

Share Multi Academy Trust

Curriculum Planning Template

Subject:	Construction Tech Award	Year	10	Ability	Mixed					
Term / Date(s)	Half-term 1	Half-term 2	Half-term 3	Half-term 4	Half-term 5	Half-term 6				
Topic	Component 2 – Construction in practice Learning outcome 1 – H&S & risk	Component 2 – Construction in practice Learning outcome 2 – Practical	Component 2 – Construction in practice Learning outcome 2 – Practical	Component 3 – Construction & design	Component 3 – Construction & design	Component 3 – Construction & design				
Topic overview	How to further categorize and level potential risks and suggest suitable control measures for a range of tooling and equipment specific to joinery.	How to accurately use a wide range of tools, machinery & information for the Pearson set assignment brief PSA (Nov).	How to accurately use a wide range of tools, machinery & information for the Pearson set assignment brief PSA.	How designs are influenced by client needs and external constraints when designing low rise buildings.	How to analyse the constraints on a design in order to produce a detailed client brief.	How to produce a final concept idea for an external appearance				
Pupils will learn...	How to use and write an industry standard risk assessment in order to manage risk in the workshop. How to accurately use a wide range of tools, machinery & information for specific carpentry and joinery tasks.	How to develop technical & practical skills further in order to produce a high-quality outcome with accuracy and skill.	How to develop technical & practical skills further in order to produce a high-quality outcome with accuracy and skill.	How buildings can be built using sustainable methods in order to design an environmentally friendly building.	How to use a wide range of graphic communication techniques to design a suitable building for a given client.	How to produce a final concept idea for an internal layout plan.				
Components	Students will use acquired knowledge and observation and analysis skills to show their awareness of hazards and risk in an area. Students will be able to produce individual control measures to remove or minimise the risk. Students will create risk assessments based on the practical processes required to manufacture a range of timber frame joints. (Dovetail, mortise and tenon, dowel, lap, finger, mitre). To identify the purpose of tools and equipment and the uses of materials for carpentry and joinery To produce a range of practice joints taking tolerance and accuracy into account.	Students will demonstrate practical skills with tools and materials, and planning and time management skills to create a constructed outcome to the PSA. Students will create an industry standardised risk assessment based on the practical processes required in the PSA. Students will ensure the finished product is fully compliant with the specification and drawing provided in the PSA. Students will ensure that all dimensions of the product are within specified tolerances.	Students will demonstrate practical skills with tools and materials, and planning and time management skills to create a constructed outcome to the PSA. Students will ensure the finished product is fully compliant with the specification and drawing provided in the PSA. Students will ensure that all dimensions of the product are within specified tolerances.	Students to get an understanding of how urban areas are designed in order to realise its impacts on society. Students will investigate the employment opportunities in the sector so that they have a wider understanding of how this can benefit society. Students will need to consider the design requirements for the client's environmental and sustainable	Students will understand that a design brief must be fit for a specific client whilst satisfying planners and other agencies. Students will demonstrate an understanding of how to produce a fully developed client profile which interprets the client's lifestyle requirements and building design. Students will develop further understanding of how to produce detailed 3D isometric sketches (Building upon skills & knowledge from Y9 HT2). Students will develop further understanding of how to produce detailed 3D 1-point & 2-point sketches (Building upon skills & knowledge from Y9 HT2).	Students apply further understanding of how to correctly annotate working drawings, sketches concept ideas. (Building upon skills & knowledge from Y9 HT2& Y10 HT5) Students will develop further understanding of how to produce detailed 3D isometric sketches (Building upon skills & knowledge from Y9 HT2). Students will develop further understanding of how to produce detailed 3D 1-point & 2-point sketches (Building upon skills & knowledge from Y9 HT2). Students will develop further understanding of how to produce detailed plan view layout plans (Building upon skills & knowledge from Y9 HT2).				

