

All Hallows RC High School

Believe. Belong. Achieve.



DESIGN AND TECHNOLOGY CURRICULUM OVERVIEW

September 2026



Mission Statement

Believe. Belong. Achieve.

At All Hallows RC High School, we are a Christ-centred community committed to living out the Gospel values in every aspect of our school life. Our school mission is to inspire, support and challenge every member of our school. We **believe** that every person is created in the image of God and that they grow in faith guided by the teachings of Christ. We strive to foster an environment where love, peace, courage, justice and kindness guide our actions so we develop into compassionate, resilient individuals who contribute positively to the world around them.

We are a community built on love, demonstrating unconditional respect and kindness for all. By fostering strong relationships, we ensure that every individual feels that they **belong**, are valued, supported and accepted as part of our family. We celebrate our differences and each person's uniqueness. We encourage forgiveness and understanding to create an environment where every pupil can flourish in their own way.

Through these values, All Hallows RC High School nurtures the whole person spiritually, academically and socially so they can **achieve**. We are a school where the Gospel values are not just ideals but the foundation of everything we do. With Christ at the centre, we enrich the lives of our pupils and guide them on the path of faith, purpose and integrity.



Curriculum Intent

Design Technology at All Hallows follows AQA Design Technology. This allows all pupils who choose to study at Year 11, another GCSE, along with the opportunity to study a subject which will allow them to participate confidently and successfully in an increasingly technological world.

The Importance of Design Technology

Design technology allows our pupils to learn how to become more resourceful, innovative, enterprising and capable. Our department aims to provide all pupils with the opportunity to investigate and examine a range of designs and products through visual aids and hands-on experience. As we progress through the curriculum our aim is to develop pupil awareness in taking a product from initial problem to a final solution. All Design Technology pupils will build upon:

- Solving 'real life' problems (Being Creative)
- Delivering what the client wants (Managing Information)
- Appreciating that 'quality' in everything is essential (Thinking Skills and Personal Capabilities)
- Decision making (Thinking, Problem-Solving and Decision-Making)
- Working to deadlines (Self-Management)
- Communication skills (Working with Others)
- Use of Information Communication Technology (ICT Accreditation Scheme)

Year 7 – 9 Department Structure

All pupils at All Hallows study Design Technology at Key Stage 3 (Years 7-9) before deciding on their option to pick DT as a GCSE option. The Technology suite is an excellent facility, enhanced by newly updated ICT and CAD CAM equipment (laser cutters, 3D printers, online computer aided design programming). Design and Technology is essentially a practical subject where the course is designed to enable pupils to acquire knowledge, understanding and skills which can be used in the design and manufacture of products which are meaningful to them.

During Year 7 pupils spend half the year in DT and the other half in Food Technology (Food Preparation and Nutrition) and this cycle repeats in Year 8 and Year 9. Over the three years pupils will cover an integrated Design Technology course which covers key aspects of:

- CAD/CAM: Computer Aided Design and Computer Aided Manufacture
- Resistant Materials: Designing and making with plastics, wood & metals
- Systems: Pupils consider Input, Process and Outputs mainly through their CAD/CAM Mechanisms and Electronics focused projects
- Electronic Products: exploring the use of electronics and sensors, movement, light and sound into functional technology products.

Year 10 - 11 GCSE Design Technology

Studying AQA GCSE Design Technology provides opportunities to tackle and resolve design and technological problems to meet human needs within a range of contexts, such as home, school, leisure, community, business and industry. Essentially, we are searching for better ways to do things, inventing solutions and taking risks.

Throughout this course, you will investigate historical, social, cultural, environmental and economic influences on design whilst enjoying opportunities to put your learning into practise. Pupils will produce prototypes of their own design using some of the latest technology available such as 3D CAD and 3D Printing.

You will gain a real understanding of what it means to be a designer. Areas to be covered will be the design cycle, plastics, metals, woods, smart and modern materials.

This creative and thought provoking qualification will develop your practical skills, theoretical knowledge and confidence to succeed in a number of careers. This course lends itself to careers based in Creative Industries and will also give a good grounding for continued study at University.

Pupils will sit a written 2 hour exam worth 100 marks, which makes 50% of the final GCSE grade. The other 50% coming from a physical prototype worth 100 marks. Each pupil will use a range of manufacturing techniques and processes to create a design based on a given context. Previous coursework examples have been designing a product which could aid a disabled client, or design a product that could be used for storage.

