JSTC ALFORD **Curriculum Map**

Design & Technology Module: Graphics Year 8

	Topic / Theme	Knowledge and Skills	Assessment	Cultural Capital Independent Learning
Autumn – Term One	**Project**: Shop design – Model, 3D CAD and animation. This is the first project in the Graphics Yr8 Module. Students will develop design skills using hand drawing and 3D CAD techniques. They will use a range of different tools and materials to manufacture a 3D model building for a new business. The use effective and efficient use of different graphic materials is a requirement of this module whereby students demonstrate their understanding of material properties and joining techniques. Students will investigate user needs and develop design to address those needs / specification. The project is designed to build knowledge of marking-out, cutting and fabrication / joining techniques.	***Designing***: Investigation into good design that meet the needs of the wider community requirements. Review / self / peer assessment of initial ideas. Development to show improvements using drawings and notes. Design specification relating to the design of a new building for the purpose of business use including the exterior and interior. Design ideas are generated & presented using a range of formats including ICT with annotated sketches. D1, D2, D3, D4, D5 ***Making***: Students will use a range of graphical techniques to mark out the different sections of their model for interior and exterior elements. Use of a craft knife and cutting mat are required. ICT generated graphics will be used to aid design. Scoring, folding and joining techniques will be learned. A range of different papers, boards, plastics and vinyl will be selected appropriately. Students will also have the opportunity	**F =** Foundation **C =** Core **A =** Advanced **E =** Exceptional **Design Assessment Criteria coverage** **F** Produce some ideas to meet needs. Limited accuracy Limited use of instruments limited use of colour & labelling / annotations **C** Produce a range of different ideas to meet needs / constraints. Mostly accurate with use of instruments. 2d / 3d / ICT including 3D CAD methods used appropriately. Use of colour to represent user & appropriate labelling / annotations **A** Produce a range of suitable ideas based on research to meet different user needs / constraints. Accurate use of a range of instruments. A wide range of 2d / 3d / ICT including 3D CAD methods used with effectiveness. Use of shade, tone, texture to demonstrate aesthetics relevant to the	Students will have the opportunity to investigate a wider range of businesses, products and services that they would not normally experience or be aware of. They will be provided with opportunities to experience and gain skills in the use of equipment used in many areas of employment, including power machinery and specialist tools. Students will be able to develop knowledge in the use of computer aided design including animation. In the Yr8 Graphics module, enrichment of knowledge in a practical context is achieved using a variety of equipment and materials including Jigs and power tools. Tasks within the curriculum encourage the use of a wide array of design and practical skills and experiences, which are designed to appeal to girls in particular to address issues of

	Students will be expected to develop a product with a high degree of accuracy. **Topics / Themes addressed** *Hyperlink to topics* D1 – Designing: Research & Exploration. D2 – Designing: Identifying & solving design problems: D4 & D5 – Designing: Design approaches & communicating designs. M1 Making: Using Specialist tools, equipment, techniques, processes M2 Making: Selecting and using materials E1 – Evaluate: Analysing the work of past & present professionals.	to use laser cutting & CNC vinyl cutting. M1, M2 ***Evaluate***: Students will investigate modern innovation in building technological design. Use of specific criteria to ensure successful outcomes - evaluating and testing at key points taking into account the needs and views of users. Self / peer assessment at key points. E1, E2, E3, E4 ***Technical Knowledge***: Students will develop knowledge of material properties and sustainability issues. Building structures and modelling structures. Material selection relating to different performance requirements .Students will understand how basic light circuits could be used in their designs / products. TK1, T.K **Pt2 – 3D CAD and animation** ***Designing***: Students develop further understanding of user needs & market groups, and research findings to generate ideas in response to a brief. 2D designs (orthographic) & 3D designs (isometric) are generated & presented using a range of formats including CAD. This module will also include specific design challenges. D1, D2, D3, D4, D5	user & appropriate labelling / annotations **E** Use of research to inform & produce a wide range of relevant ideas to meet different user needs / constraints. Accurate use of a range of instruments. A wide range of 2d / 3d / ICT including 3D CAD methods used with effectiveness. Use of shade, tone, texture to demonstrate aesthetics relevant to the user & appropriate labelling / annotations **Formative assessment of Designing** Shop model designs Interior layout plan for making **Making Assessment Criteria coverage** **F** Some assistance Product partly complete. Some use of tools & equipment Some inaccuracies Minimal marking out Lack of creativity **C** Works independently Product fully completed. Sound level of skill in the use of tools & equipment & appropriate use of CAM Accurate marking out Very few inaccuracies Sound creativity. **A** Able to plan activities Works independently	gender stereotyping and encourage future pathways and employment in areas with gender disparity. Students are encouraged to understand how other cultures, the beliefs and views of others affect the way products and services are designed. They are taught to reflect on the users of products and how users' views, beliefs and social-economic status affect the way products are designed, and why. In the Yr8 Graphics module, enrichment of knowledge in a design context is achieved using a variety of methods and solutions including the study of past and present designers. Students will develop an understanding of how research and the development of technical knowledge is crucial in an increasingly technological world. Students will gain an awareness of how the designs and work of individuals influence and reflect society, different cultures and social economic groups. Within the Yr8 Graphics module, enrichment of technical knowledge is achieved through studies in areas such as

