KS3 Curriculum Overview: Technology – YEAR 7

Rationale: In Year 7 we provide a range of units that cover a wide range of knowledge, skills, materials and processes. We aim to provide students with a wide range of experiences developing the core knowledge as well as the skills to manufacture a range of products. The skills and knowledge cross over a selection of units enabling students to reinforce learning and apply it across different materials areas.

Term / Length of Unit	Outline	Assessment	Home Learning	Resources	Reading	Knowledge/Skills End Points	Technology Curriculum Links
18 Lessons	**Cooking and Nutrition** This unit focuses on giving students an introduction to cooking and nutrition through both theory and practical experiences. Demonstrations will develop students' knowledge of a variety of practical skills and then they develop these skills to produce a variety of predominantly savoury dishes. Focus is on simple cutting techniques initially and getting to know the different parts of the cooker. Students will start to develop an understanding of healthy eating, basic nutrition, where food comes from and how to use ingredients based on their functionality.	**FAR 1** - Assessment of the practical skills in the making of a pasta salad **FAR 2** - Final summative assessment of the whole module. **END OF MODULE TEST**	**HL1**: Nutrients **HL2:** Where does fruit grow? **HL3:** Revision Clock	PowerPoints and work sheets on Staff share: Food and Nutrition: Main folders: Year 7: 2023-24: Lesson pps Practical booklet Theory Booklet HL sheets Store cupboard ingredients Variety of ingredients (students provide their own)	Key vocabulary used Core definitions of key words Guided reading for practical tasks Use of knowledge organisers	**Knowledge** • Understand and apply the basic principles of nutrition and health (NC bulletpoint 16) • Understand the source, seasonality and characteristics of a range of ingredients (NC bulletpoint 19) • Understand the principles of cleaning, preventing cross-contamination, chilling, cooking food thoroughly and reheating food until it is steaming hot (NC bulletpoints 16, 18) • Understand how to store, prepare and cook food safely and hygienically (NC bulletpoint 16) **Skills** • Start to become competent in a range of cooking techniques (for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways) (NC bulletpoint 18) • Start to develop independence in practical sessions (NC bulletpoint 17)	

18 Lessons	**Resistant Materials – Nightlight** This unit focusses mainly on students developing a knowledge of timbers and electronic components. Students are introduced to a range of practical skills and processes to manufacture a nightlight. Students will learn the health and safety aspects concerning a workshop and electronics suite to ensure safe working practices. CAD will also be introduced through the use of 2D Designer to generate and laser cut a graphic background.	**FAR 1.** - Assessment of Designing an acrylic backboard motif suitable for a chosen client. **FAR 2.** - Assessment of the practical skills in the manufacture of the product and whole understanding of whole module. **END OF MODULE TEST**	**Home Learning 1 –** Electronic Components **Home Learning 2** – Wood Theory	Full SOL with lesson resources generated through power points. PowerPoints and work sheets on Staff share. Theory Booklet HL Booklet **Materials;** Softwood, Plywood and acrylic. A selection of components and PCB. **Tools/Equipment;** A range of hand tools and powered equipment.	Key vocabulary used Core definitions of key words Guided reading for practical tasks Use of knowledge organisers	**Knowledge** • Understanding why designers change designs for their specific market. (NC bulletpoint 8) • Understanding of timbers – 3 families with names. (NC bulletpoint 12) • Knowing the difference between a hardwood and softwood tree. • Identifying a range of components and their functions. • Understanding the function and sequence of a circuit. (NC bulletpoint 14) • Knowing how to use a range of tools appropriately, safely and accurately. (NC bulletpoint 6) • Knowing what CAD/CAM is and how it is used. (NC bulletpoints 5, 6) **Skills** • Marking out using a steel rule and square. • Cutting timber accurately using a Tenon saw and bench hook. • Adhering a butt joint using PVA adhesive. • Drilling holes using a pedestal and micro drill. • Using 2D Designer to generate a design. • Using a laser cutter to manufacture acrylic background. • Using a soldering iron to solder components. • The use of a line bender to form and bend acrylic. (NC bulletpoints 6, 14)	