The GCSE coursework tasks will be provided towards the end of y10 to enable pupils to begin to research their chosen task. Coursework should take approximately 35 hours and pupils undertake a design and make assignment for the chosen task. They are required to produce a folder of evidence for research, design development, and planning, alongside a made product to fit their design brief. The remainder of Year 11 is then spent on examination preparation and revision. See links below for further information on GCSE AQA Design Technology

<https://www.aqa.org.uk/subjects/design-and-technology>

Career opportunities

Structural Engineering

Naval Engineering

Electronic Engineer

Architecture

Electrician

Graphic Designer

Fashion Design

Interior Designer

Games Design

Plumbing

Welding

KS4 Order of Teaching

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7 Focus on formal elements	Project 1: Fretsaw Jigsaw	Project 2: Pine and Acrylic Phone Stand	Project 3: Computer aided design and Computer aided Manufacture (CAD/ CAM)	Project 4: Ugly Doll Project: Textiles	Project 5: Tinker CAD: Online CAD modelling	Project 6: Egg Drop
Artists and craft people will be investigated throughout the years 7 to 9 to explore the history and diverse nature of careers in art and design.	What pupils are to learn: 1. Health and safety in the workshop 2. Using a template to follow when cutting a design 3. Finishing techniques to smooth surfaces What pupils will be able to do: 1. Learn health and safety in the workshop 2. Create a small Jigsaw hand crafted using Coping Saws 3. Correct use of the file/ vice/ sandpaper CST: Option for the poor. Materials used in this project are all recycled and shows pupils how to turn waste into a simple game or toy for themselves or another person	What pupils are to learn: 1. How to write a plan before manufacture including a design brief and specification 2. Design work including orthographic engineering drawing and perspective drawing 3. How to measure accurately before manufacture 4. Use of the Tenon saw, Bench Hook, sanding and filing equipment 5. Evaluations which compare with original specification What pupils will be able to do: 1. Manufacture a Pinewood wooden Phone Stand which is painted and finished to a high standard CST: Discussion on sustainable wood sourcing (Stewardship).	What pupils are to learn: 1. What CAD CAM is. What the positives and negatives are and the job prospects in 21st century of knowing this programme 2. How to use CAD CAM to design and then make a personalised Ruler What pupils will be able to do: 1. Make their own personalised ruler using CAD CAM CST: Peace and Reconciliation: Pupils understand that design can help build a peaceful society by promoting cooperation and fairness in their work.	What pupils are to learn: 1. What textiles are the the different natural synthetic types 2. How to thread and knot a needle/ thread 3. How to stitch closed a doll design What pupils will be able to do: 1. Create a personalised 'ugly doll' using stitching and cotton wool to stuff CST: using recycled fabrics and discussing the textile industry's impact (Stewardship, Dignity of Work).	What pupils are to learn: 1. Using CAD to model a proposed project 2. How computer aided drawing can be used rather than paper and pencils to create a design 3. The positives of using CAD in design work What pupils will be able to do: 1. Create an online CAD model of a design idea	What pupils are to learn: 1. Structures and forces 2. Product testing methods used by companies (the drop test, strength tests etc.) What pupils will be able to do: 1. Create a structure or design that will protect an egg when dropped 2. Use design intuition and creativity to create their design CST: Community and Participation: Through teamwork and collaboration, children appreciate the value of working together and sharing ideas to achieve common goals.