<p>What pupils should already know (prior learning components)</p>	<p>Students should know how to use general workshop tools safely and accurately so that they can cut out new timber joints. <i>(Building upon subject knowledge and practical skills from Year 9 HT3).</i></p> <p>Students should be able to identify hazards in a workshop so they can work safely. <i>(Building upon subject knowledge and practical skills from KS3).</i></p> <p>Students should understand the function of a specification and be able to write and use on. <i>(Building upon subject knowledge and practical skills from KS3).</i></p> <p>Students should know the importance of producing high quality products for clients, users and customers</p>	<p>Students should know how to measure, mark out and cut a range of timber joints accurately and safely. <i>(Building upon subject knowledge and practical skills from Year 10 HT1).</i></p> <p>Students should be able to write a detailed risk assessment in order to keep themselves and others safe in the workshop. <i>(Building upon subject knowledge and practical skills from KS3 and Year 10 HT1).</i></p>	<p>Students should know how to measure, mark out and cut a range of timber joints accurately and safely. <i>(Building upon subject knowledge and practical skills from Year 10 HT1).</i></p> <p>Students should be able to write a detailed risk assessment in order to keep themselves and others safe in the workshop. <i>(Building upon subject knowledge and practical skills from KS3 and Year 10 HT1).</i></p>	<p>Students will design and model an attractive, aesthetically pleasing building that would be pleasant for a specific client to live in. <i>(Building upon subject knowledge and practical skills from Year 9 HT2).</i></p> <p>Students will be able to evaluate against the specification and identify ways of improving them so that an evaluation and modification can be written. <i>(Built upon the basics from HT2 Yr8 & HT1+ HT2 Y9).</i></p> <p>About the importance of design and how it can influence consumer choice. <i>(Building upon subject knowledge and practical skills from Year 9 HT1)</i></p>	<p>Students will understand how to produce a working drawing to meet the design brief; ensuring students can evaluative techniques to identify the most successful design idea. <i>(Built upon the basics from KS3)</i></p> <p>Students will be able to evaluate against the specification and identify ways of improving them so that an evaluation and modification can be written. <i>(Built upon the basics from HT2 Yr8 & HT1+ HT2 Y9).</i></p> <p>Students will understand how to draw using isometric 1-point and 2-point design styles. <i>(Building upon skills & knowledge from Y9 HT2).</i></p> <p>About the importance of design and how it can influence consumer choice. <i>(Building upon subject knowledge and practical skills from Year 9 HT1)</i></p>	<p>Students will have an understanding of graphical techniques with a good level of accuracy.</p> <p>Students have a good understanding of the design requirements.</p>
<p>Transferrable knowledge (skills)</p>	<p>How to select and use workshop tools in order to produce a high-quality outcome.</p> <p>How to work safely in the workshop to produce a high-quality outcome.</p> <p>Understanding the working properties of materials will help students make informed decisions when selecting materials for future projects.</p> <p>Students can identify essential hand tools and can safely operate larger equipment.</p>	<p>Students develop organisational, design and practical skills, showing they can produce and work from high quality working drawings. <i>(Building upon subject knowledge and practical skills from KS3).</i></p> <p>How to select and use workshop tools in order to produce a high-quality outcome.</p> <p>How to work safely in the workshop to produce a high-quality outcome.</p> <p>Understanding the working properties of materials will help students make informed decisions when selecting materials for future projects.</p> <p>Students can identify essential hand tools and can safely operate larger equipment. <i>(Building upon subject knowledge and practical skills from Year 10 HT1).</i></p>	<p>How to select and use workshop tools in order to produce a high-quality outcome.</p> <p>How to work safely in the workshop to produce a high-quality outcome.</p> <p>Understanding the working properties of materials will help students make informed decisions when selecting materials for future projects.</p> <p>Students can identify essential hand tools and can safely operate larger equipment. <i>(Building upon subject knowledge and practical skills from Year 10 HT1 + HT2)</i></p>	<p>How to generate, annotate and communicate design ideas.