Year 7 Technology Sequence

DEYES HIGH SCHOOL
LYDIATE LEARNING TRUST

Content Taught	National Curriculum	Essential Knowledge	Assessment	Rationale
Depending on student rotation - Students complete 3 projects using booklets covering Graphic Design, Electronics, Resistant Materials, Product Design and use of CAD/CAM packages				
Students study a 12-week programme focusing on structures. This is delivered through the following project: Bridge Project	**Design** Identify and solve their own design problems and understand how to reformulate problems given to them **Make** Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture **Evaluate** Analyse the work of past and present professionals and others to develop and broaden their understanding	<u>Materials and Making</u> Selection of Materials (Card and Paper) Net Diagrams, Joining Materials Marking out Tools, Equipment Use of CAD <u>Structures</u> Types of Structures Types of Forces. Effects of Forces Calculation of forces Students look at how paper is produced, which application works best for different designing and modelling applications.	Formative assessment is used throughout the project both practically and in terms of theoretical knowledge, to assist student development. Summative Assessment of Theory work (End of topic Test), Design work and Practical Work takes place at the end of the unit. Testing is cumulative as Knowledge Organiser tests incorporate	We start Year 7 with ambitious projects that build upon the essential knowledge covered at KS2. This project builds upon students' ability to design at KS2 as it introduces new skills of oblique and isometric drawing. This is taught now as it provides essential knowledge that will be developed throughout the project and will assist students in many areas of future designing across a raft of projects in year 7 and beyond. Students understanding of structures is developed through technical investigation forces that act on structures, this

		They investigate forces and design structures that must withstand different challenges applying essential knowledge in practical applications. They investigate the strength of triangulation and addition of materials in key areas to add rigidity. Within this half term students will develop essential knowledge in lessons and 'bring it all together', buy implementing it into a challenging and motivational design and make task. **Essential knowledge reading for depth** Structures Paper & Card	questions from previous years + questions from previous topics	significantly builds on KS2 strengthening structures element and will allow students to implement and build on understanding in year 8 through the wind turbine project, were a metal frame structure is designed and manufactured. Each booklet develops key knowledge and understanding in design technology. Giving students the learning foundations to allow rapid progress in future years
Students study a 12-week programme focusing on Electronics. This is	**Design**	Materials and Making Selection of Materials		Learners deepen their understanding of electronics, building on KS2 understanding of circuits, with more complex components that have additional functionality within a circuit. Students

delivered through the following project: Energy and Electronics - Electronic Steady Hand Game	Identify and solve their own design problems and understand how to reformulate problems given to them **Make** Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture **Evaluate** Analyse the work of past and present professionals and others to develop and broaden their understanding	Circuit Diagrams Tools, Equipment Designing Evaluating Use of CAD <u>Electronics</u> Circuit operation Types of Electronic Components Students investigate where our energy comes from, we look at both renewable and non-renewable sources and the environmental impact of both types. Students investigate electronic principals and components improving essential knowledge before applying it into their own circuit. Creativity when designing and the challenge of successful designing for a 3rd party is also covered ensuring the target market is considered.		learn the new skill of soldering including correct techniques and health and safety, this will allow students to take essential skills into the year 8 nightlight Electronics project and beyond. Each booklet develops key knowledge and understanding in design technology. Giving students the learning foundations to allow rapid progress in future years.

		Within this half term students will develop essential knowledge in lessons and 'bring it all together', buy implementing it into a challenging and motivational design and make task. **Essential knowledge reading for depth** LED's		This project builds on materials understanding at KS2 and significantly deepens their knowledge through essential knowledge of timber and manufactured boards. Designing and working practically with a range of timbers and manufactured board, is new to students and develops key techniques and fundamental understanding that can be implemented into materials projects in year 8 and beyond. Each booklet develops key knowledge and understanding in design technology. Giving students the learning foundations to allow rapid progress in future years
Students study a 12-week programme focusing on Timber. This is delivered through the following project: Chinese Calendar Project	**Design** Use research and exploration, such as the study of different cultures, to identify and understand user needs. Identify and solve their own design problems and understand how to reformulate problems given to them **Make** Select from and use specialist tools, techniques,	MAKING PRINCIPALS Selection of Materials Tolerances and Allowances Marking out Specialist Tools and Techniques Surface treatment and Finishes Timber Based Materials Sources Origins and Properties Working with Timbers Commercial Manufacturing and Quality Control		

	processes, equipment and machinery precisely, including computer-aided manufacture **Evaluate** Analyse the work of past and present professionals and others to develop and broaden their understanding	Sources of timber; Hardwoods, Softwoods and manufactured boards are investigated, ensuring essential knowledge is understood and applied to the designing and the manufacturing process. Creativity when designing and the challenge of successful designing for a 3rd party is also covered ensuring the target market is considered. Accurate manufacturing tolerance and quality control are developed by students helping to maintain a high standard of outcome Within this half term students will develop essential knowledge in lessons and 'bring it all together', buy implementing it into a challenging and motivational design and make task.		

		Essential knowledge reading for consolidation Manufactured Board Natural Woods		