

## Candidate 2

ENTER NUMBER OF QUESTION	DO NOT WRITE IN THIS MARGIN
1a)	Manual wheelchair
	ABS footrests - ABS is suitable as it is a strong and ductile material. This is useful because the user may put their weight on the footrests when sitting
	ABS is also suitable as it's available in a range of colours which is useful to promote to a wider target market

ENTER NUMBER OF QUESTION	DO NOT WRITE IN THIS MARGIN
	Mild steel frame
	Mild steel is suitable because it is strong and ductile. This is useful as it means that the frame can handle the weight of the user.
	Nylon seat
	Nylon is a suitable material because is soft and stretchable which is useful as it'll fit to the user body weight/shape

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Sports wheelchair

Carbon fibre back wheels

Carbon fibre is suitable as it is clearable and ductile which is useful as it may get crashed into alot (depending on sport)

Aluminium frame

Aluminium is suitable as it strong and ductile but also aesthetically <sup>Pleasing</sup> It is ~~not~~ useful as it doesn't rust so doesn't need constant care

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but also due to it being ductile  
it won't damage under a  
challenge

~~Injection moulding~~  
Extrusion bend

b) Weaving was used in the  
making of the seat  
for the collapsible manual wheel-  
chair. It is suitable because  
Nylon is a fabric

Injection moulding was used in  
the making of collapsible manual  
wheelchair's foot rests. It is  
suitable as the ABS has complex  
shapes/patterns along the top of  
them

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	Extrusion was used in the	
	making of the Aluminium	
	frame for the Paralympic sports	
	wheelchair. It is suitable as	
	the metal frame is a continuous	
	cylindrical shape with a consistent	
	radius. On top of this, bending also	
	would've been used to shape	
	the frame.	

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C	
<p>Function has <sup>been</sup> influenced the collapsible manual wheelchair by making sure the handles are at height so the 5<sup>th</sup>-95<sup>th</sup> percentile can reach it to ensure its function is fulfilled.</p>	
<p>On top of this the width of the wheelchair has also been influenced by function to allow it to achieve its primary function.</p>	
<p><del>Then</del> Function has influenced the Paralympic sports wheelchair by making the wheels angled to ensure it is aerodynamic but</p>	

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also steady so it won't fall.

The bumper and wings have also been influenced by function as these allow the wheelchair to crash together without too much injury

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d	
Collapsible W/C	
Advantage	
• It allows for flat pack meaning	
more can be sold at once as	
less space is taken up.	
Disadvantage	
• If not assembled correctly someone	
could be injured, they could then	
sue the manufacturer.	
B D P	



ENTER NUMBER OF QUESTION	DO NOT WRITE IN THIS MARGIN	
	Sports W/C	
	Advantage	
	• It allows items like the wheels	
	to be attached easily. On top	
	of this if the wheels need	
	changed they can do so	
	quickly and easily.	
	Disadvantage	
	• Standard components aren't very	
	strong so the slightest bit	
	of contact could break them	
	and then the wheelchair.	

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e)	Physiology
	The collapsible wheelchair has been influenced by this. It refers to how easily the different parts move for example, it is easy and simple to <del>bring</del> <sup>put</sup> the <del>foot</del> <sup>rest</sup> <sub>up or</sub> down
	Anthropometrics
	The width of a human has influenced of the width of the seat as the <del>34</del> width of the 95 <sup>th</sup> percentile is needed.

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	The length of the foot rest	
	was influenced by anthropometrics	
	as the the 95 <sup>th</sup> percentile's foot	
	would need to fit on it	
	The height of the wheelchair	
	would of been influenced by	
	the 5 <sup>th</sup> - 95 <sup>th</sup> percentiles height	
	so most people were at	
	a perfect height	
	for it.	

