Construction Key Stage 4 Curriculum Overview

Key Stage 4 Curriculum Journey: Vocational Construction

Y10	Week 1 → Week 39		
	Joinery	***Bricklaying***	***Painting and Decorating***

Key content (know that…Know how…)	**<u>Joinery practical</u>**
	• Materials used
	• Properties of materials
	• interpreting a range of technical sources of information, using the symbols, conventions and terminology of:
	  ○ specifications
	  ○ building regulations
	  ○ drawings
	  ○ design briefs.
	• Health and safety requirements – PPE. the importance of ensuring the cleanliness and safety of work areas that work areas should be clean and free of any obstructions or trip hazards that the area should be adequately sized for the task allowing for safe completion of all activities that first aid facilities should be easily reached.
	• Tools and specialist equipment
	• Planning the project
	• Techniques (Different construction areas – Carpentry)
	• Joints and their uses *Students to produce common wood working joints – lap / mitre / box / dove / T&G
	• Measuring and making out on timbers – techniques
	• Cutting timbers
		<u>Bricklaying Practical</u>
		• Materials used
		• Properties of materials
		• interpreting a range of technical sources of information, using the symbols, conventions and terminology of:
		  ○ specifications
		  ○ building regulations
		  ○ drawings
		  ○ design briefs.
		• Health and safety requirements – PPE. the importance of ensuring the cleanliness and safety of work areas that work areas should be clean and free of any obstructions or trip hazards that the area should be adequately sized for the task allowing for safe completion of all activities that first aid facilities should be easily reached.
		• Tools and specialist equipment
		• Planning the project
		• Techniques
		• Different bonding methods and where they are used
		• Marking out courses and lines
		• String lines and spirit levels
		• Laying mortar
		• Levelling bricks and blocks
		• Multiple bonds
			<u>Painting and decorating practical</u>
			• Materials used
			• Properties of materials
			• interpreting a range of technical sources of information, using the symbols, conventions and terminology of:
			  ○ specifications
			  ○ building regulations
			  ○ drawings
			  ○ design briefs.
			• Health and safety requirements – PPE. the importance of ensuring the cleanliness and safety of work areas that work areas should be clean and free of any obstructions or trip hazards that the area should be adequately sized for the task allowing for safe completion of all activities that first aid facilities should be easily reached.
			• Tools and specialist equipment
			• Planning the project
			• Techniques
			• Uses in industry
			• Preparation of work area – dust sheets and sanding
			• Masking off
			• Emulsion and glossing
			• Use of wallpaper and adhesive

	• Finishing timbers
	• Filler and sanding
	• Practical applications
	• *Frame practical – use of the different joints to make a complete frame
	• House joinery methods
	  ○ Model frame of a timber house – Construction methods
	  ○ Noggin / Strut / Joist
	• Practical assessment – Window / Door frame mini joint practical – Assessing tolerance
	
	• Removing and disposal of materials - Gain knowledge, understanding and skills in removing and safely disposing of materials used in carrying out three of the above techniques, focussing on safe and environmentally responsible means of disposing or recycling of materials.
	
	• Gain knowledge, understanding and skills in evaluating the quality of completed construction tasks, including how outcomes can be evaluated:
	  • requirements of the brief
	  • personally-set success criteria
	  • needs of end users, including their safety.
	
	Understanding and skills in calculating the materials required to complete construction tasks that meet design requirements, in relation to:
	  • Volume
	  • Area
	  • Perimeter
		○ Stretcher
		○ Flemish
		○ English
		• Jointing methods – Brick jointer – Techniques
		• Joining brick and block – wall ties
		• Quoin and corners
		• Practical assessment – Bricklaying assessment to given dimensions – 5 course and corner return
		
		• Removing and disposal of materials - Gain knowledge, understanding and skills in removing and safely disposing of materials used in carrying out three of the above techniques, focussing on safe and environmentally responsible means of disposing or recycling of materials.
		
		• Gain knowledge, understanding and skills in evaluating the quality of completed construction tasks, including how outcomes can be evaluated:
		• requirements of the brief
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		• needs of end users, including their safety.
		
		Understanding and skills in calculating the materials required to complete construction tasks that meet design requirements, in relation to:
		  • Volume
		  • Area
		  • Perimeter
		  • Time
		  • ratio.
			• Dado rails and skirting boards – Finishing methods
			
			• Removing and disposal of materials - Gain knowledge, understanding and skills in removing and safely disposing of materials used in carrying out three of the above techniques, focussing on safe and environmentally responsible means of disposing or recycling of materials.
			
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			  • Volume
			  • Area
			  • Perimeter
			  • Time
			  • ratio.
			