JSTC ALFORD

Curriculum Map

	E3 – Evaluate: Testing and Evaluation TK1 / M2: Selecting, understanding and using materials TK3 - Electrical & Electronic systems	***Making***: Students use a range of, Specialist techniques in 3D CAD including tool selection with use appropriately and effectively. Animation of final completed model. M1. ***Evaluate***: Self / peer assessment at key stages of the project - presentation opportunities to showcase and evaluate design development. Investigation of existing 3D CAD and animation work by other professionals and teacher created work. E1, E2, E3 , E4. ***Technical Knowledge***: Students will develop knowledge of creating different types of structures through the use of 3D CAD. 3D CAD animation - scene creation - timing - effects - composition. TK1, TK4	Product fully completed with additional features and materials. High level of skill in the use of a range of tools & equipment, including specialist equipment & effective CAD / CAM application Accurate marking out Very accurate products High level of creativity & innovation. **E** Plans activities Works independently Highly accurate product with innovative & creative features, and a range of materials used. High level of skill & variety of tools & equipment & effective CAD / CAM application Accurate marking out **Formative assessment of Making** 3D CAD model of shop and surrounding area. Interior and exterior detail. Animation presentation. **Evaluating Assessment Criteria coverage** **F** Able to suggest several ways CAD modelling and animation could be improved. **C** Able to evaluate products against a range of criteria and suggest how presentations could be improved to meet user needs.	material types and properties, with studies into effects on the environment. Technology extra-curricular clubs provide experiences beyond the home and allow students to develop specific skills and more in-depth knowledge alongside the normal Technology curriculum. Research into concepts, the environment, cultures and the work of past and present designers and their achievements, will develop the students' understanding of their own potential and the measures, skills and knowledge necessary to succeed. Design & Technology will allow students to develop some understanding of Britain's contemporary design practice and design heritage, as well as a knowledge of international design practice. We encourage wider reading and the exploration of academic theory in order to investigate concepts. Students are expected to create and develop designs and ideas independently with varying degrees of innovation and flair. They will develop problem

			A Able to evaluate products against a range of criteria & specification points and use some methods of testing a CAD work and animation and evaluate how they were used to improve a product to meet user needs. **E** Able to evaluate products against a range of criteria & specification points & devise own criteria points. Use some methods of testing a CAD model and animation and evaluate how they were used to improve a product to meet user needs. **Formative assessment of Evaluating** Product analysis Evaluation of 3D CAD shop model and animation	solving skills through independent learning in both a design and practical context, which will enrich the potential of all students by providing valuable skills and the mind-set to progress independently.

JSTC ALFORD **Curriculum Map**

Design & Technology Module: Graphics Year 8

	Topic / Theme	Knowledge and Skills	Assessment	Cultural Capital Independent Learning
Autumn – Term Two	**Project**: *Mobile Phone Holder* This is the second project in the Yr8 Engineering design module. It is intended to build on the first module by allowing students to extend and reinforce the knowledge gained in the first module. The project is a mobile phone holder, principally constructed from timber. Students will develop further their skills learnt from project (1) & construct a frame using fabrication	***Designing***: Students develop further understanding of user needs & market groups, and research findings to generate ideas in response to a brief. 2D designs (orthographic) & 3D designs (isometric) are generated & presented using a range of formats including CAD. This module will also include specific design challenges. D1, D2, D3, D4, D5 ***Making***: Students use a range of techniques, processes & equipment to mark out, shape & form Timbers (plywood) Students will use& develop their understanding from prior learning of	**F** = Foundation **C** = Core **A** = Advanced **E** = Exceptional **Design Assessment Criteria coverage** **F** Produce some ideas to meet needs. Limited accuracy Limited use of instruments limited use of colour & labelling / annotations **C** Produce a range of different ideas to meet needs / constraints. Mostly accurate with use of instruments.	Students are provided with opportunities to experience and gain skills in the use of equipment used in many areas of employment, including power machinery and specialist tools. Students will be able to develop knowledge in the use of computer aided control equipment and robotics to manufacture products, which will develop an understanding of how everyday products are manufactured in industry, and