Year 8	Project 1: Sweets Dispenser with Technical hand drawings	Project 2: Sweets Dispenser continued with online advanced computer aided design	Project 3: Computer Aided Design Keyring	Project 4: Cross Stitching Textiles bookmark	Project 5: Upcycle Robot head	Project 6: Balloon Buggy
Developing prior learning of formal elements from year 7.	What pupils are to learn:1. Write a plan before manufacture including a design brief and specification along with developing a design suited to the needs and wants of a client.2. Design work including orthographic engineering drawing and perspective drawing both hand drawn and then further developed using online computer aided design programme3. How to measure accurately before manufacture What pupils will be able to do: Manufacture a Sweets dispenser which will function fully in releasing sweets when a lever is turned. Work will be finished to a high standard with the option to add a painted final coat to their work. CST: Discussion on sustainable wood sourcing, sustainable manufacture, plastic sourcing along with environmental impact of each material (Stewardship).	4. Developing hand drawings into computer aided design engineering drawings along with virtual development of 3D modelling to aid in planning project5. Use of the Tenon saw, Bench Hook, sanding and filing equipment. Introduction to specialised equipment including the electric sanding machine and Pillar drill. 6. Evaluations which compare with original specification. Evaluations also to include success on meeting the client original needs. What pupils will be able to do: Manufacture a Sweets dispenser which will function fully in releasing sweets when a lever is turned. Work will be finished to a high standard with the option to add a painted final coat to their work. CST: Care for our common home (creation): Focusing on sustainability by considering the environmental impact of materials, the lifecycle of products, and reducing waste.	Project : Computer Aided Design Keyring What pupils are to learn:1. Reinforced learning from year 7 on CAD and CAM in todays age, including the types used in wider manufacturing along with the career opportunities within this field. 2. How to use CAD CAM to design and then make a personalised keyring from acrylic or wood3. Pupils will watch as the Laser Cutter takes their design from a virtual drawing into a physical prototype they can take home. What pupils will be able to do: 1. Make their own personalised keyring using CAD CAM CST: Common good: Discussion on creating products and solutions that benefit the whole community and society, such as developing 3D-printed prosthetics or community spaces for mental health.	Project : Cross Stitching Textiles bookmarkWhat pupils are to learn:1. What textiles are the the different natural synthetic types 2. How to thread and knot a needle/ thread 3. How to stitch in a cross stitching style 4. Pupils will learn how simple repairs can be achieved in their own clothes or bags if a small hole appears. What pupils will be able to do: 1. Create a personalised book mark which will promote reading in All Hallows. CST: Option for the Poor and Vulnerable: Children learn to create designs that are accessible to everyone, especially those with limited resources or needs.	Project : Upcycle Robot head What pupils are to learn:1. The design process in creating a new project 2. Sustainability and upcycling of scrap materials to create something new. 3. New manufacturing techniques such as bolts and washers, wood burning and nail and hammer use.4. Manufacturing techniques theory including Batch, Mass, Continuous etc. What pupils will be able to do:1. Manufacture a scrap wood upcycled wooden robot head which is painted and finished to a high standard CST: links to Stewardship through reducing waste. Focusing on sustainability by considering the environmental impact of materials, the lifecycle of products, and reducing waste.	Project : Balloon Buggy What pupils are to learn:1. Global goals (11 - sustainable transport and cities)2. The difference designers can make3. What are fossil fuels?How does current transport happen? 4. History of wind power Forces and motion Why the buggy eventually stops? Energy transfer 5. Evaluations What pupils will be able to do: 1. create a buggy which will run on a renewable energy source (wind power form balloon) CST: Community and Participation: Through teamwork and collaboration, children appreciate the value of working together and sharing ideas to achieve common goals.

