

Jitterbugg Project



Product Design	Year 8 Jitterbugg	Target Levels 4-6	9-13 weeks 2 lessons Per Week
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This project will allow students to experience a variety of processes that could/would be used when completing the Product Design course at GCSE level. Students will Design and Create a product that lends itself to using and exploring many different manufacturing techniques and joining techniques. Once students have completed the design process they will complete a complex product looking at the basics in working in the workshop, alongside H&S and using tools correctly and using correct process. Learners will consider manufacturing and restraints on their designs to meet their specification. Students will also identify different manufacturing production including Mass, Batch and Bespoke / one off. Some electronic basics will be included in this project to allow students to become familiar with how components are used and where they are useful.

LESSON OUTLINES	Week	Objectives	Focus	PLT Focus	Activity & Homework	Outcomes	H&S	Resources
	1	<ul style="list-style-type: none"> Identify targets and record in book for new project Discover potential problems / opportunities from a context brief Using a mind map create a specification from the context. Health and safety Talk and worksheet to complete 	Research & Investigation	IE	<ul style="list-style-type: none"> Add to Target sheet for beginning of each module Identify the context of the problem and develop a brief by creating a Mind Map of potential problems / opportunities. Complete and mark H&S sheet of processes to be used HW Collect images of existing Scenes and Themes for your own project 	<ul style="list-style-type: none"> Targets Mind Map of potential direction Understanding of context Understanding importance of H&S 	<ul style="list-style-type: none"> N/A Presentation Books Assessment criteria Pintrest MindMUp 	
	2	<ul style="list-style-type: none"> Apply knowledge of problem to investigations and research to analyse existing products and themes Investigate and identify manufacturing production. 	Research & Investigation	IE	<ul style="list-style-type: none"> Investigate research and explore areas of research appropriate to context and brief. Using Focus e-Learning research Vacuum Forming & 3D Printing then complete assessment called Vacuum Forming 	<ul style="list-style-type: none"> Understanding technical presentations Analysis of research 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Books Research Pintrest
	3	<ul style="list-style-type: none"> Explore ideas by sketching developing ideas considering elements of the specification details 	Development of design proposals	CT	<ul style="list-style-type: none"> Create several initial design ideas Using this then to draw three concepts that may be used annotated in detail +’s and –’s of each then create a final Design Idea labelled and annotated with dimensions. Create a comic strip showing the process in casting a Lego man in Pewter or Aluminium. You can choose the type of casting you would like to use e.g. Sand Casting, Lost Wax, Silicone Mould, Jelutong/MDF casting. 	<ul style="list-style-type: none"> Design Ideas at different levels Detailed Final Design idea 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Books Drawing equipment
	4-6	<ul style="list-style-type: none"> Using correct techniques complete making tasks of product Reflecting back at designs design and decorate the product appropriately for project Using CAD /CAM create additional features for product. Use complex techniques to complete assembly of several different manufacturing techniques. 	Making / Development of Design proposals	CT SM RL	<ul style="list-style-type: none"> Using knowledge from previous DT lessons students will create a product following direction and techniques. Use knowledge of assembly techniques to complete project Draw a circuit diagram of the circuit that will be used in the project. Try and use the technical symbols of the components in your work. Label and explain how the circuit will work. (We will be using 3V motor and power source will be 2AA batteries (3V in total)). 	<ul style="list-style-type: none"> Completed product with additional accessories from CAD/CAM 3D printing 	<ul style="list-style-type: none"> Use of soldering Use of laser printers (radiation, Fumes) Ventilate area Use of laser printers (radiation, Fumes) Ventilate area Sharps and abrasives Glue / solvents Heat Soldering Iron 	<ul style="list-style-type: none"> Laser printers PC’s 2D Design General wood / plastic working tools Laser Printer Solvent / Glue Soldering Iron

7	<ul style="list-style-type: none"> Evaluate product against original context and brief End of Module assessment 	Evaluation and Reflection	RL	<ul style="list-style-type: none"> Using CAFÉ QUE revisit the specification for the scene product and reflect on your work to see if you have met the original needs and wants of the context audience. Online its Learning test and assessments Identify tools and items you need when soldering. Label them on a poster and include some of the main Health and Safety points when soldering. 	<ul style="list-style-type: none"> Completed evaluation and notes/comments on book work. Its Learning 	<ul style="list-style-type: none"> It's learning and appropriate templates. 	<ul style="list-style-type: none"> Computers and access to templates / resources.
EXT 1	<ul style="list-style-type: none"> Use CAD to recreate product that has been made 	Creating a product for a specific purpose	IE CT TW EP	<ul style="list-style-type: none"> Modelling and making of a product using CAD 	<ul style="list-style-type: none"> Finished model with group evaluation and discussion of workings 	<ul style="list-style-type: none"> Use of appropriate CAD 	<ul style="list-style-type: none"> NA
EXT 2	<ul style="list-style-type: none"> Create an advertisement product that will work alongside product made 	Developing marketing techniques	RL SM	<ul style="list-style-type: none"> Design a small sticker of your choice: Band; funny; info 	<ul style="list-style-type: none"> Finished Graphics and Sticker printed 	<ul style="list-style-type: none"> CAD /CAM (Varies) 	<ul style="list-style-type: none"> CAD / CAM varies

