



The purpose of the curriculum:

The primary aim of the Design & Technology curriculum is to develop and enhance students creativity, problem solving , designing, analytic , communicating & organizing skills. At the forefront, the curriculum is also intended to develop the technical ability of students. Design and Technology is also an inspiring, rigorous and practical subject intended to develop self confidence, teamwork, independent thinking and a clear understanding of safety, the environment and the sustainable use of a wide range of resources.

William Edwards School Design & Technology Department Curriculum Journey

Approximate Grade Boundaries		
MARKS	>	GRADE
84	>	100 = 9
77	>	83 = 8
72	>	76 = 7
63	>	71 = 6
55	>	62 = 5
47	>	54 = 4
34	>	46 = 3
23	>	33 = 2
11	>	22 = 1
0	>	10 = U

YEAR 11

1. NEA. Identifying & investigating design possibilities.
Each student identify a chose 1 of 3 design task. It is recommended that design task is chosen based on the following

1. Interest in the problem to be solved.
2. Skills and ability
3. Confidence the product can be completed by the deadline

3. NEA. Generation of design ideas.
Using a range of presentation & design development techniques, students generate a range of design innovative ideas of the chosen product/s.

5. Making principles inc selection of materials , tolerance and material management.
Students will know the how to select and use a range of materials and components that are appropriate for a specific task. Students will also understand why tolerances are applied during the making process
Content linked to Maths and Science.
Golden Threads: 1,3,4,5,9,11,12,13 & 14

7. Production techniques & systems
Students will explore and know how & why products are produced in different volumes.
Content linked to Catering Golden Threads: 2,4,6,9,10,13 & 14

8. Revise for and sit your Y11 mock exams. Usually sat in the January.

10. Exam Revision
Students revise in preparation for their written examination, a 2 hours written examination worth 50% of their GCSE

2. NEA. Development of design brief & specification.
Students will identify a potential problem, range of solutions, a client or target group and develop a list of key features the product must have to meet the needs of the intended user.

4. NEA. Development of design ideas.
Using a range of techniques and resources, students improve and further develop their design ideas and create a variety of models, physical & virtual.

6. Industry and enterprise, People , culture & culture
Students will explore and know how new & emerging technologies influence the design of tools , job roles fashion & trends.
Content linked to Art & Design.

9 NEA. Realisation of design ideas, testing & evaluation. **
Students develop a plan of manufacturing, select appropriate resources and using a range of tools & equipment, students will make, test, evaluate their completed prototype

11. Introduction of Non Examination Assessment (NEA), identification of problem and potential target user.

JUNE 1 of Year 10 students begin the Internal Assessed element of the course. Students select 1 of 3 "Contextual Challenges" set by the Examination Board. This assessment is worth 50% of the GCSE grade students will achieve. Students follow the design process by identifying a problem, research the problem, designing a product to solve the problem then make test and evaluate the product. The final product MUST work/function as intended. The product MUST have supporting WRITTEN evidence and presented via a PowerPoint (Max 40 slides). Deadline for the submission of NEA is February half term of year 11

10. Designing and making principles inc investigation of data.
Students will explore and know the key stages of the design process, types of research and sources of information linked to the development of and manufacture of products.
Content linked to ICT, Science and Maths.
Golden Threads: 1,2,4,5,7,9,13 & 14

9. Composite materials, system approach to designing, electronic & mechanical devices.
Students will explore and know what a composite is, examples of composite materials, their properties and uses in manufacturing.
Content linked to Science, Art & Design and Maths
Golden Threads: 1,3,4,5,6,9,11,12,13 7 14

YEAR 10

5. Timber – Sources origins, properties and manufacturing**
Students will explore & know the life cycle of timber (from seedling to usable timber), properties of timber & uses of timber in manufacturing.
Content linked to Geography and Maths.
Golden Threads: 4,6 9 10, 11,12,13 & 14.

6. Metals – Sources origins, properties and manufacturing inc surface treatment.**
Students will explore and know the origin and sources of metal, the conversion form ore to metal, the properties of metal and uses of metal in manufacturing.
Content linked to Geography, Maths & Science.
Golden Threads: 4,6 9 10, 11,13 & 14.

