

# 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 and many more D&T topics.

**Design and Technology Programme of study key stage three national curriculums in England:** [National curriculum in England: design and technology programmes of study - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/612222/national-curriculum-in-england-design-and-technology-programmes-of-study-2014.pdf).

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

## Key Stage 3

Why are we teaching a knowledge-rich curriculum; how is it different?

At Springwood High School Design and Technology is a practical and valuable subject giving pupils the opportunity to learn how to design and make new and exciting products exploring and learning about materials and their working properties. We believe learning to design and develop practical skills through our knowledge enriched curriculum is an important life skill preparing pupils to be able to be resourceful now and later in life by being able to use their practical skills in real life context; potential designer, consider design problems, testing, experimenting and making prototypes, career in industry or being resourceful and using their practical repair skills in the home. We also believe it is vitally important to combine these practical skills with detailed knowledge which enables the pupils to be considerate when selecting materials considering sustainable issues and the impact on the planet being not just as a designer but also as a consumer. Being creative, communicating their own ideas fluently and influenced by real life context challenges and the work of other artists/designers both Internationally and British as a starting point encourages pupils to embrace cultures and the work of others' developing analytical skills when using existing products as a starting point for problem solving. By providing pupils with traditional and innovative skills, techniques and processes in many exciting practical projects encourages independent skills, team work, taking risks and problem solving.

Why are we teaching this content, in this order?

Design and Technology is taught in a carefully sequenced manner, ensuring that pupils build expert practical skills alongside developing a detailed understanding of the wide range of materials considering sustainable issues alongside every practical project. In Year 7 and 8 our lessons are planned around activities linked to the Six R's, sustainability and recycling – both year groups are off timetable for Super Learning Day promoting the importance of reducing the social footprint of materials use and the impact this has on the planet. Introducing the Six R's in lessons prepares the Year 7 and 8 pupils for the day of being innovative designers, encouraging team work, problem solving and embracing the important message of using sustainable materials when being a designer in this fast-paced world of mass production/manufacturing.

How does our curriculum match the ambition of the National Curriculum?

In 2019 we introduced a redesigned knowledge-rich Design and Technology curriculum enabling all KS3 pupils to study D&T once a fortnight throughout the academic year. As set out in the National Curriculum, our KS3 curriculum balances practical skills in a range of materials and specialist techniques and processes, and the theory behind making good sustainable choices, to develop design or creative projects. Students will learn and understand where materials are sourced from and how to use them when designing new and innovative products for real life situations. They will problem solve, test and evaluate all work, refining their own ideas and making improvements.

How does the curriculum build on that from Key Stage 2?

Pupils will build upon their knowledge from KS2, increasing their variety of tools, techniques and materials that can be used to solve design problems. They will continue to improve their technical drawing skills, design sketched and begin to make high quality prototypes, ensuring their ideas are fit for purpose. Students will access and extend their understanding of computer aided design and laser cutter

By the end of Key Stage 3, what key knowledge should pupils need to remember and be able to apply in this subject

Students will be aware of the various materials and tools, and how to safely use them, required to work in a variety of media. They will be able complete a project, from conception and design to the final product. Students will be able to problem solve real-life scenarios and formulate a design solution for a new and exciting product to make the users/client life easier to live with.

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

Year	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two
7	<p>Introduction to Health &amp; Safety in the D&amp;T workshop!</p> <p><b>Sustainable Issues:</b> 6R's and Fast Fashion.</p> <p><b>Timbers Project:</b> Learn about hard/softwoods and particle boards, characteristics and their working functions. Timber and surface finishes.</p>	<p><b>Timber Project:</b> Workshop, carpentry skills using a range of tools and machinery – Comb joints using pine.</p> <p>Design skills: design a door hook.</p> <p>Door Hook: MDF and Dowel joint.</p>	<p><b>Develop design Skill &amp; drawing skills:</b> Freehand sketching. Tonal shading. 2D &amp; 3D shapes. Isometric drawings, &amp; orthographic drawings.</p>	<p><b>Graphics Project:</b> Introduction to Art Movements: Pop Art. Fonts design &amp; typography. Battery Tester Project: Learn about paper &amp; boards, characteristics and their working functions.</p>	<p><b>Battery Tester Project:</b> Introduction to smart materials. Iterative design: Drinks can package inspired by Pop Art and incorporate font/typography design. Prototyping: experimentation with colour, design and packaging.</p>	<p>Final design and make for Battery Tester. Evaluations to examine and justify strengths and weakness and how to improve work.</p> <p><b>Textile Project Practical focus:</b> Hand embroidery: running stitch and how to fix a hole and sew a button on – life skills.</p>
	<p><b>Theory:</b> reinforce H&amp;S rules with a design task. Learn about how to reduce materials use – environmental issues. Learn about materials.</p>	<p><b>Theory:</b> reinforce subject knowledge through practical tasks.</p> <p><b>Design:</b> Develop creativity and design skills.</p>	<p><b>Design:</b> Develop technical drawing skills.</p> <p><b>Theory:</b> key words &amp; terminology.</p>	<p><b>Design:</b> Develop technical drawing/design skills. Creativity.</p> <p><b>Theory:</b> Key words &amp; terminology.</p>	<p><b>Practical:</b> Soldering a circuit, incorporating thermochromics.</p> <p><b>Design:</b> Creativity Skills.</p>	<p><b>Design:</b> Develop design &amp; creativity skills.</p> <p><b>Practical:</b> Develop sewing skills. Team work. Independence.</p> <p><b>Theory:</b> 6R – reuse.</p>

