

Key Stage 3 Overview	KS3 Module 1: Design Skills (Year 7 Module 1 of 2 – start date W.C. 04.9.21)	KS3 Module 2: Design Skills (Year 7 Module 1 of 2 – start date W.C. 04.9.21)	KS3 Module 3: Block Bot (Year 7 Module 2 of 2 – start date W.C. 05.01.22)
	Knowledge <i>What pupils will know</i>	Knowledge <i>What pupils will know</i>	Knowledge <i>What pupils will know</i>
	<p>Function of Design Subject specific vocabulary Accuracy and quality control Converting to cm-mm-m</p> <p>Materials and Components Know how to use of a range of drawing equipment including colour application and three-dimensional drawing equipment.</p>	<p>Function of Design Subject specific vocabulary Accuracy and quality control Converting to cm-mm-m</p> <p>Materials and Components Know how to use of a range of drawing equipment including colour application and three-dimensional drawing equipment.</p>	<p>Function of Design Development of a design specification (ACCESSFM) Maths. Calculating area and wastage.</p> <p>Materials and Component Knowledge of timbers and their properties.</p> <p>Environment and Sustainability Selecting appropriate materials to be used in design and manufacture</p> <p>Design & Develop Initial design ideas Development of design focusing on annotation. Final 3D outcome annotated and rendered. Create a scale card model of final design idea.</p> <p>Analysis & Evaluate - Analysis of design ideas using ACCESS FM.</p>
	Skill <i>What pupils will be able to do</i>	Skill <i>What pupils will be able to do</i>	Skill <i>What pupils will be able to do</i>
	<p>Design & Develop Sketching skills. Development of ideas and development of 3D drawing.</p> <p>Analysis & Evaluate Use quality control to analyse and evaluate own work to identify areas for improvement.</p>	<p>Design & Develop Sketching skills. Development of ideas and development of 3D drawing.</p> <p>Analysis & Evaluate Use quality control to analyse and evaluate own work to identify areas for improvement.</p>	<p>Research Investigate existing products Generate a design specification using research.</p>

KS3 Module 4: Block Bot <i>(Year 7 Module 2 of 2 – start date W.C. 05.01.22)</i>	KS3 Module 5: Egg Drop. Collaboration <i>(Year 8 Module 1 of 3 – start date W.C. 03.09.21)</i>	KS3 Module 6: Egg Drop. Collaboration <i>(Year 8 Module 1 of 3 – start date W.C. 03.09.21)</i>
Knowledge <i>What pupils will know</i>	Knowledge <i>What pupils will know</i>	Knowledge <i>What pupils will know</i>
<p>Function of Design Converting nets into 3d shapes. Working to scale.</p> <p>Materials and Components Selection of appropriate materials included in annotation of design ideas.</p> <p>Environment and Sustainability Explain why timbers are sustainable</p> <p>Function of Design Working accurately to a tolerance. From analysis and evaluation of final prototype, re- design taking account any points for improvement.</p> <p>Industrial Production Techniques Know how to use tools, equipment and machinery. H&S</p> <p>Materials and Components Work with materials such as pine. Joining methods Finishing techniques.</p>	<p>Function of Design Advantages of working in teams Maths (volume of cubes/ cuboids) Structures & triangulation</p> <p>Industrial Production Techniques. Team members allocated job roles (link to industry). Identify, describe and give examples of the 5 forces Structures (shell & frame)</p>	<p>Materials and Components Understand the limitations of materials Understanding of the importance of sticking to a budget.</p>
Skill <i>What pupils will be able to do</i>	Skill <i>What pupils will be able to do</i>	Skill <i>What pupils will be able to do</i>
<p>Design & Develop Initial design ideas Development of design focusing on annotation. Final 3D outcome annotated and rendered. Create a scale card model of final design idea.</p> <p>Practical Manufacture of block bot H&S</p> <p>Analysis & Evaluate Analysis of design ideas using ACCESS FM. Evaluation of final prototype.</p>	<p>Research Analysis of existing packaging (PICTPD).</p> <p>Design & Develop Collaboration. In teams design & develop initial ideas</p> <p>Analysis & Evaluate Testing and evaluation of design ideas</p>	<p>Practical Manufacture of final prototype H&S</p> <p>Analysis & Evaluation. Testing and evaluation of prototype</p>

