

Candidate 8

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1.d)	<p>The nylon collapsible front wheels of the manual wheelchair are suitable as the material is self-lubricating meaning the seat will collapse appropriately and won't become jammed preventing it from working appropriately.</p> <ul style="list-style-type: none">• The ABS footrests of the manual wheelchair is suitable as it has a smooth surface finish meaning any dirty feet footprints can be cleaned off making it hygienic and keeping the aesthetic appeal of the wheelchair.• The aluminium front wheels in the manual wheelchair are appropriate as the material is is very lightweight meaning the wheels won't weigh down the wheelchair helping it to move to be carried by users easily.• The carbon fibre back wheels of the paralympic wheelchair is very appropriate as a material as carbon fibre is has extremely high strength.	

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b)	

meaning it can withstand the high usage of the wheelchair in sports & won't break as easily.

- The stainless steel bumper & wings in the paralympic wheelchair is very suitable as the material has high aesthetic qualities meaning the wheelchair will attract customers due to its high appeal aesthetically. It's nice & shiny & eye-catching.
- The mild steel frame of the manual wheelchair is very suitable as this ~~product~~ ^{material} is relatively malleable meaning the bent frame can be achieved improving ~~the~~ ^{the} function of the wheelchair to move correctly.
- The nylon used in the manual wheelchair is appropriate as it adds comfort for the user sitting in it.

b) • The ABS footrests in the manual wheelchair

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were manufactured using injection moulding & this is clear as the footrests ~~are~~ have small, intricate details to improve grip which injection moulding can achieve from its ^{high} accuracy in moulds. ABS is also a suitable material for this process.

• The mild steel frame in the manual wheelchair was made by extrusion & this is seen as the frame is relatively simple and symmetrical in shape which extrusion can achieve with its uniform cross-sections and simple shapes like this straight frame.

• The aluminium frame of the ~~manual~~ paralympic wheelchair was formed by bending as we can see the frame is bent which is produced by bending. The aluminium & the stainless steel is also joined together by welding.

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C)	<p>The choice of nylon ^{front} wheels in the paralympic wheelchair is suitable ^{for function} as the nylon won't be likely to 'jam' meaning the wheelchair will be able to move around easily without problems like stopping.</p> <p>The ABS for footrests in the manual wheelchair are influenced by function as they have grips on them so the user's feet won't slip off the seats & they can sit properly.</p> <p>The factor of having a collapsible wheelchair is influenced by function as users can then fold it away, transport it and store it easily making it more appropriate to use & gives extra benefits.</p> <p>The bumper & wings on the paralympic wheelchair is excellent for the high-action use of this wheelchair as the user can deflect other competitors & defend themselves while playing the sport making the</p>

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wheelchair protective & suitable for sports which is clearly caused by function & improving the user's abilities & performance.

- The angled back wheels of the paralympic wheelchair is influenced by function as they make the chair more streamlined meaning the user can move faster in their sports and improve their performance in the sports by being able to move faster.

d) • Standard components are beneficial as they are widely available and many can be bought easily at a relatively low-price, saving money ~~they can also save time for the manufacturer as~~ and helping to make the wheelchairs more affordable for users.

- They also save time in the manufacturing process as they can quickly be used to

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e)	

assemble the wheelchairs therefore saving time in the process overall by not having to make them originally.

- However, since standard components are bought in from third party companies & sources use contracts would need to be filled out making the process of manufacturing the wheelchairs more difficult & tedious.
- Standard components are also delivered in from these companies and if they arrived late the whole manufacturing process of these wheelchairs would go behind schedule which would be disastrous for the company in terms of meeting sale deadlines.

e) • The dimensions of the handles to push the manual wheelchair would be influenced by anthropometric data as

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doesn't fall out or go bad as the packaging is durable due to the features of vacuum forming like it's curved corners & edges.

b) • ABS - this is a suitable material for food packaging as it comes in many colours which food packaging usually comes in such as the black in the picture and the transparent strawberry case. This material can also be melted down and shaped into any shape which is essential for the ridges & corners of the food packaging which, as mentioned before, is essential in the packaging.

• ABS also has a high surface finish which gives the packaging good aesthetic appeal as well as making it easy to clean which helps the packaging to keep the food fresh & uncontaminated as well as making it easy to wash before recycling the packaging.

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c)	<p>• The volume of product the packaging needed would have to be considered so the manufacturer knows how in demand the product^{is} & what system would be most suitable to accommodate the demand for the food packaging which is high for this in this case therefore mass manufacture would be most suitable for this.</p> <p>• The processes needed to produce the product would need to be considered as some processes are only available through larger types of production and in terms of the food packaging, vacuum forming is more available in mass production systems than smaller ones requiring more labour intensive processes.</p>
3-a	<p>• The benefits of CAD software is the fact that the design can easily be changed electronically if the headphones aren't suitable or a problem</p>

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b)	

A strong brand image increases consumer loyalty as consumers will trust companies such as ~~Bose~~ Bose and continue to buy their products as the brand is seen as trustworthy.

