

Year 8 Product Design Overview

Resistant Materials

Unit	Duration (lessons)	Learning Objectives/Outcomes
Chocolate Bar	8	<p>Students will :</p> <ul style="list-style-type: none"> • Analyse existing chocolate bar and explain why they have been designed in that size & shape • Consider how maths and ergonomics has been used to create the product (volume, size of hand & mouth, individual pieces) • Consider how the branding has been designed & use of colour, to target a particular audience • Generate ideas based on a chosen target market and specification using pre-selected imagery • Develop CAD skills to make a quick cardboard prototype and outer packaging • Be able to explain what makes an effective mould • Appreciate how testing is an important part of developing a product • Test, refine & improve mould design • Explain why MDF has suitable material properties for making a mould • Be able to explain how to use a vacuum former accurately & safely • Be able to identify simple packaging symbols & incorporate in to choc bar outer design • Be able to explain the term casting and why it is a suitable method for batch production
Simple Storage (Timber)	8	<p>Students will :</p> <ul style="list-style-type: none"> • Understand how wood (natural & handmade boards) are classified and where they come from • Know the meaning of renewable sources • Explain why timber & materials in general need to be finished for aesthetics & durability • Use primary data such as product analysis and market research to help develop ideas • Identify key measurements & human factors which need to be considered • Develop 3D sketching & presentation skills • Use CAD to model ideas including google sketch up • Develop confidence in the use of hand skills & specialist equipment • Be able to work safely, accurately & independently • Be able to assemble & decorate outcomes to a high standard

Acrylic Phone holder & storage solution (nets)	8	<p>Students will :</p> <ul style="list-style-type: none"> • Understand how polymers (thermoplastics & thermoforming) are classified and where they come from • Learn how polymers can be shaped using heat and formers • Demonstrate how to set up & use the line bender & hot press safely • Develop ideas quickly through modelling in card • Test shaping materials to develop understanding and to help improve the final prototype • Identify issues with making products by hand in terms of accuracy & quality • Be able to produce a working drawing to finalise design • Learn how to use CAD more accurately by using guidelines and measurements • Learn how to make a bending jig in order to manufacture a product more accurately
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Textiles

Unit	Duration (lessons)	Learning Objectives/Outcomes
Bag for life		<p>Students will :</p> <ul style="list-style-type: none"> • Use the work of others to help inspire their design work • Use primary data such as anthropometrics and product analysis to help develop their ideas • Develop & communicate ideas using annotated sketches & models • Learn the importance of experimenting, testing and reflecting when creating their ideas • Explore & manipulate various properties of materials to improve functionality • Analyse & evaluate test pieces to help improve the quality of a prototype • Investigate how materials can be strengthened through addition, using standard components, seams and stitch choice • Be able to list and identify natural & synthetic fabrics • Be able to select tool & equipment to mark out, cut and join materials together within tolerance to make a quality prototype • Explore how different materials can improve the overall aesthetics of a product • Be able to identify and manage risks when working with tools & equipment