

Candidate 1 evidence

ENTER NUMBER OF QUESTION		DO NOT WRITE IN THIS MARGIN
1)	(a) • The stainless steel shelves were used as stainless	
	steel is chemical resistant, making it easy to clean.	
	• The nylon castor wheels are suitable because nylon is self	
	lubricating, meaning they can easily spin and rotate.	
	• Tubular stainless steel frame is suitable because it is	
	light in weight, meaning it will won't add too much weight onto	
	the wheels, thus stopping it from moving.	
	• ABS shelves and handles are suitable for the trolley because	
	it gives the handles good grip, when being used.	
	• The galvanised mild steel wheel brackets were used as they	
	won't corrode causing them to weaken and fall apart.	
	• Polypropylene tool hooks are suitable as they are a strong	
	plastic, meaning they will be able to hold something without	
	snapping.	
	(b) • The The nylon castor-wheels could have been injection moulded	
	as it is a process used to create thermoset items with thermoset	
	plastics.	
	• The tubular stainless steel shelves may have been extruded as	
	they have a long constant cross-section.	
	• The ABS shelves and handles could have been compression	
	moulded, so that it could create the intricate design.	

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	<p>(c) • One way it has influenced the design is that it should be mobile so it that it can be easily taken from one place to another.</p>
	<p>• Another thing is the tool trolley should be able to hold a substantial amount of weight so it can hold alot of tools.</p>
	<p>• The Medical trolley should be easy to clean if any medicines get spilled and need to be easily removed.</p>
	<p>• The tool trolley should have compartments so that it can securely hold any loose items, such as screws, nuts, bolts and pins.</p>
	<p>• The tool trolley should be easy simple to be assemble as it is self-assembled, so shouldnt require any specialist knowledge to assemble.</p>
	<p>(d) • One drawback of standard components is that it can hinder the designers when they are trying to design a product.</p>
	<p>• Another drawback is that they can be easy to loose and without a to one can stop you from assembling.</p>
	<p>• A benefit of a product that uses standard componeb is that they are simple to assemble</p>
	<p>• They also dont require any specialist knowledge or tools.</p>
	<p>Another benefit is that they are cheap so dont make a</p>

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• A final benefit is that they are quick to use when assembling a product.

(e) • A benefit of using physical modelling is it lets you see what the whole model will look like.

- You can also get a look at ~~the~~ how parts will join together.
- It allows you to test out the ergonomics of a product and see if all sizes are correct.
- It allows you to see if you need to make any changes or fix any mistakes the model has.

2) (a) • Abs may have been used in the manufacture of the child's safety helmet as it is durable meaning, if a child falls and hits their head the helmet will take most of the hit and it can take multiple hits without breaking.

(b) • The cushioning of the helmet means the children are likely to keep it on or keep using it as it will be comfy for their head.

- The adjustable strap at the back of the helmet means that it will be suitable for all children's head sizes.
- The ~~the~~ chin strap allows the helmet to stay on the child's head when using it so it doesn't fall off.
- Finally the blue and red colour scheme allows them to stand

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	out, meaning they are more visible to cars and less likely to get hit by one.
	(e) An evaluation technique that could be used is a test rig as it will test the helmet in different environments and circumstances to ensure it is fit for its purpose.
3)	(a) • One dis advantage of an open brief is that it allows the designer to be creative and design something never seen before. • One disadvantage of an open brief is that the client may not be happy with the product the des designer has designed for them.
	(b) • The purpose of the product design specification is to show ^{tell} the designer certain things the product should contain or be ^{to give} indicators as to how it should look. This may include a colour scheme it should follow, a theme, its main purpose/function and how many people the product should be made for.
	(c) • Morphological any analysis is a table, with multiple headings with columns under them. These headings will be tied into the design of a product and the columns underneath link to the headings. Then you pick one ^{one} box from each column to create a design to help with your initial ideas. Here is an example on the ^{the} that is for the design of a coffee table.

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	Number of legs	Main material	colour scheme	Secondary function	
	4	Mahogany	chrome	book shelf	
	②	MDF	· Cold	Storage for board games	
	1	Plywood	Warm	drawers for sockets	
	3	Glass	nature	light underneath	

(d) • Graphic drawings are a quick way to get some initial ideas for the start of the design process.

- Programmes such as CAD can be used to make models which let you see how the product will look

- Graphic drawings show the designer how parts of the design will join together when being assembled.

- Also models can be easily changed or mistakes easily fixed when using graphic programmes.

- Finally rendered views of models can be used to give a realistic view of how the model will look.

4) (a) • Advertisements can be used to hype customers for the launch of a product meaning, it will have a high amount of initial sales.

- Sponsorships are a great way to get a successful launch of a product.

- Having a deal for a new product, like buy two get one free can be used to ensure the successful launch of a product.

- Finally having a celebrity endorsement is good as it gives customers

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	faith that what they are buying is worth their money.
	(b) • Companies can put on a sale that reduces the price of the product meaning customers are more likely to buy it.
	• Adding a rebranding rebrand of the packaging can create a new hype on the product meaning customers want to buy it and , increasing the sales.
5)	(a) • The width of the handle should ^{be wide enough.} of 40mm so that 95th percent of the adult hand grips can use it.
	• The size of the buttons should be that of the finger tips of 50th percentile, so that the majority of people can press the buttons.
	• The weight of the door should be heavy enough so that small children can open it and burn themselves.
	• The dial shouldn't be too loose so that people can precisely also choose the temperature.
	• The green of the start button and red of the stop button serve as an indicator that it is a start and stop.
	• Finally the outline around the different buttons indicate to the user that they are different buttons.
	(b) The design of products is being influenced by market pull as the market want things that are quick and easy to do. For example ready to eat meals are popular as they take no time to cook and

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all you have to do is heat them up in the microwave and then they are ready to eat.

(e) • One advantage is that it stops people from copying what your ~~many~~ products purpose is.
• It also stops people from selling products and making money from ideas similar to the ones that made your product.

6) (a) • The burning of a metal can be used to see what type of metal it is by looking at the light it burns (colour of light)
• melting a plastic and trying to reshape it can show whether it is a thermoset plastic or a thermosetting plastic.
• If a magnet sticks to a metal it means that it contains iron and is ferrous.
• If a wood has naughts in it then that means it can be identified as a soft wood.

(b) • One feature that something will have to indicate its pre-moulded is it will be hollow.
• Another feature it will have is an injection mark, which is where it would have been blown into.

(c) • Gantt charts help show workers what is left to be complete. it also tells workers deadlines for when things have to be finished.

