

Instructions:

- **You have the summer holiday to complete this work.**
- You have been provided with resource materials including potential research. Although you will be expected to expand on this research.
- You will need to pick **ONE material** area to focus your design work around.
- You will need to sketch out **several** concept ideas to meet the given design brief.

What your project should include:

- 1-2 pages of relevant additional research, this should be analysed and summarized
- 1-2 pages of initial/concept ideas with evaluation on how they would meet your chosen design brief
- 1-2 pages developed idea using sketching/CAD/ physical modeling along with an evaluation on your design concept.

Please complete a mini digital portfolio for this task. You can use powerpoint/google slides or another appropriate software. Please ensure your sketching is scanned or photographed and added to your slides. If you are using keynote/canva or another platform with compatibility issues, please save your file as a PDF for submission the first week of September. If you have any questions or you aren't sure how/what to do. Drop me an email ncameron@newsteadwood.co.uk

Grading Rubric		Partially	Convincingly	Fully
5-20	<ul style="list-style-type: none"> • Idea that is relevant to brief • Sketching and annotation used. • Different ideas/materials considered • Some additional research evident 			
20-40	<ul style="list-style-type: none"> • Range of designs shown • Clear sketching with annotation • Appropriate material/ideas considered • Dimensions considered • Additional research supports design work. 			
40-60	<ul style="list-style-type: none"> • Clear sketching and detailed annotation with elements of analysis. • Clear use of research page. And application of additional research • Clear sketching and informative annotation • Wide range of ideas considered and developed • Materials/ processes and manufacturing considered • Dimensions and manufacturing considered. 			
60-80	<ul style="list-style-type: none"> • Creative ideas shown, including different views/angles • Good consideration for dimensions, manufacturing and materials including information of material properties and processes that could be used. • Clear design development • Clear application of research, feedback and design development • High level of design communication shown. 			
80-100	<ul style="list-style-type: none"> • Creative & innovative range of ideas shown and developed , including different views/angles • Clear consideration for dimensions, manufacturing processes and modeling. (physical/virtual) • Clear and comprehensive design development • Comprehensive annotation adding to the design communication and development. • Clear and comprehensive consideration of processes, manufacturing, material properties. 			

Name: Previous School: Ks4 Design Experience:

Look for existing design solutions, designers and products currently available on the market. List these products below. Complete some analysis of these. You can add links, videos, sketches or research to support your analysis.

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Research and Ideation:

Investigate various types of disasters (natural and man-made) and common challenges faced during emergencies. List below:

Title: "Innovative Solutions for Disaster Support and Emergency Evacuation"

Objective:

Create a product that aids in disaster support or emergency evacuation. You can choose to design your product using textiles, food, or product design. Your product should be practical, innovative, and capable of providing real help during emergencies.

Context:

Disasters and emergencies can strike unexpectedly, causing significant challenges for individuals and communities. Effective support and swift evacuation are crucial for ensuring safety and well-being. Your task is to design a product that can help people during these critical times, making the process of evacuation or support more efficient and less stressful.

Guidelines:

Textile: Design a textile product that can be used during emergencies. This could be multi-functional, protective and easily transportable. Consider materials that are durable, weather-resistant, and lightweight. Or biodegradable.

Product Design: Develop a product that assists with disaster support or emergency evacuation. This could be a portable shelter, a first-aid kit, a water purification device, or a product that helps people keep themselves safe in power cuts and blackouts. Use materials that are robust and designed for quick deployment and ease of use. Think about how these products could be also packed away, transported and redistributed.

Engineering: Develop a product that assists with disaster support or emergency evacuation. This could be a portable shelter, a first-aid kit, a water purification device, or a product that helps people keep themselves safe in power cuts and blackouts. Use materials that are robust and designed for quick deployment and ease of use. Think about how these products could be also packed away, transported and redistributed. **Your ideas must have a mechanical or electronic element included within the design.**

What materials could you use within your design work?

Why are these appropriate materials/ingredients?

Chosen Material Area you will focus on:

Textiles/ Product Design/ Engineering

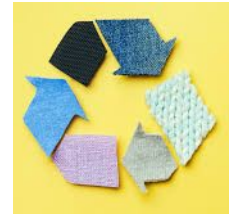


Gumdrop & Gumtech

Patented material BRGP (Bullus Recycled Gum Plastic) combining chewing gum and bio resin. The Gumdrop Bin is blow-moulded from shredded BRGP pellets. This material has now been renamed Gumtech.

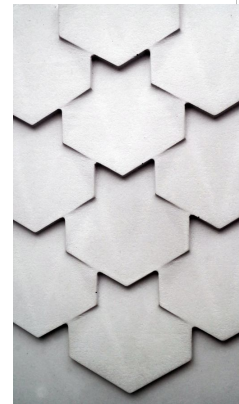


D30- A soft and flexible, material, highly durable, but hardens instantly in reaction to impact. D30 offers intelligent shock absorption, and is widely used in sports equipment, motorcycle, police and army & construction gear.