Year 9	Project 1: Block Bot	Project 2: Mini Box	Project 3: Personal Ruler: 2D Design Computer Aided Design	Project 4: Puzzle Project	Project 5: Spinning Top Project	Project 6: CAD CAM Clock
Developing	Project 2: Block Bot What pupils are to learn: 1. Following the step by step design process in creating a design and design specification 2. Using modelling techniques to create a prototype before manufacture 3. Advanced wood working techniques to shape and create the various parts within the project 4. Painting and sanding finishing techniques skills developed 5. Creating a step by step manufacturing guide What pupils will be able to do: 1. Create a personal Block Bot from natural wood tied together using rope to be used as an ornament or seasonal gift CST: Dignity of work and economic justice: Discussion around Promoting fair labor practices, such as those found in Fair Trade, and creating products that support livelihoods and a fair distribution of resources.	What pupils are to learn: 1. How to write a plan before manufacture including a design brief and specification 2. Different wood joint techniques explored and the value/ drawbacks of different styles 3. Design work including orthographic engineering drawing, perspective drawing and isometric 4. The concept of 'netting' to ensure no wasted material during manufacture 5. Introduction to the fret saws and coping saws along with use of the Tenon saw, Bench Hook, sanding and filing equipment. 6. How to apply an aesthetic painted finish to a wooden product. The use of masking tape and different paint types to enhance a design. What pupils will be able to do: 1. Manufacture a small wooden box for personal use or to be given as a gift. The small box will use advanced wood joints and have an attractive painted finish applied to finish. CST: Discussion on sustainable wood sourcing (Stewardship). Emphasis is placed on choosing sustainable, ethical, and economic materials that have a reduced environmental footprint.	Project 3: Personal Ruler: 2D Design Computer Aided Design What pupils are to learn: 1. The use of modern CAD and CAM technology in the world today. The impact of robotics and automated manufacture both in positives and negatives. 2. How to use CAD CAM to design and then make a personalised Ruler from acrylic or wood What pupils will be able to do: 1. Make their own personalised Ruler using CAD CAM CST: Design process: Pupils learn to evaluate the ethical implications and real-world impact of their designs, rather than just focusing on aesthetics or functionality.	What pupils are to learn: 1. The history of toys and games before modern technology and how these can be manufactured by hand without the use of modern technologies. 2. Pupils will plan a design through technical working drawings on paper before advancing this into an online computer aided design version which they can virtually create models of. 3. Pupils will use natural pine wood to create their design ensuring tight accurate parts allowing it to fit together Each individual part will be filed and sanded and finished to the highest possible standard. CST: Problem-solving: DT projects are framed as opportunities to solve real issues and create solutions that can serve others, fostering creativity and resourcefulness.	Project 6: Spinning Top Project What pupils are to learn: 1. History of the spinning top - past and present design 2. Polygons - maths - regular and irregular polygons 3. Properties of a variety of materials - metal, wood, plastic, metal, ceramic and glass 4. How to follow a step by step manufacturing guide 5. Theory on composites and manufactured wood What pupils will be able to do: 1. Follow and manufacturing guide to create a composite spinning top.	Project 8: CAD CAM Clock What pupils are to learn: 1. Upcycle something from home e.g. a CD, Vinyl, old book? Laser cut a template backing? What can you create to make a clock face? 2. Assembly of a battery powered clock mechanism 3. Sustainability - why its so important? Biodegradable materials Fossil fuels Renewables What pupils will be able to do: 1. Taking something from home (upcycling) or using the laser cutter (CAD/ CAM) to create a clock face CST: Preferential option for the poor and vulnerable: Designing with the needs of lower-income families or marginalized populations in mind, for example, by developing products for refugee camps or low-resource settings.

GCSE DT

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 2
Year 10	Project details	Project details	Project details	Project details	Project details
	Name - Adjustable Mirror Outline - This project will give you a basic understanding of the main workshop skills involved in manipulating polymers, metals and woods. You will learn how to cut, bend and screw thread metals, laser cut polymers, shape and finish wood to create an accurate and usable product. Vocabulary - Precision, Consistent, Present, Confident, Extended, Safely, Uniformly, Hardwood, Softwood, Pine, Larch, Oak, Beech, Drill, Ferrous, Non Ferrous, Alloy, Mild Steel, Aluminium, Brass, Stainless Steel, Tolerance, Screw Thread, Tap, Die, countersink.	Name - Gameboy Puzzle Game Outline - This project will give you an introduction to polymers, how they can be shaped through vacuum forming and formed using the sander, drill and countersink. You will also develop a solid working understanding of 2D Design in order to create an orthographic drawing. Manual isometric sketching will be developed with the use of traditional drawing equipment. Vocabulary - Confidence, Present, Error, Independent, Manage, Develop, Technique, Vector image, Bitmapped image, Polymer, Thermoform, Thermoset, Vacuum Form, Acrylic, Orthographic, Dimension, Isometric.Name - 3D Sketching Outline - This project will develop your ability to sketch in 3D (isometric) Vocabulary - Apply, Sketch, Isometric, Crating, Rendering.	Name - Mechanical Modelling Outline - This project will allow you to develop problem solving skills whilst creating workable prototypes. Effective use of time will be needed to complete the set tasks. Vocabulary - Diameter, Linkage, Cam, Gear, Pulley.Name - Experimenter Boards Outline - This project will develop your analytical as well as problem solving skills whilst creating workable prototypes. Vocabulary - Prototype, Input, Output, Process, Microcontroller.Name - Fab-Ric! Outline - This project will investigate the properties of textiles. Vocabulary - Investigate, Origin, Natural, Synthetic, Woven, Non Woven, Blended. Name - Key Designers Outline - This project will analyse the work of designers. Vocabulary - Analyse, Evaluate, Modernism, Less is More, Post Modernism, Less is a Bore, Fashion, Society.	Name - Bit Stop Bedside Storage Outline - This project will give you a sound understanding of some of the main manufacturing techniques used in industry in order to batch produce products using jigs, templates and formers. Previously gained experience in woods, metals and polymers will also be developed. CNC machining will be introduced in order to create a personalised finished product. Vocabulary - Personalise, Create, Template, Tessellate, Former, Jig, Batch, CNC Machine, Stock form, Flat Pack, Smart material, Stimulus, Ergonomics, Anthropometrics, Quality control,	Name - Coursework (NEA) Section 2 - Ideas Outline - Creation of imaginative, creative and innovative ideas that show full consideration for functionality, aesthetics and innovation using a range of communication techniques. Vocabulary - Imaginative, Creative, Innovative, Generate, Investigate, Relevant, Extensive, Experiment, Strategy, Purpose, Design, Prototype, Dimension, Sketch
	Homework/ Theory	Homework/ Theory	Homework/ Theory	Homework/ Theory	Homework/ Theory