18 Lessons	**Textiles – Decorative bag** This unit focuses on giving student an introduction to Textiles, gaining an understanding of fibres and fabrics through research and product analysis. Students will gain practical skills of using specialist equipment and machinery to produce a decorative bag. Students will create samples to learn how to complete each decorative technique. Students will develop a knowledge of how fibres are produced and the uses for different fibres/fabrics in real life contexts, understanding their properties and functions. This project promotes students to be creative and use topics that interest them to create a uniquely designed bag.	**FAR 1.** - Assessment of fibres and fabric knowledge and application. **FAR 2.** - Assessment of the practical skills in the manufacture of their pencil case (final product). **FAR 3.** - Final Assessment of the whole module. **END OF MODULE TEST**	**HL 1** – Design ideas. 4 initial designs and a final design. **HL 2** – Fibres research task: Story board explaining the journey from Cotton plant to cotton shirt. **HL 3** – Revision clock	PowerPoints and work sheets on Staff share: Design and technology: Textiles: Year 7: Decorative bag project Material per student: 2 X A3 cotton, 2X nylon strap A range of hand tools and sewing machines.	Exam style questions Key vocabulary used Core definitions of key words Guided reading for practical tasks Research and write tasks. Use of knowledge organisers	**Knowledge** • Understand key factors in 'the environment' for example, climate change, pollution and landfill sites. (NC bulletpoint 11) • Understand how to apply decoration to products and why decoration is used. • Understanding the sources of fibres and how fibres are turned into fabrics (fabric construction). (NC bulletpoint 12) • Understand the different properties of key fibres and why they are used in particular products. • Understand how to conduct a product analysis and why product analyses are used in industry. • Understand how different factors affect the production of garments including working conditions. (NC bulletpoint 11) • Use a range of hand tools and sewing machines safely and confidently. (NC bulletpoints 5, 12, **Skills** • Specialist machinery: Sewing machines. • Specialist equipment: unpicker, fabric scissors, tailors chalk, needles, pins. • Drawing of design ideas and development of designs • Decoration by hand— decorative hand stitches, applique, buttons • Construction techniques —creating seams and hems, attaching straps • Marking out fabric using a template to cut out shapes (applique) • Placement of design elements to create final outcome (NC bulletpoint 6)	

18 Lessons	**Visual Communication – Pop art mug & packaging** This unit focuses on providing students with a foundation in graphic design. The unit has been developed to support graphic skills throughout all subject areas, such as hand drawing and rendering skills as well as digital design skills. Students will develop an understanding of graphic skills, equipment, packaging, rendering skills and investigate the design of a product through the context of pop art, including the development of colour and typography.	**FAR 1.** - Assessment of research in the Pop art movement and various design skills. **FAR 2.** - Assessment of the digital design skills and quality of students final product. **FAR 3.** - Final Assessment of performance within the whole module. **END OF MODULE TEST**	**HL 1** –Self identity mood board **HL 2** – Pop art inspired word design **HL 3** – Revision sheet	Full SOL. PowerPoints and work sheets on Staff share: Design and technology: Graphics: Year 7. **Materials-** Blank sublimation mugs Mug press Sublimation paper and printer Computers with 2D Design A3 card to print mug packaging design onto A range of hand tools and card Booklets	Key vocabulary used Core definitions of key words Guided reading for practical tasks Research and write tasks Use of knowledge organisers	**Knowledge** • Identify appropriate tools and be able to use them safely. (NC bulletpoint 6) • Understand the Pop art movement and its effect on the design world (NC bulletpoint 8) • Become familiar with 2D Design to present your design ideas. (NC bulletpoint 6) • Be able to use art skills such as mark making, collage and print within your design • Create samples of work inspired by Pop artists. . (NC bulletpoint 8) • Apply design techniques to a product • Complete quality control checks throughout practical work • Evaluate and critique work and samples (NC bulletpoint 10) **Skills** • Accurate cutting of card and safely using craft knives and safety mats. • Using CAD to create designs. • Rendering skills using a range of media to show texture and tone. • Using a range of artist techniques using a range of mediums. (NC bulletpoint 6)	

KS3 Curriculum Overview: Technology – YEAR 8

Rationale: In Year 8 we provide a range of units that cover a wide range of knowledge, skills, materials and processes. We aim to provide students with a wide range of experiences developing the core knowledge as well as the skills to manufacture a range of products. The skills and knowledge cross over a selection of units enabling students to reinforce learning and apply it across different materials areas. A majority of the skills developed within Y8 will be an extension and development of what the students