			<u>Unit 1 Theory</u>
			
			<u>Trades, employment and careers 1.7</u>
			• Bricklaying
			• stonemasonry
			• plastering

	• Time • ratio. **Unit 1 Theory** **The Sector – 1.1** • Buildings and structures • Infrastructure and civil engineering • Building services • Job roles and responsibilities **The built environment life cycle 1.2** • Raw material extraction • Manufacturing • Construction - new buildings and structures and the assembly on site of prefabricated elements • Operation and maintenance • Demolition • Disposal, reuse or recycling. **Types of building and structure 1.3** • Different forms of infrastructure construction • Low-rise: • Residential dwellings • Commercial building • Industrial buildings • Agricultural buildings • Community buildings • Religious buildings • Recreational buildings.	**Unit 1 Theory** **Technologies and Materials 1.4** Understanding of tools, technologies and materials used in the construction and built environment sector: • Main elements and components of low-rise buildings • Main materials involved in constructing walls, installing building services, fitting roofs and interiors • renewable technologies and materials, including heat pumps, wind turbines and solar panels. **Building structures and forms 1.5** Understanding of the following building structures and forms: • Cellular constructions • Rectangular frame constructions • Portal frame constructions • Heritage and traditional methods **Sustainable Construction Methods 1.6** Understanding of issues related to sustainable Construction methods: • The environmental, financial, cultural and social benefits of sustainable construction methods • Pollution and the preservation of the natural environment and natural habitats • Sustainable materials used to create building frames, walls, roofs • waste disposal, re-use and recycling • planning permission, brownfield sites and greenfield sites	• carpentry and joinery • electrical installation • plumbing installation • painting and decorating • flooring and tiling. **Health and Safety 1.8** Understanding of health and safety in relation to: • Risks for employees, employers and the public during construction and the built environment projects • Following procedures and carrying out risk assessments • Relevant legislation, including health and safety at work act and control of substances • Hazardous to health (coshh) regulations • Using personal protective equipment (ppe) • Safely working with gas, water and electricity

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<td>Prior Knowledge</td>
<td>*Note from exam board* Although there are no formal entry requirements, learners would find the following learning skills and aptitudes helpful: basic proficiency in literacy and numeracy, problem solving and enterprise, and motivation to work independently

<u>Joinery Practical</u>
• General understanding of health and safety and how to stay safe in a workshop environment
• Names of tools and equipment and some understanding of their usage
• Marking and drawing on to timber
• Cutting and filing materials
• Sanding and joining materials
• General assembly

<u>Unit 1 Theory</u>
As this subject is not commonly taught at KS3 – Students prior knowledge will be what they have learned outside of the classroom about construction and how things are made in the built environment. Students should have some understanding of terms used through English lessons. Students should understand what building names are and how they are used.</td>
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<u>Bricklaying Practical</u>
• General understanding of health and safety and how to stay safe in a workshop environment
• Names of tools and equipment and some understanding of their usage

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<u>Joinery Practical</u>
• General understanding of health and safety and how to stay safe in a workshop environment
• Names of tools and equipment and some understanding of their usage
• Use of craft knifes from KS3 and masking tape
• How to hold and use a paint brush – KS3 DT and Art lessons

<u>Unit 1 Theory</u>
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<td>Assessment Objectives</td>
<td colspan="3">AO1 - Demonstrate knowledge and understanding from across the specification.
AO2 - Apply skills (including practical skills), knowledge and understanding in a variety of contexts and in planning and carrying out investigations and tasks.
AO3 - Analyse and evaluate information, making reasoned judgements and presenting conclusions</td>
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Assessments	AO1 - Unit 1 – Theory based assessment Unit 1 AO2 – Joinery practical assessments • Joints • Frame • House construction AO3 – Written assessment - Evaluation of joinery practical work	AO1 - Unit 1 – Theory based assessment Unit 1 AO2 – Bricklaying practical assessments • Wall 1 – Straight • Wall 2 - Corner • Wall 3 – Brick and Block AO3 – Written assessment - Evaluation of brick practical work	AO1 - Unit 1 – Theory based assessment Unit 1 AO2 – Painting and decorating practical assessments • Masking and Emulsion • Glossing • Wallpaper AO3 – Written assessment - Evaluation of painting and decorating practical work

