

Year 8 Curriculum Plan

Design Technology



Autumn 1		Autumn 2	Spring 1
PRIOR LEARNING	KS3 NC Design - Gather research and use it to develop products aimed at a particular target market. - Generate creative ideas using a variety of skills to communicate their ideas	KS3 NC Make - Use tools, equipment and machinery correctly and accurately. - Know the properties of materials used. KS3 NC Evaluate - Analyse the work of past and present professionals - Test, evaluate and refine their ideas. - Consider the environment in the development of their product.	KS3 NC Make - Use tools, equipment and machinery correctly and accurately. - Consider the properties of the materials used. KS3 NC Evaluate - Analyse the work of past and present professionals and use this in their designing. - Test, evaluate and refine their ideas through to completed product.
	Mechanical Toy - (Theory, Research and Design) - Understand the importance of Anthropometrics and ergonomics in Design. - Mechanical Movement – Knowledge of levers, motion, gears and mechanical advantage calculations. - Theory of natural and Manufactured Timber - Iterative design - To generate a series of design ideas and develop them.	Mechanical Toy- (Development - Evaluation) - Use card to make prototypes and test them using paper fasteners. - RECALL – CAD skills - Develop Techsoft 2D Design skills used in Y7. (Plus, the use of radius and node editing) - The ability to Evaluate/Quality Control developments before manufacture.	Mechanical Toy – (Making- Evaluate) - RECALL – CAM skills - How to use the laser cutter. - Learning to use a range of workshop tools and equipment to manufacture their prototype mechanical toy. - Make use of the anthropometric and ergonomic knowledge in the manufacture of their product. - Use finishing skills to produce a quality outcome. - Partake in practical activities with due regard for the correct H&S procedures. - Review/evaluate the project.

Key: Design process and Iterative design skills Computer Aided Design Computer Aided Manufacture Safe use of workshop tools and equipment Environmental issues Materials

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KNOWING HOW...	Mechanical Toy- (Theory, Research and Design)	Mechanical Toy- (Development - Evaluation)	Mechanical Toy – (Making- Evaluate)
	- Understand the importance of Anthropometrics and ergonomics in Design and use their own data in the development of the mechanical toy handles. - Use the knowledge of levers and motion to make the mechanical toy work effectively. - Know why the properties of the natural and manufactured timbers chosen to manufacture the product make them suitable for the making of the toy. - Specification - Use the design brief and research to write a specification. - Iterative design – from sketches to card models that direct the making of the mechanical toy.	- Use card to make prototypes and test them using paper fasteners. Make sure the mechanism works before moving to hard materials. - RECALL – CAD skills - Develop Techsoft 2D Design skills used in Y7 to generate a developed solution for the arms and legs of the character. (Use of radius and node editing) - The ability to Evaluate/Quality Control developments before manufacture. Asking other people's opinions to help in the evaluation process.	- CAM skills – Laser cutter - Learning to use a range of workshop tools and equipment to manufacture their mechanical toy. - Make use of the anthropometric and ergonomic knowledge in the manufacture of their product. The handle should reflect this. - Use the correct finishing skills to produce a high-quality functioning outcome. - Partake in practical activities with due regard for the correct H&S procedures. - Review/evaluate the project.

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ASSESSMENT	Week 9/10 – Knowledge Checks on the following: - Anthropometrics - Ergonomics - Mechanical Movement – Motion and Levers - Theory of natural and Manufactured Timber	Weeks 9-15 Knowledge Checks on the following: Design and Make Task- Mechanical toy: Developing an idea through iterative design: CAD & CAM Skills and workshop tools and equipment. - Sketch colour and annotate design ideas - Demonstrate iterative design using model making, quality control print outs and has added relevant annotation - Use of appropriate workshop tools and equipment to manufacture a functioning mechanical toy. - Health and Safety. - Finishing techniques – wood. - Effective use of anthropometrics and ergonomics.	Weeks 16/17 - CAD skills – Techsoft 2D Design. - CAM skills – laser cutting. - Workshop tools and equipment Project summative assessment Design and Make Task - Mechanical toy: 50% - - Theory result from the knowledge checks 50% - - Design folder contents - Quality of practical work – Mechanical Toy Overall % for the project given.

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