Term / Length of Unit	Outline	Assessment	Home Learning	Resources		Knowledge/Skills End Points	Technology Curriculum Links
18 Lessons	**Cooking and Nutrition** This unit focuses on building on the work covered in year 7 in cooking and nutrition through both theory and practical experiences. Demonstrations will develop students' knowledge of a variety of practical skills and then they develop these skills to produce a variety of predominantly savoury dishes. The work is based more on meals and develops understanding of a range of savoury main meals. Students build on developing an understanding of healthy eating and nutrition and link to diseases. Work continues on where food comes from and how to use ingredients based on their functionality.	**FAR 1 -** Assessment of the practical skills in the making of a tuna and pasta bake **FAR 2 -** Final summative assessment of the whole module. **END OF MODULE TEST**	**HL1**: Bread **HL2:** Diet related illnesses **HL3:** Revision Clock	PowerPoints and work sheets on Staff share: Food and Nutrition: Main folders: Year 8: 2023-24: Lesson pps Practical booklet Theory Booklet HL sheets Store cupboard ingredients Variety of ingredients (students provide their own)	Key vocabulary used Core definitions of key words Guided reading for practical tasks Use of knowledge organisers Exam style question Research and write tasks.	**Knowledge** • Understand and apply the principles of nutrition and health (NC bulletpoint 16) • Understand the source, seasonality and characteristics of a range of ingredients (NC bulletpoint 19) • Understand the principles of cleaning, preventing cross-contamination, chilling, cooking food thoroughly and reheating food until it is steaming hot (NC bulletpoints 16, 18) • Understand how to store , prepare and cook food safely and hygienically (NC bulletpoint 16) **Skills** • Become competent in a range of cooking techniques (for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways) (NC bulletpoint 18) • Work independently following a recipe (NC bulletpoint 17)	
18 Lessons	**Resistant Materials Kinetic Balancer** This unit focusses on students developing an understanding of metals. The work covered explores the range of groups and properties of metals. Students can design an acrylic counterweight and manufacture a kinetic balancer exploring balance points to create an effective	**FAR 1.** - Assessment of Product Analysis using ACCESSFM. **FAR 2.** - Assessment of the practical skills in the manufacture of the kinetic balancer and of	Students will work through a home learning booklet where knowledge and understanding of both research and metallurgy are reinforced.	Full SOL with lesson resources generated through power points. PowerPoints and work sheets on Staff Resources. Theory Booklet HL Booklet **Materials**;	Key vocabulary used Core definitions of key words Guided reading for practical tasks Use of knowledge organisers	**Knowledge** • Understanding and interpretation of Perspective drawings • Understanding metals and their properties, 3 families with names. . (NC bulletpoint 6) • Understanding the principals of mechanisms. (NC bulletpoint 13) • Accurately measuring and marking out of materials.	

	desk decoration. Students will explore a range of processes and techniques to manipulate materials including hand tools, jigs, CAD/CAM and machine orientated processes.	the whole module. **END OF MODULE TEST**		Aluminium sheet, steel bar, aluminium bar and acrylic. **Tools/Equipment;** A range of hand tools and powered equipment.		• Understanding of the use and function of a range of hand tools and machinery. . (NC bulletpoint 6) • Knowing how to use a range of tools appropriately, safely and accurately. **Skills;** • Marking out accurately. • Cutting materials accurately and safely using a range of tools. • Selecting from a choice of materials to manufacture a product. • Drilling holes accurately using with a jig. • Using 2D Designer to generate a design. • Using a laser cutter to manufacture the balancer where possible. (NC bulletpoints 5, 6, 7, 14)	
18 Lessons	**Graphics – Robot Project** In this project students will gain drawing and digital skill to create an art movement phone holder robot made from different materials. They will expand on the resistant materials skills by using wood, metal and glue to make their unique robot. They will enhance their CAD skills to create art, stickers and barcodes. Students will expand their knowledge of Typography and gain new skills such as drawing in perspective, isometric and orthographic. As well as	**FAR 1. –** Isometric Drawing **FAR 2. –** Final Robot Drawing **END OF MODULE TEST**	HL 1 – Art Movements Mood Board HL 2 – Rendering HL 3 – Branding	PowerPoints and work sheets on Staff share: Design and technology: Graphics: KS3 Year 8: Robot Project Material per student: -250mm Kiln Baked Carcass Wood -30cm Rope A range of vinyl shapes in different colours	Exam style questions Key vocabulary used. Core definitions of key words Guided reading for practical tasks Research and write tasks. Use of knowledge organisers	**Knowledge:** • To learn about art movements and understand how they formed and what influence they had. • To practice isometric and orthographic drawing. • To learn how to render objects to make them look realistic using art techniques • To gain an understanding about branding and learn how its used and why. • To learn about different materials and how they are used for different performances. **Skills:** • Expanding CAD skills by learning Adobe Illustrator	