</p> <p>How to use CAD packages in order to produce high quality working drawings.</p> <p>How to evaluate and refine their ideas and products against a specification, considering the views of intended users and other interested groups.</p> <p>Students develop organisational, design and practical skills, showing they can produce and work from high quality working drawings. <i>(Building upon subject knowledge and practical skills from KS3).</i></p>	<p>How to estimate the costs of materials.</p> <p>How to measure and mark out: interpretation of construction drawings.</p> <p>How to generate, annotate and communicate design ideas.</p> <p>How to use CAD packages in order to produce high quality working drawings.</p>	<p>How to estimate the costs of materials.</p> <p>How to measure and mark out: interpretation of construction drawings.</p> <p>How to generate, annotate and communicate design ideas.</p> <p>How to use CAD packages in order to produce high quality working drawings.</p>
<p>Key vocabulary pupil will know and learn</p>	<p>Setting-out tools including: tri-square, sliding bevel, carpenter's pencil, marking/mortice gauges, combination square, tape measure & spirit level.</p>	<p>Preparing and setting up the work area:</p> <p>Marking out and cutting joints (bridle joint, mitre joint, half lap joint, housing joint, tee halving joint,</p>	<p>Marking out and cutting joints (bridle joint, mitre joint, half lap joint, housing joint, tee halving joint, dovetail joint, mortise and tenon joint).</p>	<p>House footprints, Traditional framed structures, Building regulations, accessibility requirements, planning objections, flood risks, local climates, budgets,</p>	<p>Accurate, analyse, appropriate, design brief, communicate, compare, comparison, competent, consideration, creative, demonstrate, detailed,</p>	<p>Developed, sketches, layout plans, orientation, isometric, orthographic, dimensioning, perspective, client, plan</p>

	Hand tools and equipment including: mallet, chisels (bevelled and mortise), universal saw, nail punch, claw hammer, nail pincers, screwdrivers (slotted, pozi drive, Phillips), bradawl, cordless drill, drill types and sizes.	dovetail joint, mortise and tenon joint). Assembly of joint, measuring, marking out and constructing a timber frame using a setting-out rod. Cutting joints to make a timber frame: gluing up a timber frame using sash cramps/G clamps on a level surface, checking frame is square (check diagonals). Safe use of chisels, saws, cordless drills. Using dust-minimisation techniques.	Assembly of joint, measuring, marking out and constructing a timber frame using a setting-out rod. Cutting joints to make a timber frame: gluing up a timber frame using sash cramps/G clamps on a level surface, checking frame is square (check diagonals). Safe use of chisels, saws, cordless drills.	specifications, end users, clients, orientation, renewable energy, carbon foot print, maintenance, thermal efficiency and sustainability.	extensive, generic, perceptive, range, secure, simplistic, suitable & unsupported.	orientation, side orientation, front orientation.
Assessment activities	Practical outcome assessed. Verbal feedback used as formative assessment throughout the project.	Practical outcome assessed. Verbal feedback used as formative assessment throughout the project.	This assessment must be formally supervised (8 hours) Moderated January and marks sent off to Pearson. A Sample of 10 required.	36 GLH 2 hours monitored prep time to make notes with access to the internet. This must be monitored	36 GLH 2 hours monitored prep time to make notes with access to the internet. This must be monitored	6 hours to complete the project in examination conditions in line with Pearson.
Resources available	This unit requires a fully equipped carpentry and joinery workshop, with tools and materials of a nature and standard typical of a real, industrial work environment, together with personal protective equipment (PPE) applicable to the production of the practical task.	This unit requires a fully equipped carpentry and joinery workshop, with tools and materials of a nature and standard typical of a real, industrial work environment, together with personal protective equipment (PPE) applicable to the production of the practical task.	This unit requires tools and materials of a nature and standard typical of a real, industrial work environment, together with personal protective equipment (PPE) applicable to the production of the practical task.	Drawing boards, A3 paper, technical drawing equipment, google sketch-up, Techsoft-2D design.	Drawing boards, A3 paper, technical drawing equipment, google sketch-up, Techsoft-2D design.	Drawing boards, A3 paper, technical drawing equipment.

