



The Ridgeway School & Sixth Form College

...Inspiring Learners For Their Future

*'Our shared vision is that our students, colleagues and families will be part of a **FAIR** community.'*

*We will support our school **Family** to **Achieve** their potential, and **Inspire** students to **Reach** the very best destinations.'*



Design and Technology Curriculum Overview

RESPECT | HONESTY | ENDEAVOUR | CREATIVITY | COMMUNITY

Year 7 Design & Technology Curriculum Overview – Subjects taught in rotation over 12 week modules

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 7	<p>Food Basic skills in preparation and cooking:</p> <ul style="list-style-type: none"> - Weighing and measuring - Bridge and claw method - Rubbing in method - Safe use of the knife and oven <p>The Eatwell Guide (nutrients and their sources) Sensory Analysis Recipe modification</p>	<p>Graphics</p> <ul style="list-style-type: none"> ● Introduction to colour theory and rendering ● Understanding motions theory ● Developing skills using craft knife and cutting mats safely to create pop up pages ● Understanding how levers and linkages can change direction of movement 	<ul style="list-style-type: none"> ● Understanding how 'modelling' can prove and test ideas ● Resources and materials <p>Card, cutting mat, craft knives, stationary, computers</p> <ul style="list-style-type: none"> ● Health & Safety <p>Safe use of craft knife and cutting mat via demonstration and student practice</p> <ul style="list-style-type: none"> ● Imaginative project to create and illustrate story via moving book 	<p>Product Design</p> <ul style="list-style-type: none"> ● Introduction to tools and equipment <p>Basic hand tools, soldering iron</p> <ul style="list-style-type: none"> ● Health & Safety in the workshop <p>Soldering iron, electronics</p> <ul style="list-style-type: none"> ● Design <p>Target market Hand designs converted onto 2D design</p> <ul style="list-style-type: none"> ● CAD / CAM <p>2D Design. Laser cutter</p> <ul style="list-style-type: none"> ● Materials <p>Electronic components</p> <ul style="list-style-type: none"> ● Construction 	<ul style="list-style-type: none"> ● Evaluation <p>Evaluate final product</p>	<ul style="list-style-type: none"> ● Resources and materials <p>Materials/fabrics, threads, cord</p> <ul style="list-style-type: none"> ● Embellishment <p>Basic hand embroidery stitches with modifications</p> <ul style="list-style-type: none"> ● Design <p>Presentation, use of colour, annotation</p> <ul style="list-style-type: none"> ● Construction <p>Pocket, casing, plain seam</p> <ul style="list-style-type: none"> ● Quality Checks <p>Accuracy: 0.5 cms embroidery stitch length, measurements for casing, seam allowance</p>
					<p>Textiles</p> <ul style="list-style-type: none"> ● Introduction to tools and equipment <p>Small equipment, sewing machine, iron</p> <ul style="list-style-type: none"> ● Health & Safety <p>In the workshop, use of sewing machine & iron</p> <ul style="list-style-type: none"> ● Appreciation of designs from a chosen genre <p>Contemporary embroidery</p>	

Year 8 Design & Technology Curriculum Overview – Subjects taught in rotation over 12 week modules

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 8	<p>Food Development of skills in preparation and cooking:</p> <ul style="list-style-type: none"> - Safe use of the oven - Accuracy and precision - Knife skills (dicing) - Variety of cooking methods <p>Nutrient sources and functions Analysing food packaging (for sugar content) Recipe design and modification</p>	<p>Graphics</p> <ul style="list-style-type: none"> ● Logo and trainer graphic designs ● Understanding target audiences and how to meet their needs including those with disabilities, cultural identities and ages <p>Knowledge and understanding trainer performance and the importance of ergonomics and anthropometrics incorporated within designs</p>	<p>Resources and materials Stationary, computers, fine liners and examples</p> <p>Brands and logos Brand pull, images and pricing (including designers) Introduction to digitally supported designing</p> <p>CAD/Word drawing tools, Paint</p>	<p>Product Design</p> <ul style="list-style-type: none"> ● Introduction to tools and equipment <p>Hand equipment Marking tools Belt sander Disc sander</p> <ul style="list-style-type: none"> ● Health & Safety <p>Recap and reinforce in the workshop</p> <ul style="list-style-type: none"> ● Design <p>Specifications Hand design</p> <ul style="list-style-type: none"> ● CAD / CAM <p>2D Design to convert image into vectors</p> <ul style="list-style-type: none"> ● Materials <p>Ply wood</p> <ul style="list-style-type: none"> ● Construction <p>Finger joints Lap joint</p>	<p>Evaluation Final product</p>	<ul style="list-style-type: none"> ● Resources and materials Cotton calico fabric, threads, magic touch heat transfer paper ● Modelling & embellishment Heat transfer of design, more complex hand embroidery stitches, machine embroidery. ● Design 'In the style of' Pop Art. Links to Andy Warhol and/or Roy Lichtenstein. Presentation and annotation ● Construction Neatened plain seam, facings ● Quality checks Links to Pop Art, accuracy and evenness of hand & machine embroidery. 1.5 cms seam allowance, trimmed corners
					<p>Textiles</p> <ul style="list-style-type: none"> ● Revisit tools and equipment Small equipment, computerised use of sewing machine, iron, heat press ● Health & Safety <p>In the workshop, use of sewing machine, iron & heat press</p> <ul style="list-style-type: none"> ● Colour theory Colour wheel, primary, secondary, complimentary colours ● Research – appreciation of designs from a chosen genre Pop Art:- Artists and characteristics 	

