Holy Family Catholic School – Faculty of Maths – **Design Technology** Autumn Half-Term 2 Year 11

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions for this lesson	Red Zone
Week 9 Lesson 1 Smart materials	Stimuli Functional Aesthetic Properties Application	Materials in DT	Stimuli Functional Aesthetic Properties Applications	**I can identify** different types of smart materials **I can explain** how smart materials respond to changes in their environment. **I can describe** real-world examples of how smart materials are used in products.	Which statement best describes a smart material? A) A material that is lightweight and cheap B) A material that changes its properties in response to external stimuli C) A material that is always rigid and strong D) A material that cannot be recycled	Complete the worksheet
Lesson 2 NEA	Generate Develop Justify Present	Iterative Design Thinking	Generate Develop Justify Present	**I can generate** and refine design ideas that respond creatively to the design brief and user needs. **I can develop** my design through modelling, testing, and iterative improvements. **I can justify** design decisions using research, feedback, and technical understanding.	Which of these is the safest practice when using a craft knife during model making? A) Cut towards your body for better control B) Use a blunt blade to avoid injury C) Cut away from your body on a cutting mat D) Hold the material in your hand while cutting	Produce the required paperwork independently as per the **AQA** coursework guidelines

Holy Family Catholic School – Faculty of Maths – **Design Technology** Autumn Half-Term 2 Year 11

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions for this lesson	Red Zone
Week 10 Lesson 3 Composite and technical materials	Stimuli Functional Aesthetic Properties Application	Materials in DT	Stimuli Functional Aesthetic Properties Applications	**I can identify** different types of technical materials and their key properties. **I can explain** how technical materials are engineered to improve performance. **I can describe** examples of products that use technical materials and why they are suitable.	What is a composite material? A) A material made from a single natural source B) A material created by combining two or more materials to improve properties C) A material that only changes shape when heated D) A material that cannot be engineered	Complete the worksheet
Lesson 4 NEA	Generate Develop Justify Present	Iterative Design Thinking	Generate Develop Justify Present	**I can generate** and refine design ideas that respond creatively to the design brief and user needs. **I can develop** my design through modelling, testing, and iterative improvements. **I can justify** design decisions using research, feedback, and technical understanding.	Which of these is the safest way to store tools after use? A) Leave them on the workbench B) Put them back in the designated storage area C) Keep them in your pocket for quick access D) Place them on the floor under the table	Produce the required paperwork independently as per the **AQA** coursework guidelines

Holy Family Catholic School – Faculty of Maths – **Design Technology** Autumn Half-Term 2 Year 11

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions for this lesson	Red Zone
Lesson 5 Practical learning	Safety Tools Equipment Accuracy Planning Focus	Applied Design Skills	Safety Tools Equipment Accuracy Planning Focus	**I can** complete practical tasks with accuracy and independence. **I can use** tools, equipment, and materials safely and correctly	What should you do before using any power tool? A) Check the tool for damage and wear B) Remove all safety guards for better visibility C) Hold the material loosely D) Ignore the teacher's instructions	Complete the worksheet
Week 11 Lesson 6 Mechanical devices	Movements Devices Levers Mechanism Motion	Systems and devices	Movements Devices Levers Mechanisms Motion	I **can identify** different types of mechanical devices such as levers, linkages and cams, **I can explain** how these devices change the magnitude or direction of motion **I can describe** examples of how mechanical devices are used in products and systems.	What is the main function of a lever? A) To store energy B) To change the magnitude or direction of force C) To convert electrical energy into motion D) To reduce friction	Complete the worksheet

Holy Family Catholic School – Faculty of Maths – **Design Technology** Autumn Half-Term 2 Year 11

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Lesson 7 NEA	Generate Develop Justify Present		Generate Develop Justify Present	**I can generate** and refine design ideas that respond creatively to the design brief and user needs. **I can develop** my design through modelling, testing, and iterative improvements. **I can justify** design decisions using research, feedback, and technical understanding.	When soldering components, what is the most important safety step? A) Hold the soldering iron by the heated tip B) Wear safety goggles and keep the iron in its stand when not in use C) Touch the solder immediately after heating D) Work near flammable materials	Produce the required paperwork independently as per the **AQA** coursework guidelines
Week 12 Lesson 8 Practical learning	Safety Tools Equipment Accuracy Planning Focus	Applied Design Skills	Safety Tools Equipment Accuracy Planning Focus	**I can** complete practical tasks with accuracy and independence. **I can use** tools, equipment, and materials safely and correctly	Why should long hair be tied back during practical work? A) To look professional B) To prevent it from getting caught in machinery C) To keep it clean D) To avoid blocking your view	Complete the worksheet