Subject: Construction Tech Award Year 11 Ability MA

Term / Date(s)	Half-term 1	Half-term 2	Half-term 3	Half-term 4 / 5
Topic	Component 3 – internal assessment	Component 3 – internal assessment	Component 1 – internal assessment	Revision for any necessary re-sit of Component 1
Topic overview Pupils will learn...	<p>How to create a plan considering needs of a client and the constraints on design when designing a low-rise building. A2 Constraints on design</p> <p>Produce a client profile and the constraints on design when designing a low-rise building. A3 Client brief for the design of a low-rise building</p>	<p>How to use a wide range of graphic communication techniques to design a suitable building for a given client. (Following from Y10 HT 4 linked to the final component 3 assessment.</p> <p>How to produce a final concept idea for an internal layout plan for the final assessment component 3 (Links to HT 6 Y10)</p>	<p>How the functions and features of different floors, walls and roofs are used in the construction of superstructures in low rise buildings.</p> <p>How diverse the construction industry through an understanding of the different technology used in low rise construction projects.</p> <p>How to identify and design superstructures are constructed.</p> <p>How sustainability is a key feature of modern building design.</p>	<p>How to make connections between past construction papers to ensure appropriate revision strategies.</p> <p>How buildings are designed and constructed.</p> <p>How buildings serve different purposes and perform in different ways.</p> <p>How sub-structures are constructed to perform under different conditions.</p>
Components	<p>Students will understand that the final assignment design brief must be fit for a specific client whilst satisfying planners and other agencies.</p> <p>Students will demonstrate an understanding of how to produce a fully developed client profile which interprets the client’s lifestyle requirements and building design ready for the Pearson set assignment</p> <p>Students will develop further understanding of how to produce detailed 3D isometric sketches (Building upon skills & knowledge from Y9 HT2).</p> <p>Students will develop further understanding of how to produce detailed 3D 1-point & 2-point sketches (Building upon skills & knowledge from Y9 HT2 and Y10 HT 5).</p>	<p>Students apply further understanding of how to correctly annotate working drawings, sketches concept ideas. (Building upon skills & knowledge from Y9 HT2& Y10 HT5)</p> <p>Students will develop further understanding of how to produce detailed 3D isometric sketches (Building upon skills & knowledge from Y9 HT2).</p> <p>Students will develop further understanding of how to produce detailed 3D 1-point & 2-point sketches (Building upon skills & knowledge from Y9 HT2).</p> <p>Students will develop further understanding of how to produce detailed plan view layout plans (Building upon skills & knowledge from Y9 HT2).</p>	<p>Students will be able to sketch and annotate the different types of details and features of floors, walls and roofs.</p> <p>Students will understand the different methods of building floors, roofs and walls.</p> <p>Students will understand the benefits and drawbacks of a range of construction methods relating to floors, walls and roofing.</p> <p>Students will outline the range of work the construction industry undertakes.</p> <p>Students will understand the types of work the construction industry undertakes.</p> <p>Students will describe the ranges of activities undertaken by the construction industry.</p> <p>Students will evaluate the local and national contributions made by the construction industry to society</p>	<p>Students will be given a bespoke revision plan based on their performance within their latest mock and actual exam scores.</p> <p>A1 - Students will need to know different performance requirements that are necessary to design buildings.</p> <p>A2- Students must know the purpose of sustainable construction.</p> <p>A3 – Students will need to understand the ways structural forms in low-rise construction are used along with their features.</p> <p>B1 - Students to be able to identify desk-based preconstruction activities.</p> <p>B2 – Students will understand how ground works are constructed.</p> <p>C1 – Students will understand the features of walls used in the construction of low-rise buildings.</p> <p>C2 - Students will understand the features of floors used in the construction of low-rise buildings.</p> <p>C3 - Students will understand the features of roofs used in the construction of low-rise buildings.</p> <p>D1 – Students should know the types of work the construction industry undertake.</p> <p>D2 – Students will understand how the construction industry builds efficient transports systems and protects communities against flooding.</p>