Year 9 Design & Technology Curriculum Overview – Subjects taught in rotation

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 9	<p>Food Development of more complex skills in preparation, cooking and presentation:</p> <ul style="list-style-type: none"> - Accuracy and precision - Garnishing - Variety of knife and cooking methods - Complex techniques <p>Food provenance (grains and cereals) Diet analysis Sensory analysis Recipe design and modification</p>	<p>Graphics Introduction to Photoshop Rendering previously in drawn designs digitally with colour Computer Aided Design</p> <p>Existing Playing cards How playing cards have evolved historically</p> <p>Skills workshops linked to designers (Summer Term) Technical drawing, illustration, printed Graphics</p>	<p>Resources Computers with Photoshop, fine liners, Playing cards</p> <p>(Summer term) Water colours, pen and ink, craft knives, cutting mats</p> <p>Health & Safety Reinforce safe use of craft knives and cutting mats</p> <p>Research History timeline of the 'playing card'</p>	<p>Product Design</p> <ul style="list-style-type: none"> ● Introduction to tools and equipment ● Health & Safety in the workshop ● Design ● CAD / CAM ● Materials ● Construction 	<ul style="list-style-type: none"> ● Quality checks ● Evaluation 	<ul style="list-style-type: none"> ● Resources and material <p>Greater range of threads, printing techniques and range of fabrics</p> <ul style="list-style-type: none"> ● Modelling and embellishment <p>Curved stitching, block embroidery, printing, paper pattern making</p> <ul style="list-style-type: none"> ● Design <p>One-line drawings, modifying portraits & photos, repeat patterns</p> <ul style="list-style-type: none"> ● Construction <p>Embroidered stretched canvas portrait. Circular travel bag, with casing</p> <ul style="list-style-type: none"> ● Quality Control <p>Accuracy of curved stitching and block embroidery. Repeat patterns, even casing.</p>
					<p>Textiles</p> <ul style="list-style-type: none"> ● Tools and equipment <p>Independent use of equipment</p> <ul style="list-style-type: none"> ● Health and safety <p>In the workshop, use of dyes and printing inks</p> <ul style="list-style-type: none"> ● Research-appreciation of designs from chosen genre <p>Contemporary embroidery - <i>Maurizio Anzeri & Victoria Villasana</i></p>	

Year 10 GCSE Design and Technology Curriculum Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 10	<p>3.1 Core Technical Principles</p> <ul style="list-style-type: none"> Materials and their working properties New and Emerging technologies Energy Generation and Storage surface treatments and finishes <p><u>Practical Project - Introductory unit – Skills Stick</u></p> <p>Developing theory and practical skills in Timbers, Polymers and Metals.</p>	<p>3.1 Core Technical Principles</p> <ul style="list-style-type: none"> Developments in new materials Systems approach to designing Mechanical devices Materials and their working properties <p><u>Practical Project - Designer inspired Speaker Project</u></p> <p>Developing theory and practical skills in Polymers, electronics, CAD/CAM and design movements.</p>	<p>3.2 Specialist Technical Principles</p> <ul style="list-style-type: none"> selection of materials or components forces and stresses ecological and social footprint sources and origins the work of others <p><u>Practical Project - Designer inspired Speaker Project</u></p> <p>Developing theory and practical skills in Polymers, electronics, CAD/CAM and design movements.</p>	<p>3.2 Specialist Technical Principles</p> <ul style="list-style-type: none"> using and working with materials stock forms, types and sizes scales of production specialist techniques and processes <p><u>3.3 Designing and making principles</u></p> <ul style="list-style-type: none"> investigation, primary and secondary data environmental, social, economic design strategies communication of design ideas <p><u>Practical Project - Mini NEA project</u> Identifying,</p>	<p>3.3 Designing and making principles</p> <ul style="list-style-type: none"> prototype development selection of materials and components tolerances material management specialist tools and equipment specialist techniques and processes <p><u>Practical Project - Mini NEA project</u> Identifying, investigating and outlining design possibilities.</p>	<p>Non examined assessment (NEA)</p> <ul style="list-style-type: none"> Students will produce a written or digital design portfolio. Identification of design context and problem. Researching clients and existing products. Questionnaires and consumer profiles. Specification Initial design ideas.

