Candidate 3 evidence

ENTER NUMBER OF QUESTION		DO NOT WRITE IN THIS MARGIN
1a)	- On the playground sand digger the nylon is suitable as it is self lubricating, this is good to make sure the bearing can continue to move freely over time.	
	- On the playground sand digger the Stainless Steel is suitable as it is resistant to corrosion, therefore wont rust even though will be outside all the time.	
	- On the playground sand digger the ABS is suitable as it has a good surface finish so will need no extra finishes and less maintainance.	
	- On the garden digger the rubber handles are suitable as it is easy to grip so children wont drop the arm during use.	
	- On the garden digger the Mild Steel (Painted) is suitable as it is tough so will withstand sudden impact and is painted to stop rusting/corrosion.	

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- On the Garden digger the polypropylene is suitable as it is chemical resistant so will be able to be cleaned and withstand weather conditions.

1b) - On the playground the stainless steel frame would be extruded this is suitable as it keeps the tube the same leaving no weak points.

- On the Garden digger the solid polypropylene seat would be injection moulded, this is suitable as it can be used over and over again and can be very detailed.

- On the garden digger the hollow ABS wheels would have been made by rotational moulding, this is suitable as it can create a hollow inside and ~~grips~~ is suitable for the material.

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1 c) - Anthropormetrics would have influenced the design of the playground digger with the height of the seat making sure it isn't too high people Cant have there feet on the floor for extra support.

- Physiology would have influenced the design of the playground digger with the weight of the arm making sure it isnt to heavy for children and is light enough to move.

- Anthropometrics would have influenced the design of the garden digger with the rubber handles, they would have a diameter so children could wrap there hand round comforthy.

- Physiology would have influenced the design of the garden digger with the wheels to make sure the wheels ~~move~~ spin easily so the digger can move around during use.

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1d) - the Playground digger has been influenced by function when deciding to make it rotate 360° and use of self lubricated material to make sure it can rotate with no extra maintains such as oiling or greasing.

- Safty has influenced the design of playground digger, making it permantly fixed stops chances of tipping over during use meaning less chance of injury.

- function has influenced the design of the garden digger, with having 4 wheels making it stable and stoping tips while children use the digger.

- Safty has influenced the design of the garden digger with use of handles stopping kids hurting hands or cutting themselves on the metals sharp corners.

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	- function has influenced the design of the garden digger with paint being used, paint added to the steel stops rust and ~~[illegible]~~ expands the diggers lifespan and makes the digger safer for long term use.	
1e)	- On the garden digger CNC could be used to up production has it makes very detailed parts and very reoccable suitable for production.	
	- Just-in-time production would make the production of the gardun digger more efficient with less storage nothing will be lost and less room needed for storage saving money.	
	- Automation would ~~[illegible]~~ improve the production of the playground digger with quicker ~~[illegible]~~ manufacture and less people needed	
	- Batch production could improve efficiency of the garden digger with no worries of wasted unsold products as you would make how many you need.	

ENTER NUMBER OF QUESTION		DO NOT WRITE IN THIS MARGIN
2a)	- thermosetting plastics are suitable as they will not melt down during use as these utensils will be used in boiling temperatures.	
	- thermosetting plastics are suitable as they can be odourless and tasteless meaning there is no after taste on food and is very hygienic.	
2b)	- Compression moulding would be suitable as it can create the shape of the utensils very quickly so is good for production.	
	- Compression moulding would be suitable as it can be done over an over again so is ideal once you get the correct mould.	

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2c) - ~~Morphological~~ analysis tables can be used to create ideas by having different colours, materials and forms in a table and can randomly try each option to find the perfect product.

- analogy can be use to generate ideas by choosing a product or item and creating designs around those items as inspiration.

3a) - a benifit of Standard components to the consumer is if something breaks it is easy to replace and to find a replacment.

- A benifit of Standard components to the consumer is the bike can be taken apart easily and put together which can be good for storage or if something is broken.

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36) - CAD would be useful whilst deciding ~~colour~~ colour and materials as designer can look through and choose there favourite and can test materials

- CAD can be a benifit as it can create orthographic drawing digitally which can help send design to manufactors

- CAD can be a benifit when creating dimention as CAD can test to make sure it works and goes together with no material wasted.

36) - Automated production means less people will be employed so there are less jobs available.

- Automated production means diffrent type of training and no more traditional methods meaning less people are capable to oporate the machinary.