Key Stage 3 Overview	KS3 Module 7: Sweet Machine (Year 8 Module 2 of 3 – start date W.C. 05.01.22)	KS3 Module 8: Sweet Machine (Year 8 Module 2 of 3 – start date W.C. 05.01.22)	KS3 Module 9: Headphone Wrap (Year 8 Module 3 of 3 – start date W.C 03.06.22)
	Knowledge <i>What pupils will know</i>	Knowledge <i>What pupils will know</i>	Knowledge <i>What pupils will know</i>
	<p>Function of Design Advantages of analysing existing products.</p> <p>People and Cultures Advantages of design for a client.</p> <p>Materials and Components Understanding of MDF Stock forms</p>	<p>Industrial Production Techniques. Know how to use tools, equipment and machinery. Motion (CAMS, Levers and Linkages). Be able to calculate moments (turning force of a lever) Moment = Force (N) x distance from pivot.</p> <p>Materials and Components Working with MDF.</p>	<p>Function of Design Advantages of analysing existing products. Maths (tessellation & wastage)</p> <p>Materials and Components Knowledge of Polymers & their properties Working with acrylic, paper & boards.</p> <p>People and Cultures Know how to acquire and apply client feedback throughout.</p>
	Skill <i>What pupils will be able to do</i>	Skill <i>What pupils will be able to do</i>	Skill <i>What pupils will be able to do</i>
	<p>Research Analysis of existing products ACCESSFM Mood board Identify/ profile a client</p> <p>Design and Development Annotated initial design ideas Final design idea using Isometric projection Rendered.</p>	<p>Analysis & Evaluate Analysis of final design idea.</p> <p>Practical Workshop skills</p> <p>Analysis & Evaluate. Evaluation of the final prototype. Identify and explain strengths and areas for improvement.</p>	<p>Research Analysis of existing products Profile of client</p> <p>Design & Develop Using design strategies design and develop a range of ideas Model, test and improve design ideas Development using CAD (2D Design)</p> <p>Analysis & Evaluate Evaluation of elements of the design and final design.</p>

Key Stage 3 Overview	KS3 Module 10: Headphone Wrap (Year 8 project 3 of 3 – start date W.C. 03.06.21)	KS3 Module 11: Bottle Opener (Year 9 Module 1 of 3 – start date W.C. 03.09.21)	KS3 Module 12: Bottle Opener (Year 9 Module 1 of 3 start date W.C. 03.09.21)
	Knowledge <i>What pupils will know</i>	Knowledge <i>What pupils will know</i>	Knowledge <i>What pupils will know</i>
	<p>Industrial Production Techniques Know how to use CAM (laser cutter) Know how to use CAD (2D Design) Advantages & disadvantages of CAD/ CAM Vacuum forming</p> <p>Environment and Sustainability Environmental impact of polymers 6 R's Life cycle analysis.</p>	<p>Function of Design Importance of considering human factors when designing. The importance of analysing and evaluating products. Data collection Calculating the mean (average).</p> <p>People and Cultures Designing for a client with specific requirements.</p>	<p>Industrial Production Techniques Scales of production Advantages of production aids H&S Know how to use tools, equipment and machinery.</p> <p>Materials and Components Finishing techniques Standard components Modern materials</p>
Key Stage 3 Overview	Skill <i>What pupils will be able to do</i>	Skill <i>What pupils will be able to do</i>	Skill <i>What pupils will be able to do</i>
	<p>Practical Headphone Wrap. Use CAD software to design and manufacture product.</p> <p>Design & Develop Design and develop packaging ideas.</p> <p>Analysis & Evaluate Testing of final product.</p>	<p>Research Analysis of existing products (ACCESSFM) Human factors (anthropometrics & ergonomics). Profiling of a user/ client.</p> <p>Design & Develop Design strategies developed to generate initial ideas. Development of ideas using isometric and orthographic projection.</p> <p>Analysis & Evaluate Evaluation of design ideas and model</p>	<p>Practical Workshop skills (manufacture of bottle opener). H&S</p> <p>Analysis & Evaluate Testing and evaluation of final prototype (ACCESSFM).</p>

	KS3 Module 13 Picture Frame <i>(Year 9 Module 2 of 3 – start date W.C. 05.01.22)</i>	KS3 Module 14: Picture Frame <i>(Year 9 Module 2 of 3 – start date W.C. 05.01.22)</i>	KS3 Module 15: Cardboard Furniture <i>(Year 9 Module 3 of 3 – start date W.C. 03.06.22)</i>
	Knowledge <i>What pupils will know</i>	Knowledge <i>What pupils will know</i>	Knowledge <i>What pupils will know</i>
	<p>Function of Design Understand how and why designers take inspiration from the work of others. Calculating percentages.</p> <p>Materials and Components Conversion process of timbers Laminating timbers Seasoning timbers Pine HIPS Acrylic Standard components.</p> <p>People and Cultures Importance of primary research (questionnaire/ interview with user.</p>	<p>Industrial Production Techniques H&S Plastic processes (injection moulding, blow moulding, extrusion) Vacuum forming Line bending Joining methods (permanent & temporary)</p> <p>Environment and Sustainability</p> <ul style="list-style-type: none"> - Advantages & disadvantages of renewable and non-renewable energy. - Carbon footprint. 	<p>Function of Design Importance of modelling Concepts do not always have to be successful (James Dyson).</p>
	Skill <i>What pupils will be able to do</i>	Skill <i>What pupils will be able to do</i>	Skill <i>What pupils will be able to do</i>
	<p>Research Designers & design era's Client profile including needs and wants. Create design specification using research.</p> <p>Design & Develop Initial ideas taking inspiration from designers.</p> <p>Development of ideas Final idea using isometric/ two-point perspective or CAD</p>	<p>Practical H&S Hand tools, equipment & machinery.</p> <p>Analysis & Evaluate Evaluate the successes and points for improvement for final prototype.</p>	<p>Design & Develop</p> <p>Practical High quality prototype of design concept</p> <p>Analysis & Evaluate Evaluate the successes and points for improvement for final prototype</p>