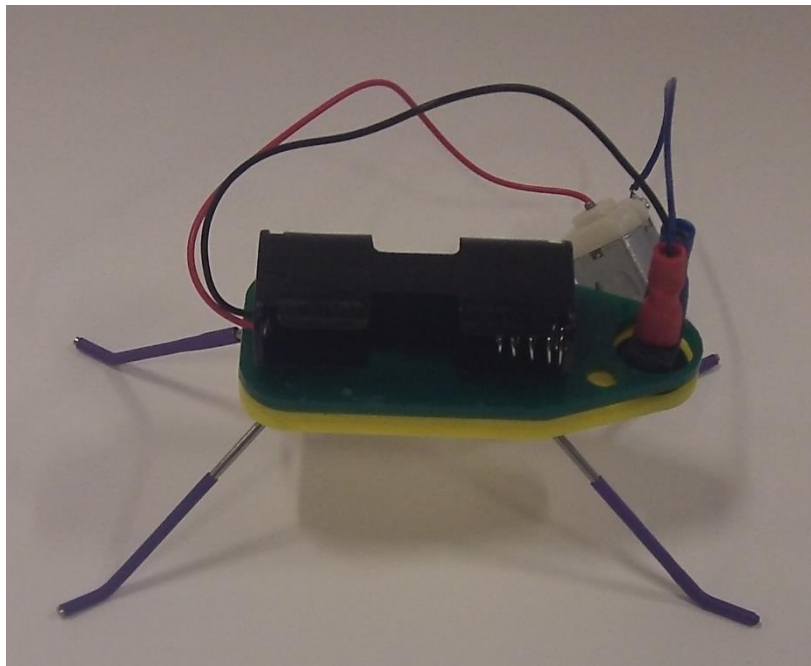
Assessment

LEVELS	Design	Making	Evaluation
6 SOME	<ul style="list-style-type: none"> Several design ideas produced considering research and user need. Appropriate drawings produced of design ideas showing some skill in techniques. CAD used to reproduce original design loosely resembling final design idea. 	<ul style="list-style-type: none"> Follow instructions carefully and safely using the Soldering Iron and appropriate tools accurately. Accuracy shown in making and construction directions followed carefully overcoming problems encountered along the way. Overall quality of product is of a very high standard with attention to detail with a good overall finish. 	<ul style="list-style-type: none"> Evaluative comments used as the product develops making changes where necessary baring in mind the target audience. Reflection of work identifying some areas of improve ment throughout design process keeping in mind the original design.
5 MOST	<ul style="list-style-type: none"> Create some imaginative design ideas for the shape and the Graphical elements of the Product. Sizes and shape identified in design work to suit purpose and Audience. 	<ul style="list-style-type: none"> Follow instructions carefully and safely using the Soldering Iron and appropriate tools correctly. Accuracy shown in making and construction directions followed carefully with some difficulty. Overall quality of product is of a high standard with some attention to detail 	<ul style="list-style-type: none"> Evaluative comments used as the product develops making changes where necessary baring in mind the target audience and purpose. Reflection of work throughout design process keeping in mind the original design
4 ALL	<ul style="list-style-type: none"> Create design ideas for the shape and the Graphical elements of the Product that suit the target audience. Produce more than one idea for your project 	<ul style="list-style-type: none"> Follow instructions carefully and safely using the Soldering Iron and appropriate tools correctly. Some Accuracy shown in making and construction of product. Quality of work is of a good standard and generally well made 	<ul style="list-style-type: none"> Varied evaluative comments made for final product. Reflection of work identifying some areas to improve throughout work. Make Changes where necessary.

ICT Skills	Skills & Knowledge	Technical Language	
<p>In this project ICT will be used in order to develop the students design proposals. 2D Design software allowing students to create and make (CAD CAM) their model on computers. Students will also use ICT to present their work and investigate sources.</p> <p>Other CAD including Adobe Illustrator and Photoshop to complete EXT task Use of Its Learning for resources etc.</p>	<p>PRIOR: Some basic 2D Design Skills Some Context development of design proposals Basic Knowledge of manufacturing processes</p> <p>GAINED: Moderate skill base using CAD Knowledge of Materials, techniques and tools Work Safely Knowledge of Laser cutting, 3D printing and setting up of system Ability to compare and evaluate work based on reflection of comments etc.</p>	<p>Context Specification Manufacture Investigations Plastic recycling Evaluate</p>	<p>Techniques CAD / CAM Casting Moulding Vacuum Forming Components (Electronic)</p>
Differentiation (All, Most & Some)	Health & Safety	PLTS Focus Areas	
<p>All should have a completed a product and used some basic CAD CAM Most should have completed a design and developed a context some use of CAD CAM Some will have developed a context developing a product of high quality that would be suitable for commercial purposes</p>	<p>Laser Cutting Fumes & Radiation Generally Health and safety (Hand Tools) Sharps and abrasives Pillar Drill (if drilling electronic access) Soldering Iron</p>	<p>Reflective Learners (Identifying Areas of improvement in evaluative and reflective comments throughout work and evaluation. Self-Manager (using time wisely and working on design process methodically. Development of work in and out of school. Individual learning.</p>	

