Share Multi Academy Trust

Curriculum Planning Template

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 – Synoptic Assessment	Component 3 – Synoptic Assessment	Component 1 – External examination	Revision for any necessary re-sit of Component 1
Topic overview **Pupils will learn…**	How buildings are designed and constructed. How buildings serve different purposes and perform in different ways. How sub-structures are constructed to perform under different conditions.	How to identify and design superstructures are constructed. How sustainability is a key feature of modern building design. How to develop an understanding of mathematics used in construction projects.	How the functions and features of different floors, walls and roofs are used in the construction of superstructures in low rise buildings. How diverse the construction industry through an understanding of the different technology used in low rise construction projects.	How to make connections between past construction papers to ensure appropriate revision strategies.
Components	Students will understand that buildings are designed and constructed to fulfil certain performance requirements in order to ensure buildings a strong and stable. 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. Students will understand the importance of insulating a building for sound, weather and heat. Students will identify the different methods of preconstruction work in terms of site and office-based activities. Students will need to understand the ways buildings and people are protected against fire.	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. Students will understand how modern methods of construction that rely heavily on offsite prefabrication, which benefits the environment sustainably. Students will understand how floors, walls and roofing are designed and built and maintained to support a building or structure. Students will understand how we should work in a sustainable manner preserving resources for future generations. Students will use mathematical formulae to calculate stresses and strains of materials and components. Students will use mathematical formula in order to determine material quantities. Students will use mathematical formula in order to determine area and space.	Students will be able to sketch and annotate the different types of details and features of floors, walls and roofs. Students will understand the different methods of building floors, roofs and walls. Students will understand the benefits and drawbacks of a range of construction methods relating to floors, walls and roofing. Students will outline the range of work the construction industry undertakes. Students will understand the types of work the construction industry undertakes. Students will describe the ranges of activities undertaken by the construction industry. Students will evaluate the local and national contributions made by the construction industry to society	Students will be given a bespoke revision plan based on their performance within their latest mock and actual exam scores. A1 - Students will need to know different performance requirements that are necessary to design buildings. A2- Students must know the purpose of sustainable construction. A3 – Students will need to understand the ways structural forms in low-rise construction are used along with their features. B1 - Students to be able to identify desk-based preconstruction activities. B2 – Students will understand how ground works are constructed. C1 – Students will understand the features of walls used in the construction of low-rise buildings. C2 - Students will understand the features of floors used in the construction of low-rise buildings. C3 - Students will understand the features of roofs used in the construction of low-rise buildings. D1 – Students should know the types of work the construction industry undertake. D2 – Students will understand how the construction industry builds efficient transports systems and protects communities against flooding.

Golden Knowledge	Students can interpret a live brief and identify and research the needs and wants of the client. Understanding of how to manage a budget successfully. Students will understand how to successfully apply a range of drawing techniques including: Site plans, elevations, 1- point perspective and 2-point perspective.	Students understand how to use CAD packages and how these are implemented in the world of construction. Understand how foundations are made and where they are used. Identify why damp-proof courses are used in a building/structure.	Be able to make connections between different construction technologies to ensure appropriateness of low-rise construction projects in different scenarios Demonstrate understanding of work of the construction industry and the different technology used in low-rise construction projects Demonstrate knowledge of work of the construction industry and the different technology used in low-rise construction projects	Be able to make connections between different construction technologies to ensure appropriateness of low-rise construction projects in different scenarios Demonstrate understanding of work of the construction industry and the different technology used in low-rise construction projects Demonstrate knowledge of work of the construction industry and the different technology used in low-rise construction projects
What pupils should already know (prior learning components)	Students should have suitable design communication skills to draw cross sectional working drawings with relevant annotations. Students apply further understanding of how to correctly annotate working drawings, sketches concept ideas. *(Building upon skills & knowledge from Y9 HT2 & Y10 HT5+HT6).* Students should know how to use general workshop tools safely and accurately so that they can produce high quality models. (*Building upon subject knowledge and practical skills from KS3 and Y10 HT1+HT2*). 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. (*Building upon subject knowledge and practical skills from KS3 projects & Year 10 HT1+ HT2).*	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. (*Building upon subject knowledge from Year 8 & 9 HT2& Year 10 HT4)* 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. (*Building upon subject knowledge from Year 9 HT2+ HT3 & Year 10 component 1 HT3+HT4).* Links to KS3 mathematics curriculum: - Algebra - Volume / area calculations - Trigonometry	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. (*Building upon subject knowledge from Year 8 & 9 HT2, Year 10 HT4 + Year 11 HT2).* 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. (*Building upon subject knowledge from Year 9 HT2+ HT3 & Year 10 component 1 HT3+HT4).*	Students should have suitable design communication skills to draw cross sectional working drawings with relevant annotations. Students apply further understanding of how to correctly annotate working drawings, sketches concept ideas. *(Building upon skills & knowledge from Y9 HT2 & Y10 HT5+HT6).* Students should know how to use general workshop tools safely and accurately so that they can produce high quality models. (*Building upon subject knowledge and practical skills from KS3 and Y10 HT1+HT2*). 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. (*Building upon subject knowledge and practical skills from KS3 projects & Year 10 HT1+ HT2).*
Transferrable knowledge (skills)	Understanding the working properties of materials will help students make informed decisions when selecting materials for future projects. How to generate, annotate and communicate design ideas. How to use CAD packages in order to produce high quality working drawings.	To ensure students understand the importance of sustainability so they can make informed choices. Students will recognise the importance of alternative energy sources such as renewables. (*Building upon subject knowledge and practical skills from Year 8 HT2, Year 9 HT2 & Year 10 HT4).* To understand the importance of mathematics in the world of construction and how mathematics can be used practically.	Understanding the working properties of materials will help students make informed decisions when selecting materials for future projects. How to generate, annotate and communicate design ideas. How to use CAD packages in order to produce high quality working drawings.	Understanding the working properties of materials will help students make informed decisions when selecting materials for future projects. (*Building upon subject knowledge and practical skills in Y11).* How to generate, annotate and communicate design ideas. How to use CAD packages in order to produce high quality working drawings. (*Building upon subject knowledge and practical skills in Y11).*
Key vocabulary pupil will know and learn	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	The effect of forces, changes in temperature, Algebra and graphical methods, substituting values, mensuration, trigonometry. preconstruction, substructures, 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, brownfield / greenfield sites, reclaimed and reused materials, low embodied energy materials, use of local suppliers,	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.	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,

	course, sealants, flashings, soffits, fascia boards and plasterboard layers.	prefabrication of components, cleaning on site, silt traps along with advantages & disadvantages.		recreation construction, stadia, sports facilities, refurbishment, facilities and estates management.
Assessment activities	1hr 30mins mock examination questions taken from past unit 1 papers from first award course. Exemplar materials from Pearson website.	1hr 30mins mock examination questions taken from past unit 1 papers from first award course. Exemplar materials from Pearson website.	1hr 30mins examination Unit 1 external assessment externally marked.	1hr 30mins resit examination Resit examination Unit 1 external assessment externally marked.
Resources available	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 1 PowerPoints.	PowerPoint shared area/Technology/Year11/Unit 1 PowerPoints. Resources required for building scale models of roofs, walls and floors.	PowerPoint shared area/Technology/Year11/Unit 3 PowerPoints.
Notes **Why this topic is important…**	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 resit 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.	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.