				investigating and outlining design possibilities.		
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Year 11 GCSE Design and Technology Curriculum Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 11	<u>Non examined assessment (NEA)</u> <ul style="list-style-type: none"> • Analysis of ideas. • Evaluation of ideas. • Development of ideas through sketches. • Ergonomics. 	<u>Non examined assessment (NEA)</u> <ul style="list-style-type: none"> • Physical and CAD modelling, testing and evaluation of ideas alongside a user. • Final design. • Orthographic projection. • Exploded views and cutting lists. 	<u>Non examined assessment (NEA)</u> <ul style="list-style-type: none"> • Production plans • Risk Assessments • Material preparations • Manufacturing of product. 	<u>Non examined assessment (NEA)</u> <ul style="list-style-type: none"> • Manufacturing and assembly of product. • Manufacturing diary. 	Revision for exam	Exam

A Level Product Design Curriculum Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 12	<p>Technical principles</p> <p>1.1 – Materials and their applications.</p> <p>1.2 Performance characteristics of materials</p> <p>Design and making principles</p> <p>2.1 Design methods and processes.</p> <p>2.2 Design theory.</p>	<p>Technical principles</p> <p>1.3 Enhancement of materials</p> <p>1.4 Forming, redistribution and addition processes.</p> <p>1.5 The use of finishes.</p> <p>Design and making principles</p> <p>2.3 Technology and cultural changes</p> <p>2.4 Design processes</p> <p>2.5 Critical analysis and evaluation</p>	<p>Technical principles</p> <p>1.6 Modern and industrial scales of practice.</p> <p>1.7 Digital design and manufacture.</p> <p>Design and making principles</p> <p>2.6 Selecting appropriate tools, equipment and processes</p>	<p>Technical principles</p> <p>1.8 The requirements for product design and development.</p> <p>1.9 Health & safety</p> <p>Design and making principles</p> <p>2.7 Accuracy in design manufacture</p> <p>NEA – Identifying and investigation design possibilities</p> <p>Students will begin to investigate and develop a design context with enough scope to meet the AO's.</p>	<p>Technical principles</p> <p>1.10 Protecting designs and intellectual property.</p> <p>1.11 Design for manufacturing, maintenance, repair and disposal</p> <p>1.12 Feasibility studies</p> <p>Design and making principles</p> <p>2.8 Responsible design</p> <p>NEA - AO1 Section A – Identifying and investigating design possibilities</p> <ul style="list-style-type: none"> Rationale for chosen context clearly identified. 	<p>1.13 Enterprise and marketing in the development of products.</p> <p>1.14 Design communication.</p> <p>Design and making principles</p> <p>2.9 Design for manufacture and project management</p> <p>2.10 National and international standards in product design</p> <p>NEA - AO1 Section A – Identifying and investigating design possibilities</p> <ul style="list-style-type: none"> Rationale for chosen context clearly identified.
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6

Year 13	AO1 Section B – Producing a design brief and specification Produce a clear and challenging design brief and fully detailed design specification reflecting thorough consideration of investigations undertaken.	AO2 Section C – Development of design proposal(s) Generate design proposals that take full account of the design brief and specification. Modelling is a key element of this assessment criterion. Produce a comprehensive and fully detailed manufacturing specification.	AO2 Section D – Development of design prototype(s) Manufacturing a prototype using all potential resources, tools machines and equipment to a high level. On-going development and directly related to the design proposals. On-going testing and evaluation	AO3 Section E – Analysing and evaluating On-going analysis and evaluation that informs the manufacture of the prototype. Testing and fitness for the needs of the client/user. Critical analysis of the final prototype. Modifications and improvements including consideration of levels of production.	<u>Exam preparation</u> Theory content and testing	Students have completed the course.
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