

Holy Family Catholic School – Faculty of Mathematics
Subject –Design and Technology

Autumn Half-Term 1

Year 10

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Red Zone
Week 1 1 - Understanding the course expectations	Expectations, NEA	Course expectations	Expectations, Components,	<ul style="list-style-type: none"> I can understand the content and expectations of the course. I can understand NEA component 1 and NEA component 2. 	Complete the worksheet on using computers for coursework.
2 – Industry and enterprise	Emerging, computers, automation, innovation	New and emerging technologies	Emerging, computers, automation, innovation	<ul style="list-style-type: none"> I can identify new technologies. I can describe the impact of automation on the workplace. I can explain how innovation can drive product development. 	Complete the worksheet on industry and enterprise.
3 – Practical learning Wood-based materials	Rulers Try squares Marking gauges Metric accuracy	Applying material knowledge and techniques	Rulers Try squares Marking gauges Metric accuracy	<ul style="list-style-type: none"> I can use rulers, try squares and marking gauges. I can describe common errors when using marking tools. 	Complete the practical tasks using the correct tools and equipment to accurately mark your work.

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Week 2 4 - Sustainability and the environment	Sustainable Resources Environment Disposal emissions	New and emerging technologies	Sustainable Resources Environment Disposal emissions	<ul style="list-style-type: none"> I can describe the impact of resource consumption. I can identify problems of waste disposal. I can explain the impact of products on the environment. 	Complete the worksheet on sustainability and the environment.
5 – Practical learning Wood-based materials	Tenon saw Coping saw Files Rasps Technique	Applying material knowledge and techniques	Tenon saw Coping saw Files Rasps Technique	<ul style="list-style-type: none"> I can use tools such as tenon saws, coping saws, files and rasps to shape and cut wood. I can demonstrate correct techniques when using cutting tools. 	Complete the practical tasks using the correct tools and equipment to accurately shape and cut your work.
Week 3 6- People, culture and society	Technology push Market pull Fashion trends Societal impact	New and emerging technologies	Technology push Market pull Fashion trends Societal impact	<p>I can identify technology pull and push</p> <p>I can describe changes in fashion and trends</p> <p>I can explain the impact of products on society</p>	Complete the worksheet on people, culture and society.

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7- Practical learning Wood based materials	PPE Safety Workshop Machinery Behaviour	Applying material knowledge and techniques	PPE Safety Workshop Machinery Behaviour	<ul style="list-style-type: none"> I can select appropriate PPE. I can use machinery in a safe manner. I can show appropriate behaviour and attitudes in the workshop. 	Complete the practical tasks using the correct tools and equipment to accurately shape and cut your work while showing awareness of safety in the workshop.
8 – Production techniques and systems	Automation CAD/CAM FMS JIT	New and emerging technologies	CAD/CAM Automation Products	<ul style="list-style-type: none"> I can identify uses of automation. I can describe the impact of FMS on production. I can explain the JIT system. 	Complete the worksheet on production techniques and systems.
Week 4 9- Informing design decisions	Planned obsolescence The 6 R's Ethical Environmental Sustainability Disposal	New and emerging technologies	Planned obsolescence The 6 R's Ethical Environmental Sustainability Disposal	<ul style="list-style-type: none"> I can identify features of planned obsolescence. I can explain ethical design concerns. I can describe the design of recyclable products. 	Complete the worksheet on design decisions.
10 – Practical learning Wood based materials	Joining Screws Nails Adhesives Joints Tools	Applying material knowledge and techniques	Joining Screws Nails Adhesives Joints Tools	<ul style="list-style-type: none"> I can use screws, nails, adhesives. I am able to describe other joining techniques. I can select tools appropriately. 	Complete the practical tasks using the correct tools and equipment to accurately join your workpieces together.

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Week 5 11- Energy generation	Power Fossil fuels Renewable energy Finite energy	Energy, systems, materials and devices	Power Fossil fuels Renewable energy Finite energy	<ul style="list-style-type: none"> I can describe how power is generated. I can explain renewable energy. I am aware of arguments for and against renewable energy. 	Complete the worksheet on energy generation.
12 – Practical learning Wood based materials	Safety Machinery Planning Modification PPE	Applying material knowledge and techniques	Safety Machinery Planning Modification PPE	<ul style="list-style-type: none"> I can select appropriate PPE. I can use machinery in a safe manner. I am able to demonstrate appropriate behaviour and attitudes in the workshop. 	Complete the practical learning lesson demonstrating safety awareness and utilising appropriate techniques to complete the task.
13 – Energy storage	Mechanical power Pneumatics Kinetic Alkaline rechargeable	Energy, systems, materials and devices	Mechanical power Pneumatics Kinetic Alkaline rechargeable	<ul style="list-style-type: none"> I can describe how mechanical power is stored. I can describe pneumatics and hydraulics. I can explain the function of alkaline and rechargeable batteries. 	Complete the worksheet on energy storage.
Week 6 14 – Practical learning Wood based materials	Safety Machinery Planning Modification PPE	Applying material knowledge and techniques	Safety Machinery Planning Modification PPE	<ul style="list-style-type: none"> I can select appropriate finishes such as paint, varnish and stain. I can select finishes appropriate to specific materials. 	Complete the practical learning lesson demonstrating safety awareness and utilising appropriate finishing techniques to complete the task.

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15 – Modern materials	Modern materials Polymers Functionality Development	Energy, systems, materials and devices	Modern materials Polymers Functionality Development	<ul style="list-style-type: none"> I can recognise a range of modern materials. I can describe developments in modern materials. I can explain the functionality of modern materials. 	Complete the worksheet on modern materials.
Week 7 16 - Smart materials	Reaction Stimuli Functional Properties	Energy, systems, materials and devices	Reaction Stimuli Functional Properties	<ul style="list-style-type: none"> I can recognise a range of smart materials. I can describe developments in smart materials. I can explain the functionality of smart materials. 	Complete the worksheet on smart materials.
17 – Composite materials and technical textiles	Combining Composite Technical Textiles Encapsulation	Energy, systems, materials and devices	Combining Composite Technical Textiles Encapsulation	<ul style="list-style-type: none"> I can recognise a range of composite materials. I can describe developments in composite materials. I can explain the functionality of composite materials and technical textiles. 	Complete the worksheet on composite materials and technical textiles.
18 – Practical learning Wood based materials - continued	Finish Stain Protection Enhancement Specific	Applying material knowledge and techniques	Finish Stain Protection Enhancement Specific	<ul style="list-style-type: none"> I can select appropriate finishes such as paint, varnish and stain. 	Complete the practical learning lesson demonstrating safety awareness and utilising appropriate finishing techniques to complete the task.

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				<ul style="list-style-type: none"> I can select finishes appropriate to specific materials. 	
Week 8 19 – Systems and designing	Electronic systems Diagrams Flowcharts Systems Sub systems	Energy, systems, materials and devices	Electronic systems Diagrams Flowcharts Systems Sub systems	<ul style="list-style-type: none"> I can explain the principles of electronic systems. I can describe systems diagrams. I can identify common components. 	Complete the worksheet on systems and designing.
20 – Practical learning final lesson	Finish Stain Protection Modifications Conclusions	Applying material knowledge and techniques	Finish Stain Protection Modifications Conclusions	<ul style="list-style-type: none"> I can select appropriate finishes such as paint, varnish and stain. I can select finishes appropriate to specific materials. 	Complete the practical learning lesson demonstrating safety awareness and utilising appropriate finishing techniques to complete the task.