Icknield High School 'Raising the Achievement of All' KEY STAGE 4 CURRICULUM MAP Subject: Design & Technology Year:10

WELL-SEQUENCED **CONTEXUALISED/INCLUSIVE** **AMBITIOUS**

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	• What is industry and enterprise? • What is energy, materials and system & devices • How do you cold form materials ?	• What are materials and properties • What are the common specialist techniques • How can you use 3D drawings to enhance your sketching	• What are the different materials • What is CAD/CAM? • Why is CAD/CAM important in the 21st Century? • How has CAD/CAM developed?	• What are the designing principles? • How has laser cutting helped in industry?	• What are the different joining methods used for metal, wood & plastic? • What is the process of turning?	• What are making principles?
Content: 'Know what'	**Theory:** • Unit 5: Timber/metals: Specialist technical principles **Practical:** • LED light project – Students will manufacture a lamp inspired by Tom Raffield • Students will use a range of techniques to manufacture their product.	**Theory:** Unit 5: Metal/polymers: Specialist technical principles **Practical:** • Students will finalise the different aspects to their project and assemble the different components together • Students will identify what an evaluation is and how it can be used to improve further practical activities	**Theory** Unit 5 – polymers/papers and boards: Specialist technical principles Unit 4 – Common specialist techniques **CAD/CAM** • Students will learn what CAD is and how CAM is used. • Students will learn how to use Onshape to create 3D CAD drawings/renderings **Sketching** • Students will start to identify the different 3D drawing techniques. Oblique, Isometric, One-point, Two-point	**Theory** • Unit 1- Industry and enterprise • Unit 3 – Materials and properties • Unit 6 – Designing principles • Summer mock exam theory preparation **Sketching (Continuation)** • Students will identify the different 3D drawing techniques. Oblique, Isometric, One-point, Two-point **Laser cutting** • Students will design on 2D Design their laser cut LED light box • Students will manufacture their LED light box using the laser cutter	**Theory:** • Summer Mock exam theory preparation **Practical workshop activities using a range of tools and machinery:** • What is brazing through practical activity • What is the lathe through practical activity • Joining methods through practical activity	**Theory:** • Unit 2 – Energy, materials, systems and devices • Unit 7 – Making principles **NEA** Start of the Controlled Assessment. Section A: Research
Expertise 'Know how'	• Question and answer through reading • Creating questions to help with recall • Practical activity in the workshop • Teacher led demonstrations	• Question and answer through reading • Creating questions to help with recall • Practical activity in the workshop • Teacher led demonstrations •	• Question and answer through reading • Creating questions to help with recall • Teacher led demonstrations	• Question and answer through reading • Creating questions to help with recall • Independent set-up of the laser cutter	• Question and answer through reading • Creating questions to help with recall • Practical activity in the workshop	• Question and answer through reading • Creating questions to help with recall • Through independent research and study of their chosen context • Creating mind maps to help explore each contextual challenge in detail.
Literacy/ Numeracy/ SMSC/	• Marking and measuring out is included • Reading extracts from the PG Online book based on Unit 5	• Reading extracts from the PG Online book based on Unit 5	• Reading extracts from the PG Online book based on Unit 5	• Reading extracts from the PG Online book based on Unit 1,3,6 and the summer mock topics • Maths is used to draw out the outline of the LED box using 2D Design	• Reading extracts from the PG Online book based on the summer mock topics • Maths is involved with the practical activities	• Reading extracts from the PG Online book based on Unit 2 and 7
Disciplinary literacy	• Reading from the AQA text book • Student reading of text. Independent or read out loud • Class discussions on what's been read. • Open/closed questioning • Extended writing based on exam style questions • Tier 2-3 words discussed with definitions written in red books • Students create their own set of questions for each theory lesson/topic being taught	• Reading from the AQA text book • Student reading of text. Independent or read out loud • Class discussions on what's been read. • Open/closed questioning • Extended writing based on exam style questions • Tier 2-3 words discussed with definitions written in red books • Students create their own set of questions for each theory lesson/topic being taught	• Reading from the AQA text book • Student reading of text. Independent or read out loud • Class discussions on what's been read. • Open/closed questioning • Extended writing based on exam style questions • Tier 2-3 words discussed with definitions written in red books • Students create their own set of questions for each theory lesson/topic being taught	• Reading from the AQA text book • Student reading of text. Independent or read out loud • Class discussions on what's been read. • Open/closed questioning • Extended writing based on exam style questions • Tier 2-3 words discussed with definitions written in red books • Students create their own set of questions for each theory lesson/topic being taught	• Reading from the AQA text book • Student reading of text. Independent or read out loud • Class discussions on what's been read. • Open/closed questioning • Extended writing based on exam style questions • Tier 2-3 words discussed with definitions written in red books • Students create their own set of questions for each theory lesson/topic being taught	• Reading from the AQA text book • Student reading of text. Independent or read out loud • Class discussions on what's been read. • Open/closed questioning • Extended writing based on exam style questions • Tier 2-3 words discussed with definitions written in red books • Students create their own set of questions for each theory lesson/topic being taught
Careers	• Class discussion on career pathways linking to designing and making • Starter activities linked to careers • Discussion on qualifications needed	• Class discussion on career pathways linking to designing and making • Starter activities linked to careers • Discussion on qualifications needed	• Class discussion on career pathways linking to Ai and job loss • Starter activities linked to careers • Discussion on qualifications needed	• Class discussion on career pathways linking to industry and enterprise • Starter activities linked to careers • Discussion on qualifications needed	• Class discussion on career pathways linking to designing and making • Starter activities linked to careers • Discussion on qualifications needed	• Class discussion on career pathways linking to designing and making • Starter activities linked to careers • Discussion on qualifications