

KS3 Curriculum Overview

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Curriculum Intent including key skills and key concepts

Rationale for KS 3 Curriculum

Overview
Year 7
Unit 1 – Health and Safety in the Workshops
Overview
 Students undergo a rigorous set of activities to equip them with the knowledge and understanding for working within the workshop environment.
 Focus areas: Health and safety within the workshop, use of hand tools, use of machines.
Unit 2 – Key Skills
Overview
 Sketching Skills & techniques, Research Skills, Designing, Developing, Modelling
 Focus areas: Research and Developing ideas
 Sketching & Presentation skills, Initial Design Ideas, Researching a design style
 Development, Final Design
Unit 3 – Pewter Cast Jewellery
Overview
 Design and make pewter cast jewellery to a given theme. In this students research and develop a brief, develop a specification and from this generate ideas for designs. Using CAD software they model and test their designs, and produce a mould before casting and finishing their designed product.
 Key Learning:
 Learn to develop a base of research
 Develop a brief and specification
 Factors that affect design
 Skills:
 Sketch out designs and select appropriate proposal
 Transfer design onto CAD programme
 Cut out moulds using CAM available
 Cast and finish jewellery
Unit 4 – A Balanced Diet
Overview
 Producing a healthier meal aimed at teenagers.
 Students investigate factors affecting food choices before designing and making a meal suitable for a teenager. They consider factors such as the importance of a balanced diet, cost, availability, cultural and religious practices and health concerns. Practical lessons include making a stir fry, a curry and kofta before working independently on their final choice of meal.
 Key Learning:
 Identifying needs of the consumer
 Factors effecting individual consumer choice
 Variety of cooking methods
 Basic nutritional analysis
 Skills:
 Following existing recipes
 Use of a variety of ingredients and equipment
 Applying knowledge of safe working practice
Unit 5 – Signage
Overview
 Students will be asked to design and manufacture signage for a local manufacturer. They will use a digital image to then laser cut the sign after they have produced a

In Ks3 we follow the Iterative design process based on a cyclic process of prototyping, testing, analysing and refining a product. This falls in line with the new Ks4/5 specifications. Running alongside of this we teach identified chunks of subject knowledge which are built upon through the key stage.
 All compliant materials are visited at least once throughout ks3 through practical tasks. More specialist subject knowledge like sustainability, anthropometrics, ergonomics and product analysis will be introduced to the students and studied in some detail.

Relevant Department Interventions and Support and Access Arrangements

The department work closely with pastoral coordinators and HOY.
 Data from class charts is used to identify students needing extra help. These students are then supported with sessions at lunch.

Enrichment Opportunities

Year 7
 Open workshops with organised projects

Year 8
 The Big bang (science and technology show)
 Hackfest Design competition

Year 9
 Rotary club young chef
 Faraday Challenge

specification to direct their thinking. Includes understanding of signage and logos to develop brands and convey visual messages.

Key Learning:

Use of CAD/CAM in design

Design of logos and typography

Making models to communicate ideas

Skills:

Understand how to develop design on CAD package

Use of basic CAD/CAM tools

How to set up and use a laser

Unit 6: Eco Design (Extension task)

Overview

This introduces the concept of designing with the environment in mind, using examples from a range of familiar products, re-thought in keeping with the Six Rs principles. It discusses a product's life cycle and the 'cradle to the grave' concept. Using waste materials students are asked to design and make a new product prototype reusing waste items.

Key Learning:

Understanding implications of designing product in the real world

Environmental issues affecting every product being produced

Year 8

Unit 1 – Analyse That

Overview

Analysis of famous or household products to help learn about products and inspire for own design work. Students consider a number of products and use the analysis to help them develop their own design specification for a new product.

Key Learning:

Learn how to analyse products

How existing product can be a rich source of information

Skills

Develop designs based around the product as inspiration and new specification

Use of drawing rendering and modelling to communicate designs

Unit 2 – Salad Servers

Overview

Students develop an understanding for a basic product: salad servers and explore how design can improve the product. They investigate a range of options before producing a specification, making examples and considering finishing techniques.