Holy Family Catholic School – Faculty of Maths – **Design Technology** Autumn Half-Term 2 Year 11

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions for this lesson	Red Zone
Lesson 9 NEA	Generate Develop Justify Present	Iterative Design Thinking	Generate Develop Justify Present		Which of these is the safest way to handle adhesives? A) Apply with bare hands B) Use in a well-ventilated area and wear gloves if necessary C) Heat the adhesive for faster drying D) Store near heat sources	Produce the required paperwork independently as per the **AQA** coursework guidelines
Lesson 10 Timbers	Primary sources Categorise Physical and working properties	Materials in DT	Primary sources Categorise Physical and working properties	**I can identify** different types of woods **I can describe** the key properties and working characteristics. **I can explain** why specific woods are chosen for particular products or applications	Which timber is commonly used for furniture due to its strength and attractive grain? A) MDF B) Oak C) Balsa D) Plywood	Complete the worksheet
Week 13 Lesson 11 NEA	Generate Develop Justify Present	Iterative Design Thinking	Generate Develop Justify Present	**I can generate** and refine design ideas that respond creatively to the design brief and user needs. **I can develop** my design through modelling, testing, and iterative improvements.	What should you do if you spill water near electrical equipment? A) Ignore it B) Continue working C) Turn off the power and clean up immediately D) Use a cloth while	Produce the required paperwork independently as per the **AQA** coursework guidelines

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions for this lesson	Red Zone
				I can justify design decisions using research, feedback, and technical understanding.	equipment is still plugged in	
Lesson 12 Metals and alloys	Primary sources Categorise Physical and working properties	Materials in DT	Primary sources Categorise Physical and working properties	**I can identify** different types of metals and alloys **I can explain** the differences between ferrous, non-ferrous metals, and alloys. **I can describe** how metals and alloys are selected for specific products.	Which of these is a non-ferrous metal? A) Steel B) Aluminium C) Cast iron D) Mild steel	Complete the worksheet
Week 14 Lesson 13 NEA	Generate Develop Justify Present	Iterative Design Thinking	Generate Develop Justify Present	**I can generate** and refine design ideas that respond creatively to the design brief and user needs. **I can develop** my design through modelling, testing, and iterative improvements. **I can justify** design decisions using research, feedback, and technical understanding.	Why should you wear goggles when sanding wood? A) To keep your eyes warm B) To protect your eyes from dust and particles C) To improve visibility D) To avoid glare from lights	Produce the required paperwork independently as per the **AQA** coursework guidelines

Holy Family Catholic School – Faculty of Maths – **Design Technology** Autumn Half-Term 2 Year 11

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions for this lesson	Red Zone
Lesson 14 Polymers	Primary sources Categorise Physical and working properties	Materials in DT	Primary sources Categorise Physical and working properties	**I can identify** different types of polymers, **I can explain** the key properties and characteristics of different polymers. **I can describe** examples of how polymers	Which polymer is commonly used for plastic bottles? A) PVC B) PET C) Acrylic D) Nylon	Complete the worksheet
Lesson 15 Practical learning	Safety Tools Equipment Accuracy Planning Focus	Applied Design Skills	Safety Tools Equipment Accuracy Planning Focus	**I can** complete practical tasks with accuracy and independence. **I can use** tools, equipment, and materials safely and correctly	What is the correct way to carry a saw in the workshop? A) Hold it by the blade B) Hold it by the handle with the blade pointing down C) Carry it horizontally at chest height D) Swing it by your side	
Red week 15 Lesson 16 Textiles	Primary sources Categorise Physical and working properties	Materials in DT	Primary sources Categorise Physical and working properties	**I can identify** and explain the performance characteristics of natural and synthetic fibres. **I can describe** how environmental and economic factors influence textile production.	Which fibre is synthetic? A) Cotton B) Wool C) Polyester D) Silk	Complete the worksheet

Holy Family Catholic School – Faculty of Maths – **Design Technology** Autumn Half-Term 2 Year 11

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				I can apply my understanding of technical textiles to explain their uses in modern products.		
Lesson 17 NEA	Generate Develop Justify Present	Iterative Design Thinking	Generate Develop Justify Present	**I can generate** and refine design ideas that respond creatively to the design brief and user needs. **I can develop** my design through modelling, testing, and iterative improvements. **I can justify** design decisions using research, feedback, and technical understanding.	What should you do before leaving the workshop? A) Leave tools on the bench B) Switch off all machines and tidy your workspace C) Keep materials on the floor D) Ignore cleaning up	Produce the required paperwork independently as per the **AQA** coursework guidelines