			<p>Students will understand how prefabrication can be used to construct buildings is now a sustainable method used to build quickly and reduce damage to the environment.</p> <p>Students will understand how modern methods of construction that rely heavily on offsite prefabrication, which benefits the environment sustainably.</p> <p>Students will understand how floors, walls and roofing are designed and built and maintained to support a building or structure.</p> <p>Students will understand how we should work in a sustainable manner preserving resources for future generations.</p> <p>Students will use mathematical formulae to calculate stresses and strains of materials and components.</p> <p>Students will use mathematical formula in order to determine material quantities.</p> <p>Students will use mathematical formula in order to determine area and space.</p>	<p>Students will understand that buildings are designed and constructed to fulfil certain performance requirements in order to ensure buildings a strong and stable.</p> <p>Students will understand the methods that are used in constructing several different types of foundation and the safety aspects of supporting excavations while employees work within them.</p> <p>Students will understand the importance of insulating a building for sound, weather and heat.</p> <p>Students will identify the different methods of preconstruction work in terms of site and office-based activities.</p> <p>Students will need to understand the ways buildings and people are protected against fire.</p>
<p>What pupils should already know (prior learning components)</p>	<p>Students will have produced a mock final PSA prior to work on their final PSA during the autumn term.</p> <p>Students will understand how to produce a working drawing to meet the design brief; ensuring students can evaluative techniques to identify the most successful design idea. <i>(Built upon the basics from KS3)</i></p> <p>Students will be able to evaluate against the specification and identify ways of improving them so that an evaluation and modification can be written. <i>(Built upon the basics from HT2 Yr8 & HT1+ HT2 Y9).</i></p> <p>Students will understand how to draw using isometric 1-point and 2-point design styles. <i>(Building upon skills & knowledge from Y9 HT2).</i></p> <p>About the importance of design and how it can influence consumer choice. <i>(Building upon subject knowledge and practical skills from Year 9 HT1)</i></p>	<p>Students will have an understanding of graphical techniques with a good level of accuracy for initial work in Y10 HT6</p> <p>Students have a good understanding of the design requirements.</p>	<p>Students should have a good grasp of materials and be able to identify where they could be used on a building. Students should understand the benefits of working to reduce waste. <i>(Building upon subject knowledge from Year 8 & 9 HT2, Year 10 HT4 + Year 11 HT2).</i></p> <p>Students can now produce high quality technical drawings. CAD packages are used to increase the effectiveness of the process and ensure that our designs are as accurate as possible. Understanding the advantages of CAD will help students make informed decisions when developing new ideas for future projects and improve their IT skills. <i>(Building upon subject knowledge from Year 9 HT2+ HT3 & Year 10 component 1 HT3+HT4).</i></p> <p>Links to KS3 mathematics curriculum:</p> <ul style="list-style-type: none"> - Algebra - Volume / area calculations - Trigonometry 	<p>Students should have suitable design communication skills to draw cross sectional working drawings with relevant annotations.</p> <p>Students apply further understanding of how to correctly annotate working drawings, sketches concept ideas. <i>(Building upon skills & knowledge from Y9 HT2 & Y10 HT5+HT6).</i></p> <p>Students should know how to use general workshop tools safely and accurately so that they can produce high quality models. <i>(Building upon subject knowledge and practical skills from KS3 and Y10 HT1+HT2).</i></p> <p>Students will be able to suggest some suitable materials that could be used to build the parts of a structurally sound building. Students will have an understanding the working properties of materials will help students make informed decisions when selecting materials for future projects. Students can identify essential hand tools and can safely operate larger equipment. <i>(Building upon subject knowledge and practical skills from KS3 projects & Year 10 HT1+ HT2).</i></p> <p>Students should have suitable design communication skills to draw cross sectional working drawings with relevant annotations.</p> <p>Students apply further understanding of how to correctly annotate working drawings, sketches concept ideas. <i>(Building upon skills & knowledge from Y9 HT2 & Y10 HT5+HT6).</i></p> <p>Students should know how to use general workshop tools safely and accurately so that they can produce high quality</p>

				<p>models. <i>(Building upon subject knowledge and practical skills from KS3 and Y10 HT1+HT2).</i></p> <p>Students will be able to suggest some suitable materials that could be used to build the parts of a structurally sound building. Students will have an understanding the working properties of materials will help students make informed decisions when selecting materials for future projects. Students can identify essential hand tools and can safely operate larger equipment. <i>(Building upon subject knowledge and practical skills from KS3 projects & Year 10 HT1+ HT2).</i></p>
