Curriculum Sequencing KS3

The Design and technology curriculum has been sequenced to ensure that the skills and knowledge needed to progress are embedded as we move up the key stages culminating in design and make activities in year 9 showcasing all of the previously gained knowledge.

Curriculum Sequencing KS4

The KS4 curriculum has been designed to enhance previous knowledge and develop more independent designers. Short focused design tasks are incorporated to widen practical knowledge and increase skill base.

Year Group		HT1	HT2	HT3	HT4	HT5	HT6	Notes
7	Content	**Designing Through Sketching and Modelling** 1. 2d and 3D sketching skills 2. Turning 2D into 3D 3. perspective drawing 4. physical modelling 5. 3d CAD modelling 6. Sketch Up project 7. unit assessment	**Timbers** 1. Sources and origins 2. Skills Board 1 3. working properties 4. Skills Board 2 5. Commercial Manufacturing 6. Skills Board 3 7. Skills Board 4/Unit assessment	**Innovation-through-iterative-design** 1. identify design context 2. model test evaluate 3. prototype 4. develop test evaluate 5. is it ready 6. present your progress	**Forces and Stresses** 1. understanding forces and stresses 2. reinforcing and stiffening 3. structures and strength 4. bridge building 5. testing and evaluation 6. material properties	**Mechanical-systems-and-movement** 1. motion and movement 2. cams and followers 3. drive mechanisms 4. card based automata 5. card based automata 6. team building 7. Mechanical systems - Assessment test	**Polymers** 1. Sources and origins 2. Skills Board 1 3. working properties 4. Skills Board 2 5. Commercial Manufacturing 6. Skills Board 3 7. Skills Board 4	Y7 has been sequenced to allow develop design thinking skills using a range of media, from paper to 3D modelling in CAD. Students will begin to understand how products and components work. They will gain a range of practical skills by using hand tools and machinery to complete skills boards using timbers and polymers. Links to GCSE Content – designing, materials and practical knowledge.
8	Content	**Design movements – jewellery** 1. design movements 2. designers & companies 3. design and cultural constraints 4. design movement jewellery - ideas 5. finalising design ideas 6. manufacturing jewellery 7. manufacturing jewellery	**3D printing** 1. intro to 3D printing 2. understanding 3D printing 3. designing components 4. CAD modelling 5. making structures 6. developing 3D printing 7. 3D printing assessment	**Metals** 1. Sources and origins 2. Skills Board 1 3. working properties 4. Skills Board 2 5. Commercial Manufacturing 6. Skills Board 3 7. Skills Board 4/Unit assessment	**Functionality-and-aesthetics** 1. product comparison 2. natural structures and systems 3. geometric shapes in nature 4. organic architecture 5. constructing natural forms 6. presentation of concepts 7. Unit assessment	**problem solving** 1. identifying users' needs 2. specification and development 3. design for the disabled 4. problem solving 5. personalised design 6. critical evaluation 7. Unit assessment	**Circuit Wizard** 1. circuit construction principles 2. using feedback 3. timing systems 4. counters 5. embedding music 6. programming 7. Unit assessment	Y8 has been sequenced to allow students to further enhance in previous knowledge and develop a further understanding of Design and Technology. Students will develop an understanding of different design movements and designers, culminating in and design and make project focusing on a chosen designer. Understand how to design and manufacture using 3D modelling and 3D printing. Develop understanding of constructing and programming circuits. Links to GCSE Content – designing, materials and practical knowledge, modelling and programming.
9	Content	**Design Ventura** 1. Intro, teams, brief. 2. Roles, the DM shop, user centred design 3. idea generation. 4. design criteria and research. 5. design development & sustainability. 6. 3D prototyping. 7. feedback and business context.	**Design Ventura** 1. enterprise and branding 2. costings and budget 3. final design decisions 4. preparing the pitch 5. project review 6. the real world 7. presentations	**Sustainability** **A project working on the 17 United Nations Global Goals.**	**Memphis Design Movement Clock Design** 1. Memphis – theory, Brief and Specification 2. Initial ideas 3. Modelling 4. Manufacture	**Casting (concrete and resin)** 1. Theory 2. Mould making 3. Casting 4. Finishing 5. Mould making 6. Casting 7. Finishing	**Mini NEA** 1. intro - context analysis 2. client, brief, specification. 3. idea generation. 4. Modelling 5. Final Product.	Y9 has been sequenced to develop and demonstrate knowledge gained in the previous years in a series of projects and competitions. The Design Ventura competition is included as introduces team work and real-life design to the curriculum, the students gain knowledge of budgeting and business management with a design focus. The substantiality module is included to give an insight into the united nations global goals, the students will work on a project focusing on the 17 global goals with a focus on the local area. Links to GCSE Content – designing, materials and practical knowledge, modelling, programming and problem solving.
10	Content	• Papers and boards • Timbers • Metals • Polymers • Textiles • Materials and their working properties • Forces and stresses • Improving functionality • Various design and make activities using CAD CAM and practical hand skills	• Ecological and social footprint • The 6 Rs • Scales of production • Common specialist technical principles • Investigation, primary and secondary data • The work of others – designers • The work of others – companies • Design strategies • Various design and make activities using CAD CAM and practical hand skills	• Design strategies • Designing principles • Selection of materials and components • Tolerances • Material management • Tools, equipment, techniques and finishes • Surface treatments and finishes •	• Making principles • Sources, origins and properties • Industry and enterprise • Sustainability and the environment • People, culture and society • Various design and make activities using CAD CAM and practical hand skills. •	• Production techniques and systems • Informing design decisions • Energy generation • Energy storage • Modern materials • Smart materials • Composite materials and technical textiles	• Systems approach to designing • Electronic systems processing • Mechanical devices • NEA launch	Y10 has been sequenced to allow students to further develop previous knowledge and gain a deeper understanding of all theory aspects of the course in preparation for the Non-Exam Assessment and external exam. Small focused practical task will be delivered alongside each area of theory to further embed knowledge.
11	Content	• Specialist material areas – polymer based materials • Sources, origins and properties • Working with timbers • Commercial manufacturing, surface treatments and finishes • Non Exam Assessment	• Non exam assessment	Non Exam Assessment Exam preparation and revision	Non Exam Assessment Exam preparation and revision	Exam preparation and revision	Exam preparation and revision	Y11 has been designed to enable students to showcase all prior knowledge into the Non-Exam Assessment and external exam.