ENTER NUMBER OF QUESTION | DO NOT WRITE IN THIS MARGIN

4 a) - 3D Printing can be done at any 3D printer so the design can be sent all over the world helping people create prosthetics.

- 3D printing will be cheaper than traditional method making prosthetics more affordable for those that need it.

4b)

- A user trial could be used with a prototype to test the fit and how it works and can gather the info of the public and users opinion on the looks and function.
- A questionaire could be used to discover the needs of a client and could get feedback to get colour preferances, sizes and styles.

4c i) - product design sepsification is to help designers with form and colour and could have info on how the product should look and preform. for example the product must use one colour to match style.

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4 (c) (ii) - technical specification is used to get sizes and prices and potential processes, An example is: the product must be no more than 1.5m by 1.5m.

5a) - the form of the kettle having mainly curved edges makes the kettle look modern and high tech and a good quality.

- the shape of the kettle makes it look like an old school tea pot which give customer confidence that it will work well with a good pour.

- the colour of the kettle makes it look clean and hygeinic for a good kitchen and make the kettle appealing.

- Proportion of the kettle handle is appealing as it looks to be long enough to get a good grip and very comfortable

ENTER NUMBER OF QUESTION		DO NOT WRITE IN THIS MARGIN
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5b)	- trademarks Can protect the logo's, Jingles and brandnames.	
	- Copywrite Can be used to protect writting, art and MUSIC.	
6)	- the ergonmist will work with the designer to discoss the anthopemetrics, physiologue and pyscologic whilst designing a product, they will help make Sure Size are Suitable and everything is Safe with weights and tentions.	
	- the market researcher will work with the design team and look to See What the market want and give feedback to the designer, the market researcher may Carry out first hand research with : user trips / trials, questionaires and Surveys and report back to designer with there gathered info.	

ENTER NUMBER OF QUESTION		DO NOT WRITE IN THIS MARGIN
	- th project mangers will work individual teams and will be ~~[illegible]~~ incharge of individual projects, he will set deadlines and make sure everything runs smoothly.	
7a,i)	- burning plastics can be used to identify materials, indicaters are th smell given off, th colour of flame, th melting point, if it burns or melts, these all help identify plastics.	
	- Checking th grain on woods soft woods ~~[illegible]~~ generally have straight grains.	
	- Checking th knots on woods, soft woods have much more knots than hard woods	
	- Checking colour of material metals and woods have individual colours if ~~[illegible]~~ they dont have a finish so if sanded it will be easy to tell.	

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- the finish on a product can help identify the material, for plastics some are rough and some have a shiny nice surface finish

7a ii) - manufacturing features like location pins can aid assembly as it helps line up the parts to make it easy to assemble

- manufacturing features can aid assembly by bosses and webs they can help located holes whilst helping keep a strong structure.

7b) - Manufactures can use processes that have less waste to reduce the impact on the environment and less scraps means less waste of oils and plastics.

- manufacturers can use more eco-friendly materials and reused one rather than brand new plastic, this will reduce waste and give new life to old bottles and plastics.

ENTER NUMBER OF QUESTION		DO NOT WRITE IN THIS MARGIN
	- manufacturers can use bio degradable packaging of products which would mean less one time use plastics that end up in landfills.	
	- Manufacturers can turn off machinery when not in use, this though simple would have a large impact on the environment with less emittion of gasses.	
8)	- Sketch modelling can be used in intial design stages to make a quick, cheap, model this can be used to show simple design that can't be drawn and is easy to see for all to understand.	
	- block models can be used in the refining stage to show to outer form and shape, this can give colour and design of labelling info for designers to see and refine.	

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- Prototypes Can be used in the testing and Communication Stages, it is a example of how a product would look and Can be used to Show off how a product will work.

- CAD models Can be used as refinement, testing or Communication, it Can be rendered into a poster or promographic, it Can also be used to decide materials and Colours and even Can be sent to manufacturer

- 3D printers Can be used as prototypes or Communication, these are accurate models printed through CAD, the CAD file Can be Sent all over the world to be printed anywhere, this can show exact designs of form and shape.

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- working model is used to refine and test similar to prototypes but not as refined or final, these are functional models to ensure the function is working and gives designer info on the general function and refinements he should make

- rapid prototyping can be used to communicate a design to buyers or investors and shows a detailed example of the product.

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