Year	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two
8	<p>Introduction to Health &amp; Safety in the D&amp;T workshop!</p> <p><b>Sustainable Issues:</b> 6R's and Fast Fashion. Renewable and Non-Renewable resources/Fairtrade.</p> <p><b>Timbers Project:</b> Learn about hard/softwoods and practical boards, characteristics and their working functions. Timber and surface finishes.</p>	<p><b>Timber Project:</b> Workshop, carpentry skills using a range of tools and machinery – Comb, mitre, dowel joints using pine. Design skills: design two Bookends – using pine and MDF</p>	<p><b>Polymer Project:</b> Workshop skills, experimenting with acrylic and high impact polystyrene (HIPs) Vacuum former. Learn about a range of polymers: thermoplastics and non, characteristic and their working functions.</p>	<p><b>Design Task:</b> Design an outfit with a logo for a Sports/Fashion Magazine.</p> <p><b>Graphics:</b> Font and typography. Tonal shading/mark making.</p>	<p><b>Textiles Project:</b> Learn a range of hand-embroidery skills, techniques and processes. Stitches: running, back, whip, blanket, lazy daisy, French knot. Applique the logo designed in Term 2. Learn about natural &amp; synthetic fabrics.</p>	<p><b>D&amp;T Subject Knowledge:</b> Motion Forces Electronics – Soldering Task. Metal – brazing task. Smart Materials revisit from Year 7.</p>
	<p><b>Theory:</b> Reinforce H&amp;S rules with a design task. Learn about how to reduce materials use – environmental issues. Learn about timber materials.</p>	<p><b>Theory:</b> Reinforce subject knowledge through practical tasks.</p> <p><b>Design:</b> Develop creativity and design skills.</p>	<p><b>Theory:</b> Reinforce subject knowledge through practical and written tasks.</p> <p><b>Practical:</b> Use a range of skills, tools and machinery.</p>	<p><b>Theory:</b> Power of advertising using fonts and logos.</p> <p><b>Design:</b> Develop creative and drawing skills, graphic design.</p>	<p><b>Practical:</b> Develop sewing skills.</p> <p><b>Theory:</b> Learn about textile materials through practical and written tasks.</p>	<p><b>Theory:</b> Develop D&amp;T subject knowledge. Learn key words and terminology in a range of topics.</p> <p><b>Practical:</b> Experimentation with samples.</p>
					<p><b>Theory:</b> 6R – Rethink. Finite resources – batteries.</p>	

