

# Springwood High School Design and Technology Curriculum Plan

## **Our Vision:**

To improve young people's practical skills and subject knowledge in Design, Textiles (fabric) R.M (wood, polymers, metals, circuits) and Graphics (paper and card). New and emerging technologies, Sustainability issues

Design and Technology Programme of study key stage three national curriculums in England.

<https://www.gov.uk/government/publications/national-curriculum-in-england-design-and-technology-programmes-of-study>

Exam boards: KS4 – AQA Design & Technology <https://www.aqa.org.uk/subjects/design-and-technology/qcse/design-and-technology-8552/specification-at-a-glance>

## **Brief overview of topics, themes, skills or key questions for each term:**

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
7	Introduction to Graphics: Develop drawing skills. Measuring Develop colour application. Workshop Health and Safety Timbers: materials, their characteristics and their working functions	Timber surface finishes Standard components Tools, equipment and machinery How plywood is made	Carpentry skills, techniques and processes Evaluations to examine strengths and weaknesses Retrieval techniques to develop subject knowledge, key words and terminology	Develop design skills: isometric drawings, orographic and exploded drawings One point perspective 3D and 2D Net packaging	.Introduction to Graphics: Paper and boards, smart materials learn about materials and their characteristics Health and safety Soldering (joining method, circuits) Fastenings and standard components Finishes Scoring and folding How paper is made	Iterative design Annotations Logos, fonts and typography Evaluations to examine strengths and weaknesses Retrieval techniques to develop subject knowledge, key words and terminology
	Practical: Free hand sketching Tonal shading and mark making	Practical: Joinery: comb joints, dowel joints, butt joints, mitre joint Coping saw shape	Practical: Joinery: comb joints, dowel joints, butt joints, mitre joint Coping saw shape	Design skills.	Practical: Soldering a circuit, incorporating thermochromics	Practical: Application of colour and experiment with graphic finishes Net box construction techniques

## Springwood High School Design and Technology Curriculum Plan

8	<p>Textiles: Learn about materials and their characteristics. Learn to sew. Reinforce Health &amp; Safety rules.</p>	<p>Introduction to textiles and fashion skills, techniques and processes – fastening and joining methods Finishes and standard components How fabric is made Secondary research to inspire ideas Iterative design for applique Evaluations to examine strengths and weaknesses Retrieval techniques to develop subject knowledge, key words and terminology</p>	<p>Introduction to metal skills, techniques and processes – fastening and joining methods Finishes and standard components</p>	<p>Introduction to polymers skills, techniques and processes – fastening and joining methods Finishes and standard components Iterative design Manufacturing and industry processes: injection moulding, blow moulding, line bending, laser cutter and vacuum forming Evaluations to examine strengths and weaknesses Retrieval techniques to develop subject knowledge, key words and terminology</p>	<p>Introduction to stand alone lessons Motions Forces Mechanism Structures</p> <p><b><u>Timbers</u></b> Timbers: materials, their characteristics and their working functions</p> <p>Timber surface finishes Standard components Tools, equipment and machinery How plywood is made</p>	<p>Cad Cam Computer aided design And computer aided manufacturing</p> <p><b><u>Timbers</u></b> Carpentry skills, techniques and processes Evaluations to examine strengths and weaknesses Retrieval techniques to develop subject knowledge, key words and terminology</p>
	<p>Practical: Theory – develop subject knowledge Mind map design Duel coding using imagery</p>	<p>Practical: Hand embroidery stitches. Sewing on buttons Applique</p>	<p>Practical: Theory – develop subject knowledge Mind map design Duel coding using imagery</p>	<p>Practical: Teacher demonstration: vacuum forming, laser cutter and line bending Acrylic key ring Blister packaging</p>	<p>Practical: Theory – develop subject knowledge Mind map design Duel coding using imagery</p>	<p>Practical: Develop IT and Cad skills. Joinery: comb joints, dowel, joints, butt joints, mitre joint Coping saw shape</p>

