

HIGHFIELDS SCHOOL

CURRICULUM OVERVIEW 2023-2024



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SUBJECT: DESIGN & TECHNOLOGY

KEY STAGE: 3

AUTUMN TERM - YEAR 7	SPRING TERM - YEAR 7	SUMMER TERM - YEAR 7
<p>Air Car In this project, students develop skills in designing and model making in Design & Technology. Using tools and machinery with health and safety at the forefront of their learning.</p> <p>Additionally, the project introduces students to the cross curricular nature of Design & Technology, looking at forces acting upon the vehicle, looking at measuring and unit conversion in the construction of their vehicle.</p> <p>Finally, this project introduces students to basic technical knowledge and understanding of different materials classifications and example materials/products within them.</p>	<p>Over Plug Phone Holder In this project, students are introduced to a design brief, where they develop design solutions, test models, and iteratively repeat the cycle to produce a successful design outcome.</p> <p>Additionally, the project introduces students to CAD & CAM where they develop skills in the use of 2D Design software, the use of the laser cutter and hot wire strip heater in manufacturing.</p> <p>Finally, this project further develops the student's technical knowledge and understanding of polymers, key characteristics of them and example materials/products made using polymers.</p>	<p>Passive Amplifier In this project, students focus on the development of their practical skills to realise a functional working product. Students further develop their understanding of the relevant health and safety within a workshop environment while using a wide range of tools and equipment accurately.</p> <p>Additionally, students develop their application of mathematical knowledge and accuracy with the introduction of tolerance.</p> <p>Finally, this project further develops the student's technical knowledge and understanding of timbers, key characteristics of them and example materials/products made using timbers.</p>
<p>ASSESSMENT Students are assessed throughout the project, with their current working grades being a 50/50 split that is representative of how students would be assessed at GCSE (assessing the student's skills at designing and making alongside their technical knowledge).</p> <p>This shall be done in a variety of ways such as a baseline assessment to gauge their entry knowledge of the subject at the beginning of KS3, peer, and self-assessments that enable students to identify what they have done well (medal) and what could be developed/improved (mission). Formal grading of their manufactured Air Car, to assess the student's manufacturing skills.</p>	<p>ASSESSMENT Students are assessed throughout the project, with their current working grades being a 50/50 split that is representative of how students would be assessed at GCSE (assessing the student's skills at designing and making alongside their technical knowledge).</p> <p>This shall be done in a variety of ways such as a forms quiz to gauge their technical knowledge, peer, and self-assessments that enable students to identify what they have done well (medal) and what could be developed/improved (mission). Formal grading of their manufactured Over Plug Phone Holder, to assess the student's manufacturing skills.</p>	<p>ASSESSMENT Students are assessed throughout the project, with their current working grades being a 50/50 split that is representative of how students would be assessed at GCSE (assessing the student's skills at designing and making alongside their technical knowledge).</p> <p>This shall be done in a variety of ways such as a forms quiz to gauge their technical knowledge, peer, and self-assessments that enable students to identify what they have done well (medal) and what could be developed/improved (mission). Formal grading of their manufactured Passive Amplifier, to assess the student's manufacturing skills.</p> <p>An end of D&T grade is produced encompassing how students have performed throughout the year.</p>

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AUTUMN TERM - YEAR 8	SPRING TERM - YEAR 8	SUMMER TERM - YEAR 8
<p>Arkitainer In this project, students will look at the use of shipping containers within architecture, including differing architectural designs.</p> <p>Additionally, students learn to draw accurately in 3D including the introduction of mathematical skills and understanding of scale. The key focus will be the development of modelling skills both digitally using OnShape and physically, during the making of a scale foam board model.</p> <p>Finally, this project further develops the student's technical knowledge and understanding of Papers and Boards, key characteristics of them and example materials/products made using papers and boards.</p>	<p>Desk Tidy In this project, students will further develop confidence in the workshop. This is a vital component to a student's success, so this builds on previous learning and allows students to create a functional product using a range of materials.</p> <p>Additionally, students learn how to read and understand technical drawings when manufacturing a product. Students are introduced to quality control and how accuracy can be assured during manufacture.</p> <p>Finally, this project further develops the student's technical knowledge and understanding of a variety of materials, tools, equipment, and introduction of various wood joints.</p>	<p>Fantastic Plastic In this project, students are introduced to sustainability, the 6 R's and plastic waste impact on the environment. To aid awareness of the issue, this project focusses predominantly on the use of waste acrylic material within school to develop jewellery items.</p> <p>Additionally, students further develop the use of CAD & CAM. This shall be via continued use of 2D Design software, 3D modelling in OnShape, and use of 3D printing.</p> <p>Finally, this project further develops the student's prior technical knowledge and understanding of polymers, tools, equipment, and manufacturing processes in school.</p>
<p>ASSESSMENT Students are assessed throughout the project, with their current working grades being a 50/50 split that is representative of how students would be assessed at GCSE (assessing the student's skills at designing and making, alongside their technical knowledge).</p> <p>This shall be done in a variety of ways such as a forms quiz to gauge their technical knowledge, peer, and self-assessments that enable students to identify what they have done well (medal) and what could be developed/improved (mission). Formal grading of their manufactured Arkitainer, to assess the student's manufacturing skills.</p>	<p>ASSESSMENT Students are assessed throughout the project, with their current working grades being a 50/50 split that is representative of how students would be assessed at GCSE (assessing the student's skills at designing and making, alongside their technical knowledge).</p> <p>This shall be done in a variety of ways such as a forms quiz to gauge their technical knowledge, peer, and self-assessments that enable students to identify what they have done well (medal) and what could be developed/improved (mission). Formal grading of their manufactured Desk Tidy, to assess the student's manufacturing skills.</p>	<p>ASSESSMENT Students are assessed throughout the project, with their current working grades being a 50/50 split that is representative of how students would be assessed at GCSE (assessing the student's skills at designing and making, alongside their technical knowledge).</p> <p>This shall be done in a variety of ways such as peer, and self-assessments that enable students to identify what they have done well (medal) and what could be developed/improved (mission). Formal grading of their manufactured jewellery product, to assess the student's manufacturing skills.</p> <p>Finally, a progress assessment to gauge their development within D&T from the beginning to the end of KS3.</p>