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9	<p>Introduction to Health &amp; Safety in the D&amp;T workshop!</p> <p><b>Sustainable Issues:</b> 6R's and Fast Fashion. Renewable and Non-Renewable resources/Fairtrade. Learn about paper and boards. Packaging Design.</p>	<p><b>Graphics Project:</b> Technical drawing: 3D, isometric, orthographic design. Fonts &amp; Typography. Mark making and rendering.</p> <p><b>Graphics Prototypes:</b> Pop-up mechanisms.</p>	<p><b>Art Movements:</b> Learn about British and international artists and designers. Links to Nepal &amp; Mexican artwork.</p> <p><b>Design Task:</b> Logo design and repeat pattern inspired by art research: incorporating skills learnt from term 1.</p> <p><b>Prototypes:</b> Applique and Fabric pens.</p>	<p><b>Prototypes Continue:</b> Acrylic &amp; HIPs Timbers: MDF, plywood, soft/hardwoods Fabrics: cotton, felt, polyester.</p> <p>Use a range of skills, tools and machinery. Focus practical tasks: developing skills.</p> <p>Learn about materials and their working properties and functions.</p>	<p><b>Design Task:</b> Iterative design: inspired by Art Movements form term 1. Incorporate font/typography design.</p> <p><b>D&amp;T Project:</b> Using only sustainable resources: Plywood (donated from a local company) trinket box. Dowel joint &amp; decorative lid. Sports Bag: using recycled fabrics. Machine sewn and Embellished applique logo design. Pop-up card using recycled or handmade paper.</p>	<p><b>D&amp;T Project continue...</b></p> <p>Evaluations and plan of making.</p> <p>Manufacturing &amp; industrial processes – link to sustainable issues in term 1. Learn the process of how materials are made and the impact on the environment.</p> <p>Cotton, wool. Plywood. Paper. Plastic bottles into clothing. Injection moulding, blow moulding etc.</p>
	<p><b>Theory:</b> Reinforce H&amp;S rules with a design task. Learn about how to reduce materials use – environmental issues. Learn about packaging materials, shape and design.</p>	<p><b>Theory:</b> Reinforce subject knowledge through practical tasks.</p> <p><b>Design:</b> Develop creativity and design skills.</p> <p><b>Practical:</b> develop graphics skills, techniques and processes.</p>	<p><b>Theory:</b> Reinforce subject knowledge through practical and written tasks.</p> <p><b>Design:</b> Use a range of skills, techniques and processes, creativity and flair.</p> <p><b>Practical:</b> Develop skills, techniques and processes.</p>	<p><b>Theory:</b> Reinforce subject knowledge through practical and written tasks.</p> <p><b>Practical:</b> Develop creative and drawing skills, graphic design.</p>	<p><b>Design:</b> Use a range of skills, techniques and processes, creativity and flair.</p> <p><b>Practical:</b> Use a range of skills, tools and machinery.</p> <p><b>Theory:</b> Learn about materials through practical and written tasks.</p>	<p><b>Practical:</b> Use a range of skills, tools and machinery.</p> <p><b>Theory:</b> Learn about materials through practical and written tasks.</p> <p><b>Theory:</b> Develop D&amp;T subject knowledge. Learn key words and terminology in a range of topics.</p>

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10 GCSE AQA Exam Board	<p><b>Graphics Skills:</b> Freehand sketching. Tonal shading &amp; mark making. 3D &amp; 2D Shapes. Develop fonts &amp; typography design.</p> <p><b>Technical drawing skills:</b> Isometric, orthographic, exploded drawings, perspective drawing. Packaging design. Design brief &amp; specification.</p>	<p><b>Graphics Project:</b> Learn about paper &amp; boards: characteristics and their functions. Finishes for graphics. How paper is made.</p> <p><b>Art Movements:</b> Learn about British an international artists and designers. Links to Nepal &amp; Mexican artwork.</p> <p><b>Design Task:</b> Logo design and repeat pattern inspired by art research.</p> <p><b>Sustainable Issues:</b> 6R's and Fast Fashion. Renewable and Non-Renewable resources/Fairtrade. Link to Global Connections &amp; Nepal.</p>	<p><b>Book Design Task:</b> Illustrations/books product research analytical task. Iterative design. Incorporate font skills from term 1. Develop and final book design.</p> <p><b>CAD/CAM Project:</b> 2D design book cover. Laser cut the book cover. Prototype in card, engraved plywood.</p> <p><b>Skills Box Project:</b> A range of carpentry joints using plywood (recycled materials). H&amp;S rules in the workshop implemented with every project.</p>	<p><b>Prototypes:</b> Use a range of skills, tools and machinery. Focus practical tasks: developing skills -</p> <p><b>Prototypes using the following materials:</b> Polymers Timbers Fabrics Metal Smart Joining/fastening methods in all materials. Using a range of tools and machinery.</p> <p>Learn about materials and their working properties and functions. Surface finishes.</p>	<p><b>D&amp;T Subject Knowledge:</b> Motion Forces Electronics – Soldering Project. Smart Materials. Anthropometric &amp; Ergonomics. Evaluations and plan of making. Manufacturing &amp; industrial processes – link to sustainable issues. Learn the process of how materials and made and the impact on the environment. Cotton, wool. Plywood. Paper. Plastic bottles into clothing. Injection moulding, blow moulding etc.</p>	<p><b>NEA Mock:</b> Section A Mind map, design brief, product research &amp; client interview.</p> <p><b>NEA Release Date: June.</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. The D&amp;T NEA is the reason why you opted to study D&amp;T at a GCSE level. You will now be given a design problem and you will be a designer and have to create an exciting new and original idea. Developing design skills, creative and flair. Experimenting with materials and skills learnt over KS3 and Year 10!</p>
	<p><b>Theory:</b> The power of advertising using fonts/typography and logos. <b>Design:</b> Develop skills, techniques and processes.</p>	<p><b>Theory:</b> Reinforce subject knowledge through creative &amp; written tasks. <b>Design:</b> Develop creativity and design skills. <b>Theory:</b> Learn about how to reduce materials use – environmental issues.</p>	<p><b>Theory:</b> The power of advertising through fonts. Imagery, colour etc. Composition of titles, images, font. <b>Practical:</b> Learn about CAD/CAM. New &amp; emerging Technologies. Use a range of workshop tools &amp; machinery.</p>	<p><b>Theory:</b> Reinforce subject knowledge through practical and written tasks. <b>Practical:</b> Use a range of skills, tools and machinery in all material disciplines. Develop skills, techniques and processes.</p>	<p><b>Design:</b> Use a range of skills, techniques and processes, creativity and flair. <b>Practical:</b> Use a range of skills, tools and machinery. <b>Theory:</b> Learn about materials through practical and written tasks.</p>	<p><b>NEA 50% coursework:</b> <b>Theory:</b> Develop subject knowledge, keys words &amp; terminology. Reinforcing skills and subject knowledge from KS4.</p>

