

| Module/Unit of Learning              | Taught During | What will students learn?   | How does this help to build a broad and strong foundation?  | Links to other Subjects  |
|--------------------------------------|---------------|---|---|--|
| Designing to solve everyday problems | Autumn 1      | <p>Students learn how innovation can help designers fix/solve everyday solutions.</p> <p>Students learn how prototyping before making influences the design of a product.</p> <p>Students learn the properties of acrylic and how these impact its use in everyday items.</p> | Students begin gain knowledge about the iterative design process needed for key stage 4.  | Chemistry (monomers/polymers).<br>Maths (measuring and angles) |
| A Step in Time                       | Autumn Term 2 | <p>Students will learn how to design within a design brief/specification.</p> <p>Students will learn how to use specialist tools and techniques to create a quality product.</p> <p>Students will learn how to evaluate their work against the design specification.</p>      | <p>Students gain knowledge about design specifications and how these inform their design outcomes.</p> <p>Students are encouraged to be creative and avoid stereotypical designs.</p> | History (art/design movements).                                |

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|----------------------|-------------|--|---|---|
| Awesome Architecture | Spring Term | In the Awesome Architecture project, students will review design briefs, and then consider ideal shapes for building constructions, looking at the benefits of a triangular shape. They will then apply this knowledge to further learn how buildings can be designed to be proofed against severe weather such as earthquakes and tropical storms. As part of their design process, students will learn how to produce one-point and two-point perspective, and understand why architects use two-point perspective drawings in their design process. In construction, students will learn about the properties of different materials as they produce their own models of weather-proof buildings. | Students gain skills to be able to communicate their design ideas using annotated sketches.<br><br>Students begin to see the use of Design Technology in the world around them, and develop an awareness of how it permeates every aspect of our lives. Having this understanding as a strong foundation will really help students to then develop their understanding of design capabilities in future projects. | Geography (Meteorology)<br>Maths (shapes)<br>CLASS (empathy)                    |
| 3-2-1 Blast Off!     | Summer Term | Students will learn how iterative design helps us to produce successful design outcomes.<br><br>Students will learn what part prototyping plays in the design process. Students will learn how to evaluate their prototype and how to make improvements during each iteration of their design.   | Iterative Design – small but incremental steps to improve something.  | Physics (forces of flight)<br>CLASS (team skills – negotiation, communication). |