7. Polymers – Sources origins, properties, manufacturing and finishing **
Students will explore and know the raw material/ sources of plastics, types of plastic, properties of plastics and uses of plastics in manufacturing.
Content linked to Maths & Science.
Golden Threads: 2,4,6,9,11,13 & 14.

8. Paper & Boards -Sources, origins, properties and manufacturing inc surface treatment & finishes.
Students will explore and know the raw materials used to make paper & boards, the different types of paper & boards and the standard sizes in which paper and board are manufactured and sold.
Content linked to Maths, Art & Design, Geography & Science.
Golden Threads: 1,4,5,9,10,13, & 14

YEAR 10

4. Electronic systems processing including circuit manufacturing & testing**
Learners will explore and know the main parts of electric & electronic circuits. Students will also manufacture and test an electronic circuit
Content linked to Science and Maths.
Golden Threads: 1,2,3,4,5,8,10,12 & 13

3. Energy generation & storage, Modern & Smart materials.
Learners will explore and know the different sources of energy & electricity , the properties and uses of modern materials & Smart materials.
Content linked to Art & Design & Science.
Golden Threads: 2,4,6,9,10,11, 12 & 13

2. Common Specialist Technical Principles inc 6Rs , Ecological & Social footprint
Learners will explore & know the importance of recycling and use of natural & manmade resources and the effects of pollution on the environment/planet
Content linked to Geography & Science.
Golden Threads: 2,4,6,9,10,11,13 & 14.

1. Introduction to ICT and Computer Aided Design**
Learners will explore and know how Computer technology is uses for Designing and Manufacturing.
Content linked to ICT.
Golden Threads: 1,3,5,7,8,&12 & 13

End of Unit Assessment **
NOTE: All end of term/ units assessment will cover he content taught during the preceding weeks. Each 60 min test will have the same format of the course's written examination. End of term assessments are also supplemented by homework tasks.

To facilitate the transition from year 9 to GCSE D&T curriculum, KS3 subject content that are closely aligned are identified and auditing. Targeted subjects include Maths, Science, Art & Design, ICT and Geography. Each subject provides a wide range of linked prior knowledge. Year 9 students are informed about the core content, structure and other important elements of the Design & Technology curriculum via a series of Taster Sessions, and Option Evening presentations. Students are also encourage to attend break & after school drop-in sessions to obtain additional relevant information.

YEAR 9

Linked Knowledge & Understanding obtained throughout KS3
Throughout KS3, students would have been exposed to a wide range of D&T linked content, mainly form Geography, Art & Design, Maths, Science , Catering and ICT. Content would include; recycling, use of natural resources, environment sustainability, finite & nonfinite resources, energy sources, electricity, circuits , forces and Health & Safety. Students would also have been taught application of a wide range mathematical formulas, use g grids, scales, ratio and percentages. Through Catering students would have acquired knowledge about food groups, nutrients, and safe working practices Additional linked knowledge, understanding and skills obtained from ICT would include the identification of simple CAD related icons, Tool bars, Title bars, Menu bars and the introduction to basic design programmes. Art & Design would have offered students skills, knowledge & understanding related to drawing techniques, aesthetics, presentation methods and techniques, design evaluation & iconic designers/ designs.

KS3

- Core Linked KS3 Golden Threads
1. Calculate
 2. Evaluate
 3. Construct
 4. Define
 5. Solve
 6. Analyse
 7. Outline
 8. Develop
 9. Explore
 10. Review
 11. Justify
 12. Modify
 13. Identify
 14. Explain

- Key skills gained at KS3
Important D&T linked skills include:
- Critical thinking
 - Self and peer evaluation of work
 - Time management
 - Independent research
 - Teamwork & self confidence
 - Risk assessment & risk management
 - Hazard identification and basic First Aid
 - Creative and reflective learning
 - Development of self confidence
 - Expression of creativity and adaptation of ideas