Key learning

Understand the different needs to the client using the product

Develop design that show understanding through making

Skills

Manufacture using appropriate tools and equipment

Develop a successful product that relates to the client's needs

Unit 3 – Moody Lights

Overview

Students manufacture a mood light using an RGB LED or one or more Red, Green, Blue LEDs that will respond to the environment where it's located, using such sensors as heat, light, movement/ vibration. Following an introduction to 'softwired' microcontroller circuits and different the sensors and outputs, students go on to create a circuit diagram and programme from a range of options before planning the production and testing of the boards.

Key Learning:

Know what components are needed for a sensing circuit to operate

Make use of sensor systems to affect the operation of a system

LED series resistor calculations
 Create suitable controlling software to operate the mood light in an appropriate manner
 Know how to power a circuit using a number of power supply options
 Skills:
 Use circuit simulator software to investigate/test circuit ideas
 Creation of a PCB from a circuit diagram
 Develop a program that solves a particular problem
 Develop a program that uses a sensor as an analogue input.
 Relevant testing of prototypes

Unit 4: Design and make your school lunch'
Overview
 Working within national constraints of the School Food Standards students will design an appropriate main meal for school lunches. They will know how to plan, prepare, adapt and cook a suitable meal for a given need, understanding the requirements for it to be nutritious and healthy. Practical sessions include adapting, preparing and evaluating their dishes against set criteria. They will also understand the benefits of a balanced school lunch and suggest further recipe ideas compared to the Eatwell Guide group of foods.
 Key Learning:
 Understanding the constraints associated with production of school meals
 Understanding of a wider range of ingredients and cookery methods
 Costing and nutritional analysis of recipes
 Skills:
 Preparation and cooking of a variety of ingredients
 Application of good food safety practices
 Use of a wider range of equipment
 Research and trialling of suitable dishes
 Handling high risk food

Year 9

Unit 1 – Evolution and the future
Overview
 Through evaluating products that have changed e.g. can openers, mobile phones, irons, vacuum cleaners etc. students gain an understanding of evolution and what factors make products change. Using the concept of biomimicry they design the next generation of their chosen product for the future.
 Key learning:
 Understand how and why product change
 Know about biomimicry in the design of the future

Unit 2 – Learning to Learn
Overview
 Students design and make an educational product for a child, identifying a 'client' (child between 0-5) and understanding her needs, wants and interests; conducting product analysis, generating ideas and a specification, prototyping and planning production, manufacturing and evaluating the product.
 Key learning:
 Developing a brief and planning out a project
 Researching needs of a client
 Use of appropriate tools and materials
 Evaluation as a tool to progress in design
 Skills
 Applying skills learnt throughout projects of planning design and manufacture
 Selecting tools and equipment appropriately to manufacture a successful prototype

<p>Evaluating and testing product and suggesting improvements in relation to developed criteria</p> <p>Unit 3: Event food</p> <p>Overview</p> <p>Investigating the breadth and variety of food served at festivals and events. Students determine what needs to be considered when considering food provision, including preparing suitable dishes and considering environmental issues.</p> <p>Key learning:</p> <p>Determining what the consumer wants and needs from food at a festival/ event</p> <p>Working out costs and profitability</p> <p>Environmental considerations of serving food and minimising waste at a festival</p> <p>Skills:</p> <p>Adapting existing recipes to meet a need</p> <p>Application of safe working practices</p> <p>Analysis of nutritional content of a dish</p> <p>Use of a wider range of equipment and ingredients to independently produce a savoury main dish with accompaniments</p>		
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Links to Key Stage 4 and 5	Attached Documentation	
<p>Our Ks3 SOL has been mapped out against the Design and Technology GCSE specification this allows students to follow key subject areas all be it at a lower level. Units have been planned so that students are assessed against NEA assessment objectives. Research techniques, the design process, sketching skills, material properties and making skills are all transferable into Ks5.</p>	Document	<i>Tick if present</i>
	Department Improvement Plan	
	Exam Review	
	Curriculum and Progression Map for Year 7-13	
	Dept Assessment Calendar 7-9	
	Assessment Tasks & Criteria	
	Terminal Assessment(s)	
	Schemes of Work Year 7-9	