

**Year 10 Unit 1: Construction Technology  
Creative Industries Faculty**

<b>Rationale and Context of Unit:</b>	<b>Core curriculum content:</b>	<b>Tier 2 &amp; Tier 3 vocabulary explicitly taught:</b>		
<p>Different parts of buildings serve different purposes and so they need to perform in different ways. A roof, floor and a wall all need to be strong and stable, but they have different jobs and so they must be designed to resist different forces.</p> <p>In modern construction, sustainability is also a key feature of design. This ensures new developments do not have a negative effect on the environment.</p> <p>Whether you are a plumber, an architect, a ground worker or a site manager, it is vital to understand the processes in the construction of buildings. Unit 1: Construction Technology is the foundation of students understanding of the built environment.</p>	<p>Unit 1: Construction Technology will provide learners with an understanding of how buildings need to perform and how they can be constructed to meet necessary performance criteria and specifications. Unit 1: Construction Technology starts out by considering the performance requirements for low-rise buildings in terms of strength, stability, fire resistance, thermal resistance, sound reduction/absorption, weather resistance and sustainability. It then goes on to investigate the typical forms of low-rise construction and how these are constructed through substructure works through to completion of the superstructure. The unit concludes by considering the type of work undertaken by the construction sector including buildings and infrastructure work.</p> <p>Unit1: Construction Technology is focused on knowledge and understanding rather than skills development this is best approached via a broad range of focused topics with relatively short inputs and learner activities to maintain learner interest and commitment.</p>	<b>Performance Requirements</b>		
		Performance Stable Sustainability Ratio Coniferous Deciduous Hardcore Aggregate Wall Tie Intumescent paint Thermal Insulation	Thermal Resistance Screed Double Glazing Adjacent Noise Useful Life Impervious Soffits	Fossil Fuels Brownfield Greenfield Orientation Prefabricated Embodied Energy Render Cladding
		<b>Structural Form</b>	<b>Pre-Construction</b>	<b>Substructure</b>
<p><b>Challenge and Support:</b></p> <p>Students have not received any direct construction knowledge at KS3 although there is some cross-curricular links with Science, Design Technology and Maths.</p> <p>Students will progress further by linking classroom learning to life outside of Acle Academy.</p> <p>SEND support will be given in line with individual needs and SEND passports.</p> <p>Writing frames; success criteria and WAGOLLs (What A Good One Looks Like).</p>	<p><b>Worldwide learning / links to 21<sup>st</sup> century:</b></p> <p>Construction generates around £90 billion annually (almost 7% of GDP) and employs more than 2.9 million people, the equivalent of around 10% of the UK workforce. Yet despite these credentials as a powerhouse of the economy, skills shortages remain a persistent issue. The sector lost 140,000 jobs after the economic crash of 2008, and the situation is exacerbated by an ageing workforce hanging up their tools – almost a quarter of construction workers are over 50 and 15% are over 60.</p>	<p><b>Cultural capital/ Industry/ Enrichment:</b></p> <p>The Wensum Trust have teamed up with Lovell to help tackle the skills and jobs shortage in the construction industry and educate young people about the range of career opportunities in the sector.</p> <p>Lovell invited and included Morgan Sindall Construction as part of the partnership, helping to provide further opportunities for young people across the region.</p> <p>The relationship between the housing experts and the not-for-profit multi-academy education Trust will include the sponsorship of two students from Acle Academy commencing in September 2021, which will lead onto</p>		

<p>VIP strategy for disadvantaged students</p>	<p>In June 2022, the Construction Skills Network forecast that the industry will need to recruit 216,800 new workers by 2025 to meet demand. While it is good news that jobs are being created, the sector has struggled for many years to attract young people as an engaging, dynamic and modern career choice. <a href="#">Skill shortage</a></p>	<p>apprenticeships the following year. A longer term commitment will provide students at all the Trust’s High Schools with opportunities onsite, and the Trust embedding construction into the curriculum for 11 to 16-year-olds.</p>	
<p><b>Historical, Social, Moral, Spiritual, Cultural context:</b></p>	<p><b>Cross curricular links/ literacy/numeracy:</b></p>	<p><b>Common misconceptions:</b></p>	
<p>The oldest bricks in the world used to construct houses are over six thousand years old. Humanity used mud mixes with water which dried in the sun to construct buildings for thousands of years. Our climate is changing and this change is causing problems such as floods and non-renewable resources running out. People in the construction industry have to try to limit and overcome these negative effects of climate change. This can partly be done by building in a sustainable way.</p>	<p><b>Gatsby Benchmark:</b> <a href="https://www.bbc.co.uk/bitesize/articles/zbn4hbk">https://www.bbc.co.uk/bitesize/articles/zbn4hbk</a> <a href="https://www.bbc.co.uk/bitesize/articles/zvcf8xs">https://www.bbc.co.uk/bitesize/articles/zvcf8xs</a> <a href="https://www.bbc.co.uk/bitesize/articles/zf4bmfr">https://www.bbc.co.uk/bitesize/articles/zf4bmfr</a> <b>Maths:</b> Students will need to apply maths knowledge in a construction context; Area Dimension Ratio Trigonometry Volume Quantities</p>	<p>There is a perception that anyone can get a job in construction, that it is a last resort for those who are unemployable elsewhere. And while entry-level jobs are certainly available to those prepared to put in the work, that’s not to say it’s a walk in the park. Working in construction is full of challenges both physical and mental. Depending on the job role, it might involve planning a project, operating complicated machinery, solving unexpected problems or ensuring compliance with health and safety laws. Construction is still a male-dominated industry. But times are changing fast, and today more women than ever before are choosing careers in the field. More work still needs to be done in order to create a gender-equal environment – but the more female role models there are working in the industry, the more they are slowly changing the perception of construction as a male-only field.</p>	
<p><b>Assessment timeline:</b></p>			
<p>Each unit will contain a range of assessment methods ranging from lesson outcomes, Q&amp;A sessions, interactive quizzing and more formal written assessments. Each unit will contain both formative and summative assessments. Unit 1: Construction Technology will align with whole school MOCK exams typically at the end of year 10 and twice in Year 11.</p>			
<p><b>Assessment Unit 1: Performance Requirements</b> Literacy Assessment Knowledge recall Oral Assessment <b>30 marks</b></p>	<p><b>Assessment Unit 2: Structural Forms</b> Literacy Assessment Knowledge recall Oral Assessment <b>30 marks</b></p>	<p><b>Assessment Unit 3: Sub-Structure Groundworks</b> Literacy Assessment Knowledge recall Oral Assessment <b>30 marks</b></p>	<p><b>Assessment Unit 4: Science &amp; Math Applications</b> Literacy Assessment Knowledge recall <b>30 marks</b></p>

## Home learning

Students will receive a range of activities;

- Worksheets
- Investigations
- Photography
- Sketching

## Feedback

Creative Industries uses subject specific front sheet to inform students of their learning progress. Feedback for the four distinct Units, Unit 1: Performance Requirements, Unit 2: Structural Forms, Unit 3: Sub-Structure Groundworks and Unit 4: Science & Math Applications will be scored as a percentage based upon the knowledge retained. Assessment Unit 1-3 will have Oral Assessment based on the three core categories the Creative Industries Faculty uses;

- Listens & Responds
- Presentations
- Vocabulary