	techniques. Students will have the opportunity to customise part of the design to reflect user needs. Students will also use specific plastics to enhance the aesthetic of the design in-line with user needs. The project will allow students to learn and develop key skills in fabrication, including the use of CAD / CAM. **Topics / Themes addressed** *Hyperlink to topics* **Topics / Themes addressed** *Hyperlink to topics* D1 – Designing: Research & Exploration. D2 – Designing: Identifying & solving design problems:	common fabrication techniques associated with timbers & select & use more complex materials to add features to their designs. M1, M2 ***Evaluate***: Students will analyse their own and others' work with a view to improving their products, and considering markets. E1, E2, E3 ***Technical Knowledge***: Students will develop knowledge of material properties and sustainability issues & how products could be improved through the use of electronic features. TK1, TK4	2d / 3d / ICT methods used appropriately. Use of colour to represent user & appropriate labelling / annotations **A** Produce a range of suitable ideas based on research to meet different user needs / constraints. Accurate use of a range of instruments. A wide range of 2d / 3d / ICT methods used with effectiveness. Use of shade, tone, texture to demonstrate aesthetics relevant to the user & appropriate labelling / annotations **E** Use of research to inform & produce a wide range of relevant ideas to meet different user needs / constraints. Accurate use of a range of instruments. A wide range of 2d / 3d / ICT methods used with effectiveness. Use of shade, tone, texture to demonstrate aesthetics relevant to the user & appropriate labelling / annotations **Formative assessment of Designing** Chair Design (3d) – high tech. Frame Design Hairdryer **Making Assessment Criteria coverage** **F** Some assistance	the types of pathway and employment that exist within these sectors. In the Yr8 Engineering module, enrichment of knowledge in a practical context is achieved using a variety of equipment and materials including Jigs and power tools. Tasks within the curriculum encourage the use of a wide array of practical skills and experiences, which are designed to appeal to girls in particular to address issues of gender stereotyping and encourage future pathways and employment in areas with gender disparity. Students are encouraged to understand how other cultures, the beliefs and views of others affect the way products and services are designed. They are taught to reflect on the users of products and how users' views, beliefs and social-economic status affect the way products are designed, and why. In the Yr8 Engineering module, enrichment of knowledge in a design context is achieved using a variety of methods and

JSTC ALFORD

Curriculum Map

	D4 & D5 – Designing: Design approaches & communicating designs. M1 Making: Using Specialist tools, equipment, techniques, processes M2 Making: Selecting and using materials E1 – Evaluate: Analysing the work of past & present professionals. E3 – Evaluate: Testing and Evaluation TK1 / M2: Selecting, understanding and using materials TK3 - Electrical & Electronic systems		Product partly complete. Some use of tools & equipment Some inaccuracies Minimal marking out Lack of creativity **C** Works independently Product fully completed. Sound level of skill in the use of tools & equipment & appropriate use of CAM Accurate marking out Very few inaccuracies Sound creativity. **A** Able to plan activities Works independently Product fully completed with additional features and materials. High level of skill in the use of a range of tools & equipment, including specialist equipment & effective CAD / CAM application Accurate marking out Very accurate products High level of creativity & innovation. **E** Plans activities Works independently Highly accurate product with innovative & creative features, and a range of materials used. High level of skill & variety of tools & equipment & effective CAD / CAM application Accurate marking out **Formative assessment of Making** Main Image frame Plan of making / Diary	solutions including the study of past and present designers. Students will develop an understanding of how research and the development of technical knowledge is crucial in an increasingly technological world. Students will gain an awareness of how the designs and work of individuals influence and reflect society, different cultures and social economic groups. Within the Yr8 Engineering module, enrichment of technical knowledge is achieved through studies in areas such as material types and properties, with studies into effects on the environment. Technology extra-curricular clubs provide experiences beyond the home and allow students to develop specific skills and more in-depth knowledge alongside the normal Technology curriculum. Research into concepts, the environment, cultures and the work of past and present designers and their achievements, will develop the students' understanding of their own potential and the measures, skills and knowledge

JSTC ALFORD **Curriculum Map**

			Evaluating Assessment Criteria coverage **F** Able to suggest several ways products could be improved. **C** Able to evaluate products against a range of criteria and suggest how they could be improved to meet user needs. **A** Able to evaluate products against a range of criteria & specification points and use some methods of testing a product and evaluate how they were used to improve a product to meet user needs. **E** Able to evaluate products against a range of criteria & specification points & devise own criteria points. Use some methods of testing a product and evaluate how they were used to improve a product to meet user needs. **Formative assessment of Evaluating** Product analysis Evaluation of picture frame	necessary to succeed. Design & Technology will allow students to develop some understanding of Britain's contemporary design practice and design heritage, as well as a knowledge of international design practice. We encourage wider reading and the exploration of academic theory in order to investigate concepts. Students are expected to create and develop designs and ideas independently with varying degrees of innovation and flair. They will develop problem solving skills through independent learning in both a design and practical context, which will enrich the potential of all students by providing valuable skills and the mind-set to progress independently.