	learning to render and draw effectively. Students will gain an understanding about 4 different art movements and learn how to communicate the art. And learn about Graphics as a subject and how branding is important within the industry.					• Lean how to use the cricut machine and the use of different materials • The use of pyrographer to etch into wood to create a print • To measure and mark out accurately when making changes to the robot. • Selecting a choice of materials for the robot • Learn how to create a sticker and laminate prints. • To learn about the sublimation and heat press machine to create prints for the robot. (NC bulletpoints 1, 4, 5, 6, 11, 12, 15)	
18 Lessons	**Textiles – New slashed project** In this project students will gain practical skills of using specialist equipment and machinery to produce a slashed artefact. This project promotes the correct setting up, operation and safe use of the sewing machine and the necessary attachments and tools. Students will need to prepare fabrics, measure and mark out accurately to produce effective slashing, correct insertion of zip fastening in the production of a quality finished product. Students will revisit a knowledge of how fibres are produced and the uses for different fibres/fabrics in real life contexts, understanding their properties and functions. Particular emphasis will be on smart and modern materials with a	**FAR 1.** – Smart and Modern Textiles assessment **FAR 2.** - Assessment of the practical skills in the manufacture of slashed artefact (final product). **FAR 3.** - Final Assessment of the whole module. **END OF MODULE TEST**	**HL 1** – 6R's **HL 2** – Smart and Modern Textiles exam style question **HL 3** - Revision clock	PowerPoints and work sheets on Staff share: Design and technology: Textiles: KS3 Year 8: New Slashed project Material per student: 2X Cotton (A3) 2 X Denim (A3) 1X Zip A range of hand tools and sewing machines (including zipper feet which must be counted in at the end of each lesson) Iron, scissors, tailors chalk, rulers.	Exam style questions Key vocabulary used Core definitions of key words Guided reading for practical tasks Research and write tasks. Use of knowledge organisers	**Knowledge:** • Deeper understanding of fibres and fabrics (build from year 7) including product analysis. • To understand the differences and uses for smart and modern textiles. • To practise answering an exam style question on Smart and Modern textiles • To successfully create a finished artefact with demonstrating successful use of the sewing machine to create slashed surface pattern. (NC bulletpoints 6, 12, 10, 8, 5) **Skills:** • Understanding how to set up and safely operate the sewing machine. • Accurate control of the sewing machine (including reverse, winding a bobbin and changing a presser foot) • Correct preparation of fabrics, measuring and marking out • Inserting a working zip fastening (or alternative where appropriate)	

						• Construction of an artefact – understanding key terms such as best sides facing, seams and hems. (NC bulletpoints 6,7)	

National Curriculum

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture], and industrial contexts [for example, engineering, manufacturing, construction, food, energy, agriculture (including horticulture) and fashion].

When designing and making, pupils should be taught to:

Design

1. use research and exploration, such as the study of different cultures, to identify and understand user needs
2. identify and solve their own design problems and understand how to reformulate problems given to them
3. develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations
4. use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses
5. develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools

Make

6. select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture
7. select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties

Evaluate

8. analyse the work of past and present professionals and others to develop and broaden their understanding
9. investigate new and emerging technologies
10. test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups
11. understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists

Technical knowledge

12. understand and use the properties of materials and the performance of structural elements to achieve functioning solutions

13. understand how more advanced mechanical systems used in their products enable changes in movement and force
14. 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]
15. 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].

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

16. understand and apply the principles of nutrition and health
17. cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet
18. 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]
19. understand the source, seasonality and characteristics of a broad range of ingredients.