## Springwood High School Design and Technology Curriculum Plan

9	<p>History of Design UK Introduction to Art movements and British designers</p>	<p>Sustainability Issues: Factors affecting material choice including culture, social &amp; economic: 6R's, LAC, Fairtrade, finite and non-finite.</p>	<p>Develop design skills: isometric drawings, orthographic and exploded drawings One point perspective 3D and 2D Net packaging</p>	<p>Mixed Media Projects Textiles and fashion skills, techniques and processes – fastening and joining methods Finishes and standard components How fabric is made Iterative design Secondary research to inspire applique ideas Evaluations to examine strengths and weaknesses Retrieval techniques to develop subject knowledge, key words and terminology Production plan</p>	<p>Mixed Media Projects Introduction to polymers skills, techniques and processes – fastening and joining methods Finishes and standard components Iterative design Manufacturing and industry processes: injection moulding, blow moulding, line bending, laser cutter and vacuum forming Evaluations to examine strengths and weaknesses Retrieval techniques to develop subject knowledge, key words and terminology</p>	<p>Timbers: materials, their characteristics and their working functions Timbers: materials, their characteristics and their working functions Timber surface finishes Standard components Tools, equipment and machinery How plywood is made Iterative design Secondary research to inspire ideas Design brief and specification Carpentry skills, techniques and processes Evaluations to examine strengths and weaknesses Retrieval techniques to develop subject knowledge, key words and terminology</p>
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	<p>Practical Pastiches</p>	<p>Practical Mind map design Duel coding using imagery</p>	<p>Design skills</p>	<p>Practical Hand embroidery stitches. Sewing on buttons Applique Plain seams Zig-zag stitch Double and single hems</p>	<p>Practical Acrylic key ring Mobile phone holder Line bending</p>	<p>Practical Bookends: Joinery: comb joints, dowel, joints, butt joints, mitre joint Coping saw shape</p>
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## Springwood High School Design and Technology Curriculum Plan

10	<p>Reinforcing freehand sketching            Maths: measuring, angles            Tonal shading (hatch, cross, block rendering)            Isometrics &amp; orthographic drawing            Fonts/Typography/logos            A range of design and annotations (literacy), using creativity and imagination inspired from computer secondary research – inspiration – the work of others’            Understand and apply iterative design            Net packaging            CAD/CAM: 2Design, laser cutter            Prototyping: templates, jigs, toiles            Practical: scoring, folding, graphics, binding, mechanisms            Literacy: Use key design and technology terminology            The categorisation of the types and properties of materials:            The categorisation of the types and properties of materials:</p>	<p>The categorisation of the types and properties of materials:            Polymers: thermoforming and thermosetting            Distillation            Chemistry – cross over              6R’s – sustainability and environmental factors            Life Cycle Assessment with finite and non-finite resources. Social and economic issues.</p>	<p>Timbers: materials, their characteristics and their working functions              Timber surface finishes            Standard components            Tools, equipment and machinery            How plywood is made            Carpentry skills, techniques and processes            Evaluations to examine strengths and weaknesses            Retrieval techniques to develop subject knowledge, key words and terminology</p>	<p>Reinforcing textiles and fashion skills, techniques and processes – fastening and joining methods            Finishes and standard components            How fabric is made            Secondary research to inspire ideas            Iterative design for applique            Evaluations to examine strengths and weaknesses            Retrieval techniques to develop subject knowledge, key words and terminology</p>	<p>Art Movements            History of Design UK            Introduction to Art movements and British designers            Anthropometrics            Ergonomics              Introduction to mock NEA section A, B and C            Mind maps            Production plans            Design briefs and specifications            Client interviews            Iterative designs</p>	<p>Introduction to stand alone lessons            Motions            Forces            Mechanism            Structures              NEA <b><u>1<sup>st</sup> June.</u></b>              D&amp;T AQA Contextual Challenge released on this day.              Students can select their specialism for this project: Textiles, R.M, or Graphics or combine a selection of materials and skills.            Section A:            Mind map and problem.            Product analysis to inspire ideas.            Introduction into Art movements.            Learn about production processes.</p>
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	Papers and boards and finishes. Paper and board standard components How paper is made					
	Practical Develop design and graphics skills	Practical Acrylic twisted keyring or layered sweet effect keyring – ideal for polishing finish. Compare laser cut edge and polish finish.	Practical Samples: Joinery: comb joints, dowel, joints, butt joints, mitre joint Coping saw shape	Practical Hand embroidery stitches. Sewing on buttons Applique Plain seams Zig-zag stitch Double and single hems	Practical Pastiches	Theory – develop subject knowledge Mind map design Duel coding using imagery
11	D&T NEA: 50% of GCSE grade.  Students can select their specialism for this project: Textiles, R.M, or Graphics or combine a selection of materials and skills. Section B: Design brief & spec Artist & Designer research to inspire concepts. Material research and characteristics.	D&T NEA:  Section C/D/E Generating Design ideas. Development of designs Final design concepts.  Section E/F: Realisations of ideas: Prototyping of ideas. Evaluations on-going.	D&T NEA:  Production Plan Specification Final evaluation  Revision: AQA Exam board BBC Bitesize Resources Knowledge organisers Retrieval techniques to develop subject knowledge, key words and terminology	Revision: AQA Exam board BBC Bitesize Resources Knowledge organisers Retrieval techniques to develop subject knowledge, key words and terminology	Exam May 2021 Written Examination (50% of GCSE Grade)	Exam May 2021

