

# Environmental Impact

	2-3	4-6	7-9
<b>Carbon Footprint</b>	<input type="checkbox"/> Describe what a carbon footprint and ecological footprint is.	<input type="checkbox"/> Explain how a person's carbon footprint contributes to global warming.	<input type="checkbox"/> Explain how designers and manufactures contribute to global warming.
<b>Ecological Footprint</b>	<input type="checkbox"/> Identify what increases your carbon footprint.	<input type="checkbox"/> Explain how the ecological footprint for an area is calculated.	<input type="checkbox"/> Explain how a designer and manufacturer could reduce their carbon footprint
	<input type="checkbox"/> Identify how you could reduce your carbon footprint.	<input type="checkbox"/> Explain why it is important to reduce your carbon footprint.	<input type="checkbox"/> Explain why it is important for everyone to be aware of their carbon footprint and explain the impacts of global warming.
<b>6Rs</b>	<input type="checkbox"/> Identify the 6Rs	<input type="checkbox"/> Explain what each of the 6Rs mean.	<input type="checkbox"/> Apply the 6Rs to a design in order to make it more eco-friendly
<b>Sustainable Forest</b>	<input type="checkbox"/> Identify what sustainable design is	<input type="checkbox"/> Explain what sustainable design and sustainable forest is.	<input type="checkbox"/> Create a sustainable design
<b>Sustainable Design</b>	<input type="checkbox"/> Identify the FSC logo and what it stands for.	<input type="checkbox"/> Explain what the FSC do as an organisation.	<input type="checkbox"/> Create a sustainable design ideas that show a clear understanding of how a product could be made eco-friendly using the 6Rs.
<b>Life Cycle Analysis</b>	<input type="checkbox"/> Identify the 6 stages of the LCA	<input type="checkbox"/> Create design ideas that show a clear understanding of how a product could be made eco-friendly using the 6Rs	<input type="checkbox"/> Carry out a LCA on your design and modify in response to this analysis.
		<input type="checkbox"/> Explain what each of the LCA stages involves	

# Smart Materials

	2-3	4-6	7-9
<b>Smart Materials</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Identify what a smart material is.</li> <li><input type="checkbox"/> Identify a range of uses for smart materials in design.</li> <li><input type="checkbox"/> Identify a range of smart materials.</li> <li><input type="checkbox"/> Identify the advantages and disadvantages of smart materials.</li> <li><input type="checkbox"/> Create a design that includes a smart material.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Describe what a smart material is.</li> <li><input type="checkbox"/> Describe the different uses for smart materials in design.</li> <li><input type="checkbox"/> Describe how a range of smart materials work.</li> <li><input type="checkbox"/> Describe the advantages and disadvantages of a range of smart materials.</li> <li><input type="checkbox"/> Create a design that includes an appropriate smart material with a clear description of how it would function.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Explain what a smart material is.</li> <li><input type="checkbox"/> Explain the different uses for smart materials in design.</li> <li><input type="checkbox"/> Explain how a range of smart materials work.</li> <li><input type="checkbox"/> Explain the advantages and disadvantages smart materials.</li> <li><input type="checkbox"/> Create a design that includes an appropriate smart material with a detailed description of how it would function and justification for its choice.</li> </ul>

# Task Analysis

Unit	2-3	4-6	7-9
Identifying & investigating design opportunities.	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can identify a design problem and can analyse this problem using the 5Ws.</li> <li><input type="checkbox"/> I can identify the needs and wants of the user.</li> <li><input type="checkbox"/> I can identify the moral, social and economic factors that need to be considered when designing a new product.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can identify several design problems or opportunities based on the design context.</li> <li><input type="checkbox"/> I can identify the needs and wants of the user and have described the cultural and socio-economic factors of the user.</li> <li><input type="checkbox"/> I can identify the moral, social and economic factors that need to be considered when designing for the potential user and the constraints of these.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can identify and explain several design problems or opportunities based on the design context.</li> <li><input type="checkbox"/> I can identify the needs and wants of the user and have described the cultural and socio-economic factors of the user and how these might influence my design.</li> <li><input type="checkbox"/> I can explain the moral, social and economic factors that need to be considered when designing for the potential user and the constraints of these.</li> </ul>