A strong brand image will also remind consumers of the brand straight away and be encouraged to buy from them such as Bose, since it has a strong brand image when people see headphones they might be reminded of Bose and be encouraged to buy their products as the brand is familiar.

A strong brand image can also justify high prices in products as they're seen as popular and in demand therefore can use this to make more profit, like if Bose were to charge more for their headphones most consumers would still pay this higher price.

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4.a)	

is when the product's popularity has died down as sales have been steady and not as much advertising is needed as the product has made it's profit. The sales begin to decrease as everyone has already bought the product and it isn't a need in the market anymore. Less products are produced and less products are bought.

The style of the gillette razor is very modern and up-to-date which adds aesthetic appeal as consumers are attracted to modern styles as they seem innovative and new which is seen in this razor.

The different textures of the gillette razor also adds aesthetic appeal as there is more to see when looking at it as it isn't just all the same as there's rubber & metal incorporated in the razor.

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b)	

The bright blue colour of the more simple razor jumps out ^{at} the consumer as it adds aesthetic appeal as blue is a common favourite colour and appeals to many people in terms of aesthetics.

The contrast between the black and blue colours of the ^{2nd} razor creates aesthetic appeal as the two strong colours differ from each other making the razor seem more intense and aesthetically pleasing.

Block models - these models are solid and can be made from blue foam making carvings easier to create in the model so the aesthetics and details of the product are more visible. The aesthetics of the product can be tested by consumers by looking at the form of the product. Ergonomics can also be tested by

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ii)	
b)	

such as the safety of a product or the function it's supposed to have. This type of specification has the purpose of detailing the issues the designer must solve to make a perfect + fully appropriate product.

ii) • Technical specification - the purpose of this specification is to help the designer focus on how the product will be assembled and the issues that may arise when ^{actually} producing the product. The joints of the product could be included or the types and numbers of standard components and the reasons behind the technical decisions made.

b) • Questionnaire - a set of questions surrounding the needs of consumers in a product could be given to the target market so the designer could use the answers to create a suitable product for them which would sell and

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	serve customers of the target market suitably.
	• Comparison - a designer could ex look at existing products which have been successful and some which haven't been successful and could then pick out the things making the product successful which would then give the designer a good idea of how to produce a product to be successful and to meet similar needs of the target market as the products being compared before.
	c) • Manufacturers could use environmentally friendly energy sources such as wind energy and hydraulic energy to reduce the amount of polluting pollutants coal or oil being taken from the ground.
	• They could also use recyclable packaging such as cardboard or recyclable plastics.

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6-a)	
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so the materials won't end up disposed in landfills and can be reused for new products.

- The manufacturer could also send out less often but larger exports so less journeys are had for vehicles to transport their product. This would decrease the amount of pollution caused by vehicles transporting products.
- Manufacturers could also appropriately label their products so users know how to appropriately dispose of their products & packaging, reducing a waste of good materials & products.

(b-a) • Comparisons between existing materials could be done to compare colours and dimensions which could eventually find

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Similarities between ~~two~~ a material therefore identifying it.

- The materials could be put under different heats as many melt under higher heats than others which could help decipher certain materials such as thermoplastics and thermosetting plastics.

- Tests for durability could be performed to test how durable a material is as some materials are more durable than others. The material could be used and hit over a period of time to test its durability.

b) • Ribs and webs help to increase the strength of the material in a product as more variation within the product is seen.

- Bosses give an indication of where standard components can be fitted

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7.	<p>• Symbols such as the 'CE' symbol on a product product helps the product to trust the product & safety of it as it's been certified by the European Union as safely produced and safe to use.</p> <p>• Graphics can be used to improve the aesthetics of a product. Electronic graphics such as CAD software is very effective at improving aesthetics of a design as the electronically drawn design can be changed in colour very easily and different textures can be grafted onto the digital draw drawing. This allows the designer to explore different aesthetics of the product as changes of the graphics can be made so easily.</p> <p>• Quick sketches can be used in the design process and to generate initial ideas. Scribble graphics can be applied here to and generate</p>

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7.	<p>a plethora of different ideas to give the designer inspirations to develop these drawings. These sketches aren't detailed and allow the designer to decide on different ideas quickly without putting too much time into drawing and using advanced graphics.</p> <p>• Scaled down graphics can be used to work out dimensions of the product. A product may be too large to sketch up-to-scale so designers will use a scale to scale down the product and draw an accurate representation of the product. Different dimensions can be tried until they make sense and suit the product in the end. The graphics can be of an advanced level here to represent how the product will really look or relatively simple so ideas of dimensions can be trialled efficiently. This use of graphics helps to create sensible sizes for the product.</p>

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