	1 Properties2 Metals3 Woods and Boards4 Seasoning and Conversion5 Cutting6 Drilling	7 Polymers8 Composites9 Papers and Boards10 Orthographic Drawing11 Isometric/Perspective 12 Types of Movement13 Levers14 Linkages and Cams	15 Gear Trains16 Pulleys and Belts17 Programmable Systems 118 Programmable Systems 219 Programmable Systems 3 20 Textiles 21 Marcel Breuer 22 Philippe Starck CST: discussion on CST principles and how they have (or haven't) been reflected in design history.	23 Stock Forms24 Chiselling, Planing, Turning25 Flat Pack Furniture,26 Wood Finishes27 Quality Manufacture28 Commercial Routing and Turning29 Scales of Production30 Smart, Modern Materials	PCST: Community and Participation: Through teamwork and collaboration, children appreciate the value of working together and sharing ideas to achieve common goals.
Year 11	Non Exam Assessment	Non Exam Assessment	Exam Preparation	Exam Preparation	
	Name - Coursework (NEA) Section 3 - Idea Development Outline - Development of design ideas using a wide range of 2D/3D techniques (including CAD where appropriate) in order to develop a prototype. Appropriate materials/ components selected with extensive research into their working properties and availability. Detailed manufacturing specification is produced with comprehensive justification to inform manufacture. Vocabulary - Development, Variety, Appropriate, Evidence, Technique, Method, Require, Available, Comprehensive, Justify, Virtual Model, Manufacturing Specification, Cutting List, CST: Pupils encouraged to research CST principles relevant to their chosen design context (e.g., if designing for an elderly user, research Dignity of the Human Person, Option for the Vulnerable).	Name - Coursework (NEA) Section 4 - Manufacture Outline - Production of a prototype which shows a high level of making/finishing skills that are fully consistent and appropriate to the desired outcome. Quality control is evident to ensure the prototype is accurate by consistently applying very close tolerances, as well as safe working practises. Vocabulary - Quality, Consistent, Manufacture, Deadline, Fabricate, Assemble, Time Manage, Independent, Confident, Tolerance, Produce, Jig, Template, Measure, Sustainable, Name - Coursework (NEA) Section 5 - Evaluation Outline - Testing of all aspects of the final prototype against the design brief and specification. Detailed and justified reference is made to any modifications. Vocabulary - Test, Influence, Consider, Propose, Modify, Analyse, Reference, Feedback, Sketch, Present,	31 Design Strategies 32 Dyson - Prototype Development 33 Apple - Recycling and Disassembly 34 Industry 35 Enterprise 36 Production Techniques 37 Design Decisions 38 Sustainability 39 Energy Generation and Storage CST: "Sustainability," "Energy Generation and Storage," "Apple - Recycling and Disassembly": Directly linked to Stewardship.CST: "Design Strategies," "Dyson - Prototype Development," "Industry," "Enterprise," "Production Techniques," "Design Decisions": Discussion on how these can be approached ethically and with consideration for the Common Good, Dignity of Work, and Stewardship.	40 Exam Preparation	



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