Target	Below (R)	Emerging (A)	On (G)	Exceeding (E)

# Design Specification

Unit	2-3	4-6	7-9
Design Specification	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can write a design specification based on ACCESS FM.</li> <li><input type="checkbox"/> I can identify measurable criteria to inform my design.</li> <li><input type="checkbox"/> I can explain <b>how</b> I will meet each of my specification points.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can write a design specification based on ACCESS FMM and the end users needs and wants being met.</li> <li><input type="checkbox"/> I can identify measurable criteria such as ergonomics how the product could be manufactured in industry in terms of quantities.</li> <li><input type="checkbox"/> I can explain <b>how</b> I will meet each of my specification points.</li> <li><input type="checkbox"/> I can <b>justify</b> and give reasons for each of my design specification points linking to my research.</li> <li><input type="checkbox"/> I can identify how each of my points meet the needs of my user.</li> <li><input type="checkbox"/> I can prioritise each of my specification points.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can write a detailed design specification based on ACCESS FMM and the end users needs and wants being met.</li> <li><input type="checkbox"/> I can identify measurable criteria such as ergonomics how the product could be manufactured in industry in terms of quantities and its impact on cost and the environment.</li> <li><input type="checkbox"/> I can explain <b>how</b> I will meet each of my specification points.</li> <li><input type="checkbox"/> I can <b>justify</b> and give reasons for each of my design specification points linking to my research.</li> <li><input type="checkbox"/> I can explain how each of my points meet the needs of my user</li> <li><input type="checkbox"/> I can prioritise each of my specification points and explain why I have put them in this order of importance.</li> </ul>

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# Developing Ideas

Unit	2-3	4-6	7-9
	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can draw out 2-3 design ideas and label using ACCESS FM</li> <li><input type="checkbox"/> I can identify social, moral and economic factors.</li> <li><input type="checkbox"/> I can generate ideas that meet most of my specification points.</li> <li><input type="checkbox"/> I can evaluate my design ideas identifying advantages and disadvantages for each idea.</li> <li><input type="checkbox"/> I can identify 2-3 ways of improving my designs based on my evaluations.</li> <li><input type="checkbox"/> I can test and evaluate my designs through 3D prototyping.</li> <li><input type="checkbox"/> I can show improvements through drawings and prototypes. (2-3 improvements)</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can draw out 4-5 design ideas and label using ACCESS FMM.</li> <li><input type="checkbox"/> I can identify social, moral and economic factors relevant to the user</li> <li><input type="checkbox"/> I can generate ideas that meet all of my specification points.</li> <li><input type="checkbox"/> I can evaluate my design ideas explaining the advantages and disadvantages for each idea linking back to ACCESS FM and the needs and wants of the user.</li> <li><input type="checkbox"/> I can identify 4-6 improvements and can explain how these could be made.</li> <li><input type="checkbox"/> I can explain how each prototype could be tested and evaluated against my design specification.</li> <li><input type="checkbox"/> I can show improvements through drawings and prototypes. (4-6 improvements)</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can draw 4-5 design ideas and label using ACCESS FMM. These designs are creative, innovative and appealing.</li> <li><input type="checkbox"/> I can explain how social, moral and economic factors relevant to the user and how these have informed my design ideas.</li> <li><input type="checkbox"/> I can generate ideas that meet all of my specification points and I can explain how I have met them.</li> <li><input type="checkbox"/> I can evaluate my design ideas explaining the advantages and disadvantages for each idea linking back to ACCESS FM and the needs and wants of the user.</li> <li><input type="checkbox"/> I can identify 6-8 improvements and can explain how these could be made.</li> <li><input type="checkbox"/> I can explain how each prototype could be tested and evaluated against my design specification.</li> <li><input type="checkbox"/> I can explain how each of my prototypes could be improved.</li> <li><input type="checkbox"/> I can show improvements through drawings and prototypes. (6-8 improvements)</li> </ul>

