniques (couching, embellishment, ruffles and applique) to add sensory elements to their toy. Understand the stages of manufacture when making a textiles product (template, seams and construction) In graphics, they will: <ul style="list-style-type: none"> View, analyse and understand a variety of pre-production documents for the media industry. Use a range of Photoshop skills (Spot healing, Adjustments and clipping masks) to create an effective Logo and packaging design. To evaluate the design accurately against a client brief. 	Unit outline and practical skills: Building on year 7 work developing higher level skills and learning about reasons for food choices, including nutrition, seasonality and local foods and food provenance. <ul style="list-style-type: none"> Pastry making Bread Making Cake Making
Theory knowledge (with link to NC) <ul style="list-style-type: none"> Use research to identify user needs in order to write a detailed specification (D1, D3) Develop and communicate designs using annotated sketches and 3D modelling including CAD (D5) Develop understanding of polymers, their uses and properties including bio plastics such as PLA for CAM 3D printing. (M1 and M2, T1) Designer research and continual testing of iterations against specification (E1, E3) 	Theory knowledge (with link to NC) <ul style="list-style-type: none"> Develop understanding of metals, their uses and properties . (M1 and M2, T1) Learn how to solder, electronic components and the systems approach to designing including input, process and output. (T3) 	Theory knowledge (with link to NC) <ul style="list-style-type: none"> use research and exploration to identify and understand user needs. (D1) use a variety of approaches to generate creative ideas and avoid stereotypical responses. (D4) Develop an understanding of textiles techniques and how these can be experimented with to create different outcomes (M1) 	Theory knowledge (with link to NC) <ul style="list-style-type: none"> Food provenance – where food comes from, local and seasonal foods Food provenance – wheat farming Nutrition – why we need the 5 nutrients and where they come from Food choices why people eat what they eat, how they get the information to make wise food choices

<ul style="list-style-type: none"> Focus on how design and technology can have an impact on individuals and society (E4) 		<ul style="list-style-type: none"> Develop an understanding of textiles materials and how different fabrics are suitable for different uses. (M2, T1) Understand how textiles can be used to create impactful designs that aid individuals. (E4) Develop a product from the use of Photoshop software skills and techniques. (M1) 	
<p>Literacy and numeracy Units of measurement- mm's to accurately measure existing components. Use of dimensions in CAD to ensure functioning products. Extended writing about the environmental impact of plastics as part of end of unit test, opportunity for stand and speak throughout.</p>	<p>Literacy and numeracy Units of measurement Reading homework regarding metals before creating a fact file.</p>	<p>Literacy and numeracy Opportunities for Stand and Speak Use of keywords- applique, couching , template, manufacture etc Literacy homework regarding researching materials and writing into own words. Units of measurement to accurately size our sensory toy. Literacy homework reviewing Graphic resolution and dimensions.</p>	<p>Literacy and numeracy Assessed piece of writing about local or seasonal food – using researching skills and writing skills. Measuring ingredients Measuring cooking times Estimating skills</p>
<p>Links to KS2 and 4 Students will develop their understanding of different materials from KS2 as well as how to create ideas, test and refine them. They will improve knowledge of CAD/CAM. This leads onto KS4 D&T/Engineering manufacture where students will make informed choices based on previous knowledge of materials and manufacturing processes.</p>	<p>Links to KS2 and 4 Students will develop their understanding of different materials from KS2 as well as how to create ideas, test and refine them. They will improve knowledge of CAD/CAM. This leads onto KS4 D&T/Engineering manufacture where students will make informed choices based on previous knowledge of materials and manufacturing processes.</p>	<p>Links to KS2 and 4 Students will build on any textiles knowledge they will have gained in primary school. Their understanding of materials will be developed, as well as their skills of generating ideas and designs/ The use of textiles techniques will lead well into GCSE Textiles, as experimentation of materials and techniques plays a key role into the assessment of GCSE work. For graphics students will build on the understanding of creative design and use of computers from primary and be given the opportunity to broaden this skillset with new software. The use of graphic software skills and creative thinking links well with Cambridge Nationals Creative iMedia as this software becomes consistent with the course's project requirements and expectations.</p>	<p>Links to KS2 and 4 Students build on any nutritional knowledge they have gained in primary school, and build on any basic practical skills they have – both from home and school. They learn about where food some food comes from and do some basic food experiments. This leads into KS4 where they will develop higher level skill, gain a much more detailed knowledge of nutrition and learnabout where most foods come from and how to make wise food choices.</p>

NC links (Design and Technology)-

DESIGN	MAKE	EVALUATE	TECHNICAL KNOWLEDGE
D1 use research and exploration, such as the study of different cultures, to identify and understand user needs	M1 select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture	E1 analyse the work of past and present professionals and others to develop and broaden their understanding	T1 understand and use the properties of materials and the performance of structural elements to achieve functioning solutions
D2 Identify and solve their own design problems and understand how to reformulate problems given to them	M2 select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties	E2 investigate new and emerging technologies	T2 understand how more advanced mechanical systems used in their products enable changes in movement and force
D3 develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations		E3 test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups	T3 understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs]
D4 use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses		E4 understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists	T4 apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers].
D5 develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools			

National curriculum (Food Prep and nutrition)-

F1 understand and apply the principles of nutrition and health

F2 cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet

F3 become competent in a range of cooking techniques [for example, 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]

F4 understand the source, seasonality and characteristics of a broad range of ingredients