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11 GCSE AQA Exam Board	<p>D&amp;T NEA: 50% of GCSE grade.</p> <p>Students can select their specialism for this project: Textiles, R.M, or Graphics or combine a selection of materials and skills.</p> <p>Section B: Design brief &amp; spec Artist &amp; Designer research to inspire concepts. Material research and characteristics.</p>	<p>D&amp;T NEA: Section C/D/E Generating Design ideas. Development of designs Final design concepts. Prototyping.</p> <p>Section E/F: Realisations of ideas: Prototyping of final ideas. Evaluations ongoing. Final specification. Manufacturing plan. Client final feedback.</p>	<p>D&amp;T NEA:</p> <p>Production Plan Specification Final evaluation. Client feedback.</p> <p>Revision: AQA Exam board BBC Bitesize Resources, Knowledge organisers. Retrieval techniques to develop subject knowledge, key words and terminology.</p>	<p>Revision:</p> <p>AQA Exam board BBC Bitesize Resources Knowledge organisers Retrieval techniques to develop subject knowledge, key words and terminology.</p>	<p>Exam Summer 2022 Written Examination (50% of GCSE Grade).</p>	<p>Exam Summer 2022 – TBC by exam board: AQA.</p>
	<p>Students can select their specialism for this project: Textiles, R.M, or Graphics or combine a selection of materials and skills. Using advance practical skills learnt in year 10.</p>	<p><b>Advanced Practical Skills Examples:</b></p> <p>Joining methods Brazing. Laminating &amp; Sewing machine. Advanced Practical Skills: Laser cutter Clock made in acrylic, fabric, wood, card or a range of materials.</p>	<p>Evaluations and testing of prototypes.</p> <p>Exam revision on-going through NEA. Knowledge Organisers. Extended learning activities.</p>	<p>Practical - retrieval skills, techniques and processes Revision: tips and techniques for the written exam, practise papers. On-going health checks. Walk and talk mocks. End of topic assessments throughout KS4.</p>	<p>Written Examination (50% of GCSE Grade)</p>	

# Springwood High School Design and Technology Curriculum Plan

## Enrichment Activities:

**Super Learning Days:** Year 7 & 8 Sustainable Awareness Day (learn about environmental issues, 6R'/fast fashion/renewable and non-renewable resources). Team work, creativity, solve a design problem, develop practical skills and presentation skills.

## Competitions:

KS3 7 KS4 Rotary Club D&T Competition (Venue KLA. Date TBC).

Fashion Show Design Competition: Open to all year groups.

**Trips:** KS4 D&T Trip – TBC. KS5 BTEC Fashion Trip: V&A London.

## Open Evenings:

KS4 students can volunteer as ambassadors to promote D&T to Year 6's Open Evening.

KS5 BTEC Fashions can volunteer as subject ambassadors to promote 6th Form Open Evening.

## Clubs & Support:

KS3: Fashion & Textiles Club every week with Miss Markwell in T4.

KS3: D&T Club every week with Mr Austin in T1

T4 is open every lunch-time for students who would like to work on their coursework. Support available by Miss Markwell.

Afterschool catch-up sessions every week.

## Summer BTEC Fashion Show:

Year 12 and 13 BTEC Fashion students showcase their fashion collection. Models from all year groups can participate and model in the show.

## Revision Guides:

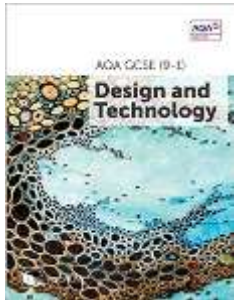
AQA BBC Bitesize Design and Technology <https://www.bbc.co.uk/bitesize/examspecs/zby2bdm>

Student Technology Website: <https://www.technologystudent.com/>

Makewell with Miss Markwell YouTube channel <https://www.youtube.com/c/MakewellwithMissMarkwell/videos>



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



Main Textbook: AQA GCSE (9-1) Design and Technology. ISBN: 978-1-910523-10-0 Author MJ Ross



ClearRevise AQA GCSE 8552 Illustrated revision and practice ISBN: 978-1-910523-24-7