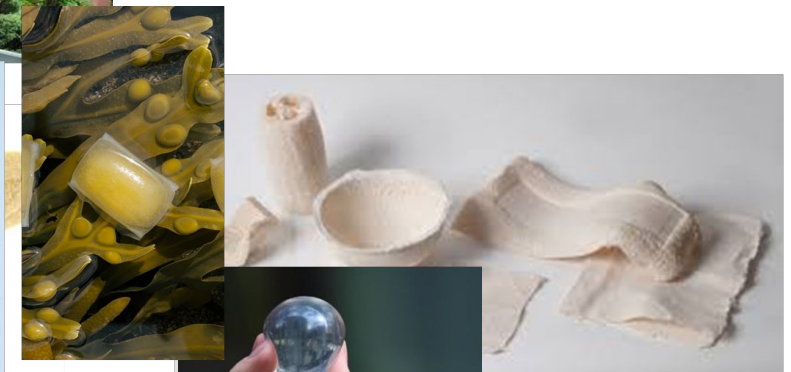
Bamboo is a fast growing sustainable fibre. It can be used instead of traditional timber. Bamboo is a renewable and biodegradable material, meaning it has a minimal environmental impact. Bamboo does not require pesticides or fertilizers during growth, making it even more environmentally friendly than other crops.

Fish Scale Bioplastic MarinaTex



Luffa

Although usually associated with scrubbing your back in the shower, luffa is actually a fast growing tropical vine plant that can be used as a natural smart material.

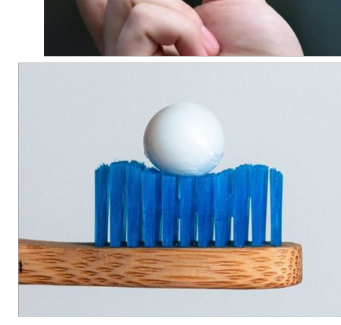
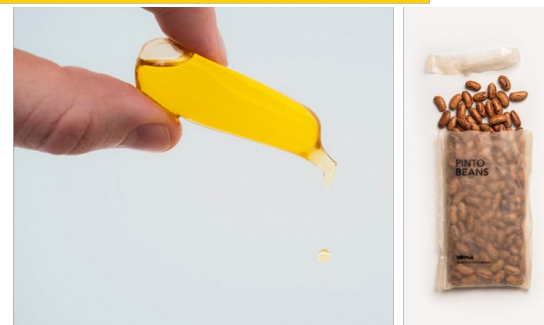


Textile recycling is the process of recovering fiber, yarn, or fabric and reprocessing the material into new, useful products.

Using locally sourced ingredients is also a great way to support local farmers and other small businesses. By sourcing their ingredients from local producers people can help promote local agriculture and ensure that local farmers receive fair compensation for their hard work. This, in turn, can help to build a stronger local economy and promote sustainable agriculture practices.



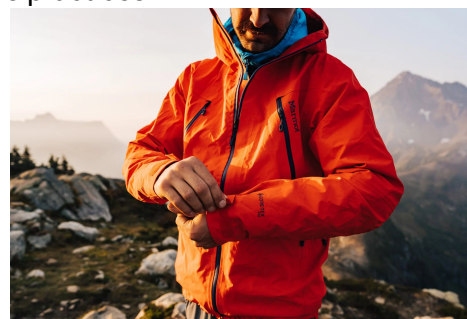
Notpla: Seaweed based Plastic



Bamboo fabric is a soft and sustainable textile made from the fibers of bamboo plants.



Gore-Tex is W. L. Gore & Associates's trade name for waterproof, breathable fabric membrane. It was invented in 1969. Gore-Tex blocks liquid water while allowing water vapor to pass through and is designed to be a lightweight, waterproof fabric for all-weather



Initial Ideas

Use this space to do some concept sketching of your ideas. You can use colouring pencils if you would like. You can choose to sketch in 2D or 3D. Please sketch a range of ideas. Add labels to help explain your design ideas. If you need more space use additional slides. (scan or take photos of your sketching and add to the space.)

Tips & Hints:

When designing, use sketching and annotation and labels to explain your work.

Think about including the following:

- Materials your product might be made from.
- Label the key design features that you have included.
- Think about the size of what you are designing, you might want to add measurements and dimensions. (don't worry about drawing to scale)

Design Development

Briefly evaluated your initial/concept ideas and begin to develop a design from these. You should clearly communicate key design features, consider how this idea could be manufactured as well as how it meets the brief set. You can use sketching/CAD/ Physical modeling to develop your idea.

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