Transferrable knowledge (skills)	<p>How to estimate the costs of materials.</p> <p>How to measure and mark out: interpretation of construction drawings.</p> <p>How to generate, annotate and communicate design ideas.</p> <p>How to use CAD packages in order to produce high quality working drawings.</p>	<p>How to estimate the costs of materials.</p> <p>How to measure and mark out: interpretation of construction drawings.</p> <p>How to generate, annotate and communicate design ideas.</p> <p>How to use CAD packages in order to produce high quality working drawings.</p>	<p>Understanding the working properties of materials will help students make informed decisions when selecting materials for future projects.</p> <p>How to generate, annotate and communicate design ideas. How to use CAD packages in order to produce high quality working drawings.</p> <p>Understanding the working properties of materials will help students make informed decisions when selecting materials for future projects.</p> <p>How to generate, annotate and communicate design ideas. How to use CAD packages in order to produce high quality working drawings.</p>	<p>Understanding the working properties of materials will help students make informed decisions when selecting materials for future projects. <i>(Building upon subject knowledge and practical skills in Y11).</i></p> <p>How to generate, annotate and communicate design ideas. How to use CAD packages in order to produce high quality working drawings. <i>(Building upon subject knowledge and practical skills in Y11).</i></p>
Key vocabulary pupil will know and learn	<p>Accurate, analyse, appropriate, design brief, communicate, compare, comparison, competent, consideration, creative, demonstrate, detailed, extensive, generic, perceptive, range, secure, simplistic, suitable & unsupported.</p>	<p>Developed, sketches, layout plans, orientation, isometric, orthographic, dimensioning, perspective, client, plan orientation, side orientation, front orientation.</p>	<p>Civil engineering, sea defences, flood defences, river and harbour works, tidal defences, river defences, renewable energies, residential construction, social housing, sheltered housing, commercial construction, shops, supermarkets, health care construction, clinics, health centres, education construction, colleges, schools, universities, leisure, recreation construction, stadia, sports facilities, refurbishment, facilities and estates management.</p> <p>Performance requirements: Strength and stability, testing of materials such as a slump test, and a compressive test. Roof ties transfer of loads, types of foundations such as a raft, strip and pile foundation, cavity fire barriers, fire dampers, smoke detection, refuge areas, intumescent paint, mineral wool, reinforcement, double glazing, triple glazing, cellulose, hemp, fibreglass, sheep wool, screed, hardcore, insulation foam, damp proof course, sealants, flashings, soffits, fascia boards and plasterboard layers.</p>	<p>Performance requirements: Strength and stability, function of a foundation, demolition, green field and brownfield sites, legal requirements such as a risk assessment contacting the HSE, method statements, cavity wall construction, brickwork, blockwork, civil engineering, sea defences, flood defences, river and harbour works, tidal defences, river defences, renewable energies, residential construction, social housing, sheltered housing, commercial construction, shops, supermarkets, health care construction, clinics, health centres, education construction, colleges, schools, universities, leisure, recreation construction, stadia, sports facilities, refurbishment, facilities and estates management.</p>
Assessment activities	<p>Final Assessment for component 3 handed in Dec Teacher to hand back work for resits.</p>	<p>6 hours to complete the project in examination conditions in line with Pearson.</p>	<p>1hr 30mins examination Unit 1 external assessment externally marked.</p> <p>1hr 30mins mock examination questions taken from past unit 1 papers from first award course.</p> <p>Exemplar materials from Pearson website.</p>	<p>1hr 30mins resit examination</p> <p>Resit examination Unit 1 external assessment externally marked.</p>

Resources available	Drawing boards, A3 paper, technical drawing equipment, google sketch-up, Techsoft-2D design.	Drawing boards, A3 paper, technical drawing equipment.	PowerPoint shared area/Technology/Year11/Unit 1 PowerPoints. Resources required for building scale models of roofs, walls and floors. Past papers Unit 1 Construction Resources for model making Raft, Strip foundations. PowerPoint shared area/Technology/Year11/Unit 1 PowerPoints.	PowerPoint shared area/Technology/Year11/Unit 3 PowerPoints.
Notes Why this topic is important...	This unit is externally assessed. Teacher to record marks and send off to Pearson.	This unit is externally assessed using a paper-based exam. The exam is set and marked by Pearson. The exam lasts for 1 hour 30 minutes and contains 60 marks. All registered students who sit the first exam have an option to re-sit again in the summer term.	This unit is externally assessed using a paper-based exam. The exam is set and marked by Pearson. The exam lasts for 1 hour 30 minutes and contains 60 marks. All registered students who sit the first exam have an option to re-sit again in the summer term.	All registered students who sit the first exam have an option to re-sit again in the summer term.