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2a	
• Vacuum forming is suitable as the packaging is a thin plastic with tapered edges	
• It is also suitable due to its complex shape/patterns	
b	
ABS	
• It is a non toxic material so will not contaminate food	
• It can be recycled and reused easily	

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	• If cleans easily if the person	
	wants to use it as storage for	
	other food.	
	C • The cost of machinery and tooling	
	would be considered because	
	they want to make as	
	much as possible	
	• Staff. Would this system <sup>require staff</sup> and	
	if so what kind of training	
	do they need to work <del>on</del> the	
	<del>the</del> machine <sup>safely</sup>	

ENTER NUMBER OF QUESTION	DO NOT WRITE IN THIS MARGIN
3a	• It allows people to see the product with the correct colours and materials
	• It can be easily modified if needed
	• Stress analysis can be performed to test materials
b	• Customer loyalty - a strong brand image can also mean that customers know your products are high quality

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• If someone who has never bought headphones before <sup>and</sup> sees a brand they know, they are more ~~less~~ likely to buy from ~~them~~ that brand

### C Trade mark

A Trade mark is something which could be used by Bose to protect their name and logo.

100%

ENTER NUMBER OF QUESTION	DO NOT WRITE IN THIS MARGIN
d	Stage A is when the product starts on the market and the adverts start trying to grow the product
	Stage B is when the product starts becoming a 'trend' and everyone starts trying to buy them
	Stage C is when the company starts making profits and try prolong the life of the product
	Stage D is when the product starts losing sales and production stops as it's not profitable



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4a	
aesthetics - <del>shape</del> , <del>colour</del> , feel,	
The movement of the red in the	
first razor is aesthetically pleasing	
as it gives the illusion that	
the razor is doing all the	
work	
The colour blue is aesthetically	
pleasing as blue gives	
connotations of calm and cool.	
The feel of the razors are	
both aesthetically pleasing in	
different in different ways	
as the first one feels soft	
in your hand while	

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the other is more rigid but feels like <sup>it has</sup> a better grip

The shape is aesthetically pleasing as it fits the shape of a hand perfectly

b working prototypes could be used as it would help show any weak points in the design they could improve.

additionally they could also help improve the movement of the ball in the first case

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	Sketch models could also have
	been used to help create
	a new different razor
	• Additionally they could also of been
	used to point out weakpoints
	to develop
	• A sketch or picture of the product
	would be included on it
	• On a product design specification
	it would show how the
	product developed

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ii	A technical specification would include a parts list with size	
	A technical specification would be is a document which showed different areas of the design and how its assembled	
b	A Questionnaire could be used to ask relevant questions about what might be needed in the design of the product	
	A user trial could also be used so the target market can use the item and say exactly	


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what is needed with design of the product.

C. They could cut down on the amount of waste material ~~and improve it~~ so that less material is needed

• Use a less harmful production system. ~~Some production systems are~~ Some production systems are harmful to the environment.

• Recycle the waste so it doesn't appear somewhere where it harms wildlife

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	* Reuse unsold products instead of purchasing more materials
6a.	If it is plastic it may say it some for abbreviations making it really easily
	* Additionally they may be marked with a triangle and number to make it easy to recycle. an example would be like 
	* Use magnet to check if its a ferrous or nonferrous metal
	* Some woods can be easily distinguished from others due to characteristics

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6b	The purpose of ribs/webs is	
	to add strength to the design	
	bosses are used to absorb and	
	spread out the pressure	
	placed on it by nuts/bolts	
	Location pins are used	
	to allow parts to move	
	whilst keeping the designs	
	together	

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C	These labels can help tell the consumer about what <sup>to</sup> do with this certain part
7	Sketching is effectively used right at the beginning when coming up with the idea
	CAD graphics could be used at the development stage to help identify weakpoints
	Preliminary graphics can be effective in coming up new and innovative ideas



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	<p>production graphics can be used to effectively show the size of different parts and how to assemble them</p>	
	<p>Promotional graphics can be used to effectively promote the product and try to get it sold</p>	
	<p>Orthographic drawing are useful for showing sizes in comparison to another</p>	
	<p>exploded views can be used to show how different parts go together and where</p>	
	<p>Isometrics can be used to help promote the product as it shows the product at a nice angle</p>	