

Year 9 Curriculum Map: Architecture brief

Year 9 Designers will take part in two DT lessons per fortnight, for three half terms of the year.

What are we learning about? What skills & attitudes are we developing? What are we making?	Key vocabulary we will be using in written work and when talking about our work.	Links to national curriculum
<p>WHAT ARE WE LEARNING? Students will be making links between careers in architecture and engineering and the skills acquired in their Y9 project. Students will be working on a brief using biomimicry, Computer aided design and manufacture, scientific and mathematical principles, applying problem-solving and creativity in an architectural engineering context.</p> <p>PROJECT BRIEF: You are an architectural engineer. Holy Family Catholic High School has appointed your firm to design and build a multipurpose pavilion. The pavilion must be able to facilitate lessons, celebration assemblies, and become a multi-use hub for the community. Holy family would like the pavilion to be built with sustainable materials. You must utilize biomimicry in your design stage and industry standard methods of manufacture within your architectural model, aswell as using CAD CAM. You will produce an architectural model and a short presentation explaining your proposal.</p>	<p>Biomimicry</p> <p>Brief, analysis, design ideas</p> <p>Computer aided design, computer aided manufacture</p> <p>Sustainability, structure</p> <p>Architecture, Engineering</p> <p>Frame, shell</p> <p>Compression, tension, bending, torsion, shear</p> <p>The golden ration, Fibonacci squares</p>	<p>DESIGN</p> <p>(D1) Use research and exploration, such as the study of different cultures, to identify and understand user needs. (D2) Identify and solve their own design problems and understand how to reformulate problems given to them. (D3) Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations. (D4) Use a variety of approaches to generate creative ideas and avoid stereotypical responses. (D5) Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.</p> <p>MAKE</p> <p>(M1) Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture. (M2) Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties.</p> <p>EVALUATE</p> <p>(E1) Analyse the work of past and present professionals and others to develop and broaden their understanding. (E2) Investigate new and emerging technologies. (E3) Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups. (E4) Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.</p>

WHAT SKILLS AND ATTITUDES ARE WE DEVELOPING?

Designers will use biomimicry, fine motor skills, CAD skills, critical thinking, problem solving and oracy at various stages throughout the project.

TECHNICAL KNOWLEDGE

(TK1) Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.