



Design & Technology Year 9

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topics	The Great British Make Off Project Drawing in 2D and	The Great British Make Off Project Drawing in 2D and	Prototyping Project – Pizza Cutter Identifying target markets Writing a specification Initial ideas and modelling of ideas	Bridge Building Project Planning the manufacture of a product Making several components to be assembled	Mechanisms Project / Crumble programming project Using digital technology to design and create products	Pewter Casting Project Manufacturing using polymers and jigs
Assessment	Ongoing formative assessment in lessons End of Project summative assessment	Assessment of practical skills and H&S knowledge	Assessment of creative and designing skills	Assessment of making and evaluating skills Technical knowledge test	Assessment of iterative approach to designing End of project summative assessment	End of year written assessment

Building on Prior Learning	Students build on the skills and knowledge from Year 8 by tackling more challenging projects using a wide variety of materials, processes and technical knowledge. The projects in Year 9 encourage students to use their prior learning with a more independent approach.
Links with other subjects	This subject links with Art (sketching and creative skills), Business (income, economy, industry) Science (biomimicry, investigations, properties of materials, energy, forces and electronics – remember technology is the appliance of science!), English (annotation, evaluation, instructional and descriptive language, literacy links, extended writing), Geography (designing solutions to global issues such as climate change, ethical sourcing of materials, energy production), History (industrial revolution, inventions that changed the world), ICT (word processing, research, graphs, data processing, programming and CAD/CAM – computer aided design and computer aided manufacture), Maths (weights and measures, quantities, costings, graphs, analysis of data, geometry)
Extracurricular opportunities	Students are able to participate in after school D&T clubs including the exciting Vex IQ Robotics Club. In Year 9 students can enter a team in the national competition. On Tuesday Evenings students can continue to develop their class projects at our KS3 D&T Club. On Friday students can spend time in the department making products for the Duke of Edinburgh Award skills component.
A successful learner in this subject will demonstrate	There are four strands in D&T; designing, making, technical knowledge and evaluating . When designing a successful learner will be aware of target markets and social, moral, environmental and sustainability issues, analyse existing products, research design influences, create a design specification, generate variety of feasible design ideas, use scale models/CAD/sketching to develop ideas through a sequence of iterations. When making a successful learner will be able to assemble, make and finish demanding products, demonstrating skills in using a wide variety of equipment and materials including CAM as well as applying quality control during manufacture. In evaluating designs and final products, a successful learner will use a range of appropriate testing techniques to ascertain the commercial viability of the design. Technical knowledge will be in evidence throughout the other three strands and the student should be able to prepare detailed instructions that could be used by a third party to manufacture a design.
Impact on personal development	Design and Technology opens up a wide range of opportunities to explore a range of issues from the world around us. Students are encouraged to work together to complete their projects and to share resources. Designing for others also develops empathy and they are encouraged to be mindful of the products they create and the impact they have on society from a moral and ethical perspective. Sustainable production and environmentally conscious design are at the heart of the subject.



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Ways to support student learning in this subject

- Trips to interactive museums (e.g THINK Tank, National Transport Museum in Gaydon, V&A, Ironbridge, Science Museum, RAF Cosford) can inspire the budding designers, inventors and engineers of tomorrow.
- Students are encouraged to keep sketch books, take photographs and collect examples of innovative and creative designs.
- There are many free software programs that students can download or access online to develop their CAD/CAM skills. These include Sketchup, Autodesk Fusion 360, Autodesk Inventor and Blender. Many students have designed products at home and then had them manufactured on the school's 3D Printer.
- Look out for any design and creative competitions on TV, radio, or in the newspaper – these can be a fantastic way to get excited about designing and creating! Several DSHS students have found success in competitions, winning prizes and enhancing career prospects.
- Programs like 'How It's Made?' and 'The Gadget Show' introduce students to a range of innovative products and improve their understanding of how our world is made.
- Students are encouraged to read books, magazines (Wired) and articles about design and innovative products on-line (Dezeen, Design Boom, Interesting Engineering)
- When completing homework tasks 'go the extra mile' and thoroughly research the topic areas, practice making models in 3D from resources found at home including card and Lego.
- Students are encouraged to enjoy and have fun in Design and Technology
- Students should be encouraged to make mistakes and learn from them.