Assessment Examples

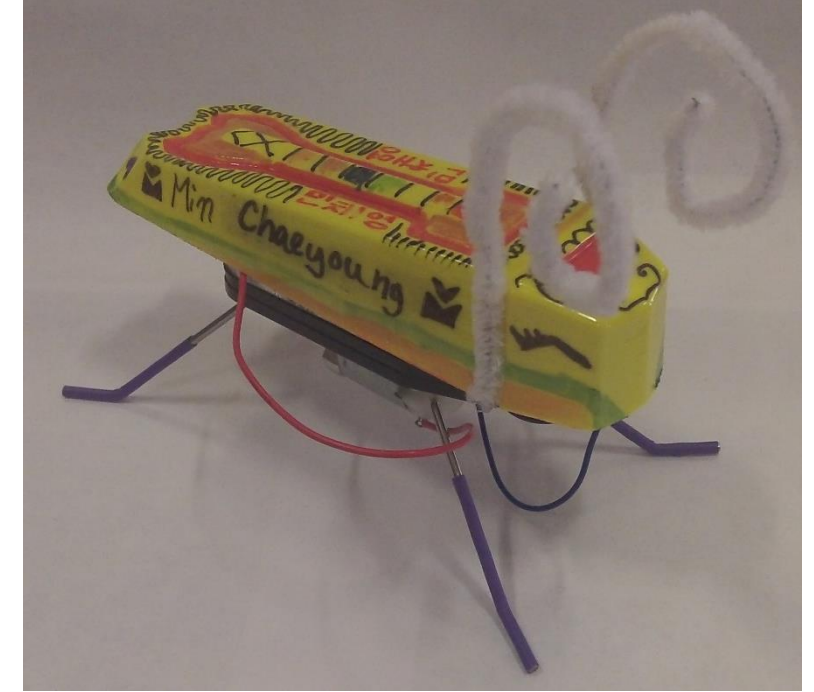
Level 4 (All)



Level 5 (Most)



Level 6 (Some)



Independent enquirers

Focus:

Young people process and evaluate information in their investigations, planning what to do and how to go about it. They take informed and well-reasoned decisions, recognising that others have different beliefs and attitudes.

Young people:

- identify questions to answer and problems to resolve
- plan and carry out research, appreciating the consequences of decisions
- explore issues, events or problems from different perspectives
- analyse and evaluate information, judging its relevance and value
- consider the influence of circumstances, beliefs and feelings on decisions and events
- support conclusions, using reasoned arguments and evidence.

Team workers

Focus:

Young people work confidently with others, adapting to different contexts and taking responsibility for their own part. They listen to and take account of different views. They form collaborative relationships, resolving issues to reach agreed outcomes.

Young people:

- collaborate with others to work towards common goals
- reach agreements, managing discussions to achieve results
- adapt behaviour to suit different roles and situations, including leadership roles
- show fairness and consideration to others
- take responsibility, showing confidence in themselves and their contribution
- provide constructive support and feedback to others.

Creative thinkers

Focus:

Young people think creatively by generating and exploring ideas, making original connections. They try different ways to tackle a problem, working with others to find imaginative solutions and outcomes that are of value.

Young people:

- generate ideas and explore possibilities
- ask questions to extend their thinking
- connect their own and others' ideas and experiences in inventive ways
- question their own and others' assumptions
- try out alternatives or new solutions and follow ideas through
- adapt ideas as circumstances change.

Self-managers

Focus:

Young people organise themselves, showing personal responsibility, initiative, creativity and enterprise with a commitment to learning and self-improvement. They actively embrace change, responding positively to new priorities, coping with challenges and looking for opportunities.

Young people:

- seek out challenges or new responsibilities and show flexibility when priorities change
- work towards goals, showing initiative, commitment and perseverance
- organise time and resources, prioritising actions
- anticipate, take and manage risks
- deal with competing pressures, including personal and work-related demands
- respond positively to change, seeking advice and support when needed
- manage their emotions, and build and maintain relationships.

Reflective learners

Focus:

Young people evaluate their strengths and limitations, setting themselves realistic goals with criteria for success. They monitor their own performance and progress, inviting feedback from others and making changes to further their learning.

Young people:

- assess themselves and others, identifying opportunities and achievements
- set goals with success criteria for their development and work
- review progress, acting on the outcomes
- invite feedback and deal positively with praise, setbacks and criticism
- evaluate experiences and learning to inform future progress
- communicate their learning in relevant ways for different audiences.

Effective participators

Focus:

Young people actively engage with issues that affect them and those around them. They play a full part in the life of their school, college, workplace or wider community by taking responsible action to bring improvements for others as well as themselves.

Young people:

- discuss issues of concern, seeking resolution where needed
- present a persuasive case for action
- propose practical ways forward, breaking these down into manageable steps
- identify improvements that would benefit others as well as themselves
- try to influence others, negotiating and balancing diverse views to reach workable solutions
- act as an advocate for views and beliefs that may differ from their own.