## Springwood High School Design and Technology Curriculum Plan

	<p>Students can select their specialism for this project: Textiles, R.M, or Graphics or combine a selection of materials and skills.</p> <p>Advanced Practical Skills: Joining methods: Soldering</p>	<p>Advanced Practical Skills: Joining methods Brazing. Laminating &amp; Sewing machine.</p> <p>Advanced Practical Skills: Laser cutter</p> <p>Clock made in acrylic, fabric, wood, card or a range of materials.</p>	<p>Advanced Practical Skills: Joining methods: Acrylic (laser cutter), Carpentry &amp; Graphics.</p>	<p>Practical - retrieval skills, techniques and processes</p> <p>Revision: tips and techniques for the written exam, practise papers</p>	<p>Written Examination (50% of GCSE Grade)</p>	

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### **Enrichment Activities:**

Super Learning Days: Year 7 Industrial Awareness Day (learn about environmental and sustainable issues, 6R's and materials).

Competitions: Year 8-9 Rotary Club D&T Competition (Venue KLA. Date November 2021).

Fashion Show Design Competition: Open to all year groups.

Trips: Year 10, 11, 12 & 13 Clothes Show Trip (Venue being confirmed)

Open Evenings: Year 9 & 10's can volunteer as ambassadors to promote D&T to Year 6's Open Evening.

Clubs & Support:

- Year 7 - 10: Fashion & Textiles Club (Every Tuesday) with Miss Markwell (October).
- Year 7 – 10 D&T Club (Every Wednesday) with Mr Austin (October)
- T4 is open every lunch-time for student's to work with Miss Markwell for extra support.
- Afterschool catch-up sessions (Every Tuesday)

Main Textbook: AQA GCSE (9-1) Design and Technology.

ISBN: 978-1-910523-10-0 Author MJ Ross



Revision Guide: AQA GCSE Revision Design and Technology All-in-One Revision & Practice. ISBN 978-0-00-822740-1 Author Paul Anderson and David Hills-Taylor

AQA BBC Bitesize Design and Technology

Makewell with Miss Markwell YouTube channel: videos on Smart materials, Hand embroidery, Design and Technology & Fashion and Textiles skills, techniques and processes tutorials to encourage creativity, skills, and confidence.