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AUTUMN TERM - YEAR 9	SPRING TERM - YEAR 9	SUMMER TERM - YEAR 9
<p>Tablet Stand Students focus on 3 key elements of design and technology. These are:</p> <ul style="list-style-type: none"> • Card modelling to aid prototyping and testing • CAD 3D modelling to enable students to communicate their designs digitally • Manufacturing a working product to practice and showcase manufacturing skills <p>Students further develop how to read and understand more complex technical drawings when manufacturing a product, ensuring accuracy and quality during manufacture of a high quality, functioning product.</p> <p>Technical knowledge and understanding of Material Properties are introduced.</p> <p>Design Ventura Students work collaboratively as a team to develop a solution for an externally set design brief and specification by The Design Museum in London.</p> <p>Students are introduced how to analyse existing products while being able to apply prior learning and manufacturing skills from KS3.</p> <p>Students shall present their solutions as a team to fellow peers.</p>	<p>Desktop Planter Students further focus on 3 key elements of design and technology. These are:</p> <ul style="list-style-type: none"> • Card modelling to aid prototyping and testing • CAD 3D modelling to enable students to communicate their designs digitally • Manufacturing a working product to practice and showcase practical making skills <p>Develop how to read and understand more complex technical drawings when manufacturing a product.</p> <p>Technical knowledge and understanding of Material Classifications are introduced.</p> <p>Inclusive Gardening Students focus on the importance of inclusive design and designing empathetically for others. Being able to understand the wider responsibilities of a design and how products we make can have an impact on a user's experience.</p> <p>Students develop solutions to meet the needs of their design brief and specification. Finally, students further develop how to analyse products with the introduction of ACCESS FM.</p>	<p>Inspired Clock Students are introduced to a variety of different design movements and key features within them. The work of others, especially those who have developed or designed significant pieces of work are discussed.</p> <p>This is an opportunity to apply design and make skills demonstrating autonomy and personal response to an inspired-led design brief, showcasing acquired skills and knowledge developed across their 3 years in design and technology to generate a creative design proposal based on research and design development.</p> <p>Additionally, students further develop the use of CAD & CAM. This shall be via continued use of 2D Design software, use of the laser cutter, and showcasing of manufacturing skills.</p> <p>Technical knowledge and understanding of finishes are introduced, including the application and use of surface finishes for differing materials.</p>
<p>ASSESSMENT Students are assessed throughout the term more formally, with their current working grades being a 50/50 split that is representative of how students would be assessed at GCSE (assessing the student's</p>	<p>ASSESSMENT Students are assessed throughout the term more formally, with their current working grades being a 50/50 split that is representative of how students would be assessed at GCSE (assessing the student's</p>	<p>ASSESSMENT Students are assessed throughout the term more formally, with their current working grades being a 50/50 split that is representative of how students would be assessed at GCSE (assessing the student's</p>

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skills at designing and making alongside their technical knowledge).

This shall be done in a variety of ways such as a mock exam with the introduction of GCSE style questioning to gauge their technical knowledge, peer, and self-assessments that enable students to identify what they have done well (medal) and what could be developed/improved (mission). Formal grading of their development pages that assess students manufacturing skills, 3D modelling skills, and evaluative writing.

skills at designing and making alongside their technical knowledge).

This shall be done in a variety of ways such as a mock exam with GCSE style questioning to gauge their technical knowledge, peer, and self-assessments that enable students to identify what they have done well (medal) and what could be developed/improved (mission). Formal grading of their development pages that assess students manufacturing skills, 3D modelling skills, technical drawing skills, and evaluative writing.

skills at designing and making alongside their technical knowledge).

This shall be done in a variety of ways such as a mock exam with more advanced GCSE style questioning to gauge their technical knowledge, peer, and self-assessments that enable students to identify what they have done well (medal) and what could be developed/improved (mission). Formal grading of their development pages that assess students manufacturing skills, 3D modelling skills, and evaluative writing.