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# Evaluation

Unit	2-3	4-6	7-9		
Analysing & evaluating design decisions & prototypes.	<input type="checkbox"/> I can test and evaluate my prototypes against my specification using a template.	<input type="checkbox"/> I can test and evaluate my prototypes against my specification and the views of my client and user in an extended writing piece.	<input type="checkbox"/> I can test and evaluate my prototypes against my specification and the views of my client and user in an extended writing piece.		
	<input type="checkbox"/> I can record my findings and identify some improvements and modifications as a result of my findings.	<input type="checkbox"/> I can record the views of my user and client and explain how I could improve the design further based on their negative points	<input type="checkbox"/> I can record the views of my user and client and explain how I could improve the design further based on their negative points		
	<input type="checkbox"/> I can use the Life Cycle Analysis to evaluate the impact of each of my prototypes on the environment.	<input type="checkbox"/> I can record my findings and can explain what improvements, modifications and refinements have been made at every stage of developing and making.	<input type="checkbox"/> I can record my findings and can explain what improvements, modifications and refinements have been made at every stage of developing and making.		
	<input type="checkbox"/> I can identify the positives and negatives of my prototypes and suggest 1-2 improvements for each.	<input type="checkbox"/> I can use the Life Cycle Analysis to evaluate the impact of each of my prototypes on the environment and explain how I could reduce impact further.	<input type="checkbox"/> I can use the Life Cycle Analysis to evaluate the impact of each of my prototypes on the environment and explain how I could reduce impact further.		
	<input type="checkbox"/> I can show these improvements through further drawings and prototypes. (1-2)	<input type="checkbox"/> I can identify the positives and negatives of my prototypes and suggest 3-4 improvements for each.	<input type="checkbox"/> I can identify the positives and negatives of my prototypes and suggest 5-7 improvements for each.		
		<input type="checkbox"/> I can show these improvements through further drawings and prototypes. (3-4)	<input type="checkbox"/> I can show these improvements through further drawings and prototypes. (5-7)		
		<input type="checkbox"/> I can explain how these improvements have been made and why they have been made.	<input type="checkbox"/> I can explain how these improvements have been made and why they have been made referring to technical knowledge of materials and components.		
	Target	Below (R)	Emerging (A)	On (G)	Exceeding (E)

# Making

Unit	2-3	4-6	7-9
Making	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can select and safely use specialist tools, techniques, processes, equipment and machinery.</li> <li><input type="checkbox"/> I can make a final prototype that is accurate in parts.</li> <li><input type="checkbox"/> I can make a final prototype that meets some of the needs, wants and values of the user</li> <li><input type="checkbox"/> I can make a prototype that meets some of my specification points.</li> <li><input type="checkbox"/> I can make a prototype that uses more than one skill.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can select and safely use specialist tools, techniques, processes, equipment and machinery.</li> <li><input type="checkbox"/> I can make a final prototype that is accurate in most parts due to accurate marking out.</li> <li><input type="checkbox"/> I can make a final prototype that meets most of the needs, wants and values of the user.</li> <li><input type="checkbox"/> I can make a prototype that meets most of my specification points.</li> <li><input type="checkbox"/> I can make a prototype that uses a range of skills and techniques.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I can select and safely use specialist tools, techniques, processes, equipment and machinery including CAD/CAM.</li> <li><input type="checkbox"/> I can make a final prototype that is accurate all parts due to accurate marking out and construction.</li> <li><input type="checkbox"/> I can make a final prototype that meets all of the needs, wants and values of the user.</li> <li><input type="checkbox"/> I can make a prototype that meets all of my specification points.</li> <li><input type="checkbox"/> I can make a prototype that uses a range of skills and techniques including CAD/CAM.</li> </ul>

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