Y11	Week 1 ⟷ Week 39	
	Constructing the built environment – Practical 60%	***Introduction to the built environment - Exam Theory 60%***
Key content (know that…Know how…)	***Due to 2 hour per week at option subjects. They students will focus on completing 1 lesson per week of NEA work and 1 lesson per week of exam theory to ensure that the different content is delivered.***	
	HHHS Cover Unit 3 of the specification as this links to more hands on practical tasks which are more suited to the students who are opting for this course The realisation of construction projects requires the services of many construction specialists. A significant number of these specialists will be engaged in what are often referred to as 'trades' (see unit 1 - 1.7). This units requires learners to complete a construction project which focusses on the preparation and completion of three realistic trade-based tasks. Throughout the year the students will be undertaking practical based tasks which will lead to them focussing on the areas below as part of the development of these construction projects. • 3.1 Interpreting technical sources of information – reading drawings and information given • 3.2 Planning and organising work – creating a step by step guide to their work • 3.3 Identifying resource requirements – tools and equipment lists • 3.4 Calculating the materials required – Costing and working out based on information from drawings • 3.5 Writing and setting success criteria – Method statement and success criteria for the tasks they are undertaking. These will be evaluated after the work is complete. • 3.6 Prepare for construction tasks – Gathering the correct equipment for the tasks – done by observer records from teachers. • 3.7 Carrying out techniques – undertaking the practical tasks and finishing the work to a high standard – teacher observation record	*Exam Theory* *Students will be taught a range of theory content. Some theory content will be recall and some will be new. Students will have a range of exam questions to complete based on the theory they have learned.* • Understanding the exam • Exam language • Layout of questions and the paper This unit introduces learners to the construction sector and the type of professional and trade roles and activity that is undertaken. The learner will explore the different types of buildings and structures that the built environment forms. Sustainability and the impact of the built environment on the local community is explored along with reduction measures that can be employed. Unit 1 – Introduction to the built environment • The sector • The built environment life cycle • Types of building and structure • Technologies and materials • Building structures and forms • Sustainable construction methods • Trades, employment and careers • Health and safety

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- 3.8 Removing and disposing of materials – tidying up after the project is complete – teacher observation records
- 3.9 Working practices that promote health and safety – observation records from teachers. Are the students following health and safety guidance and working safely at all times.
- 3.10 Evaluating construction tasks – Based on their success criteria. Have they completed the job to the standards they suggested they would.

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<tr><td>Prior Knowledge</td><td>

<u>Practical Tasks</u>

- Students will recap on prior knowledge learned throughout Y10 and Y11 to help them develop their practical project
- Recap KS3 knowledge of tools not used in Y10 / Y11 but used previously at KS3 in Design and Technology.
- Students will have to undertake independent research
- General understanding of the project / product they are going to make
- Materials knowledge and what different products can be made from

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<u>Exam Content</u>
Prior knowledge will be relevant throughout all areas of exam revision for topics that have been previously covered in Y10 or KS3. All topics will have areas for recall and links to past projects and skills.
Prior knowledge will be checked at the start of each unit area to ensure the students can relate to the subject / topic area and have a base for starting to develop further.

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<tr><td rowspan="2">Assessment Objectives</td><td colspan="2">

- AO1: Demonstrate knowledge and understanding of engineering principles and processes.
- AO2: Apply knowledge, understanding and skills in different contexts, including through the use of a range of tools, equipment, materials, components and manufacturing processes.
- AO3: Analyse and evaluate evidence in relation to a range of engineering contexts.

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This unit is internally assessed through controlled assessment available in January and May each year.
This assessment contributes 60% to the overall qualification grade.

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This unit is externally assessed through a written examination available in January/February and May/June each year.
Duration: 1 hour 30 minutes
Number of marks: 80
Format: objective responses, short and extended answer questions based around applied situations.
Learners may be required to use stimulus material to respond to questions.
This assessment contributes 40% to the overall qualification grade

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Assessments	NEA cannot be feedback upon live while the students are working on it. Generic feedback can be given to help support the students. Students can recall what they learned during Y10 and feedback given to their practical. NEA is internally moderated and then sent to the exam board by the deadline for external moderation and final grading. Unit 3 is assessed through controlled assessment, released in May each year and submitted for external moderation in December and May each year (first submission in May 2023). Centres must follow the instructions for running controlled assessments in the Administration Guide and within each Unit Guide. In line with these instructions, centres are required to have in place a controlled assessment policy (which can be part of a centre's NEA policy).	November Mock series Feb Mock series Summative assessments used throughout the year – trackers / class tests and quizzes used to help track progress Each external examination will: • be set and marked by WJEC • consist of a 1 hour, 30 minute on-screen examination • assess content from each topic in the unit each series • include 80 marks • include a balance of short and extended answer questions, based on stimulus material and • applied contexts • only use the command verbs listed in the Assessment Guide (Chapter 4) • be graded Level 1 Pass, Level 1 Merit, Level 1 Distinction, Level 1 Distinction*, Level 2 Pass, Level • 2 Merit, Level 2 Distinction, Level 2 Distinction*