

# Example student responses

## Section A Q12

### Student A

Explain how Kevlar fibres are processed and arranged to give this material its unique properties.

[2 marks]

Microfibres (eg. nylon) are tightly woven by machine, uniformly; leading to tightly packed threads that are cut & tear resistant. May be coated with chemicals for fire resistance.

### Commentary

2 marks awarded, one for 'woven' and one for 'chemical treatment'.

## Student B

Explain **two** ways how just in time (JIT) production can help manufacturers improve efficiency.

[4 marks]

- 1 <sup>1</sup> No need to store materials in a warehouse (saving time & money) as <sup>the</sup> materials needed are only ordered when the order for the product has been made.
- 2 Prevents overproduction of products (which need to be stored) - wasting time, energy & money. Only the right number <sup>1</sup> of products are made when they are ordered by a customer.

## Commentary

4 marks awarded. In this example, there is some repetition (time and money), so the final mark isn't earned until further into the response.

Student C

1 6

Choose **one** of the addition processes in the table below.

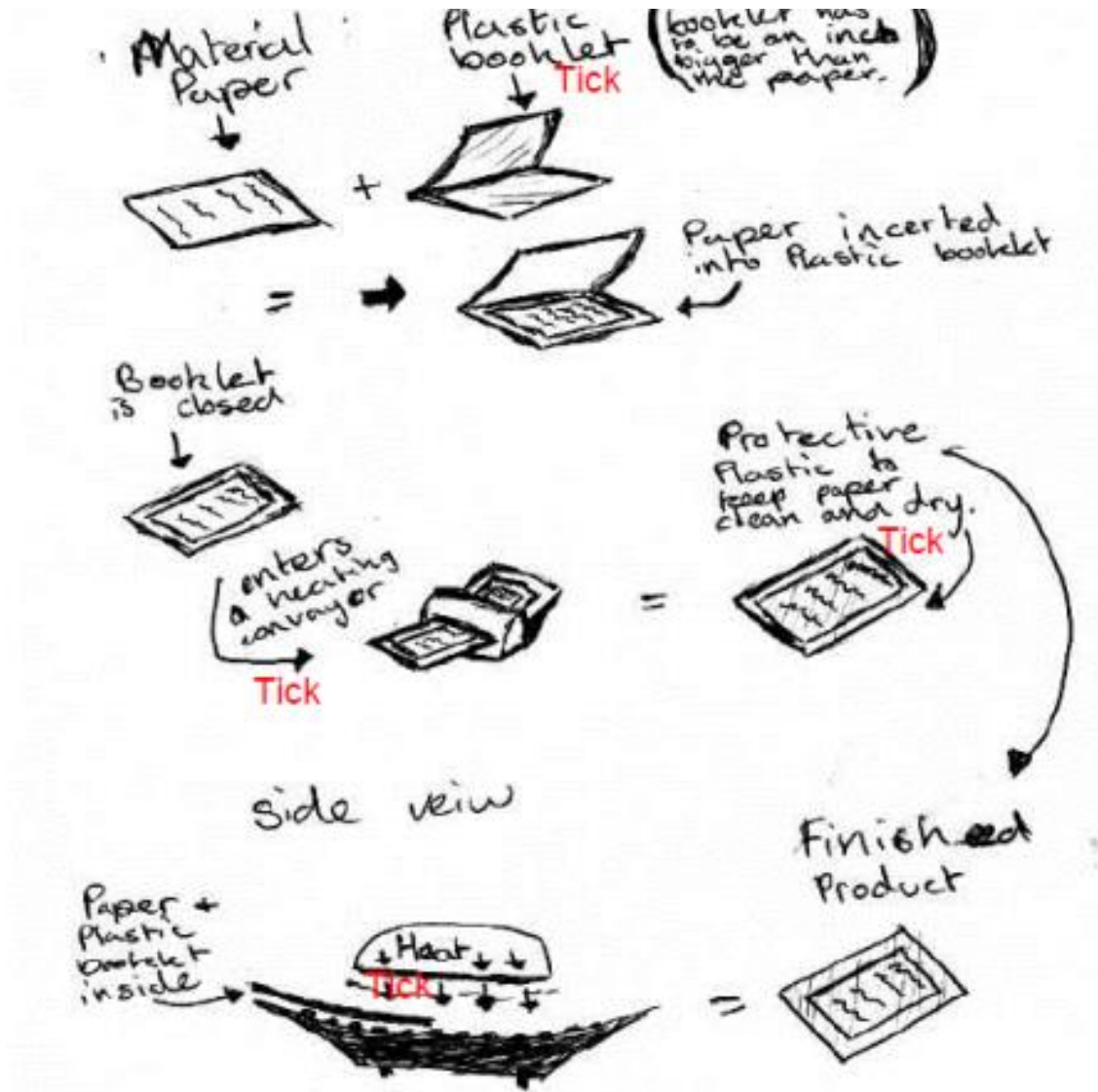
Lamination	Printing	Sewing	Soldering	Welding
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My chosen process is \_\_\_\_\_

In the box below, use notes **and** sketches to describe your chosen process.

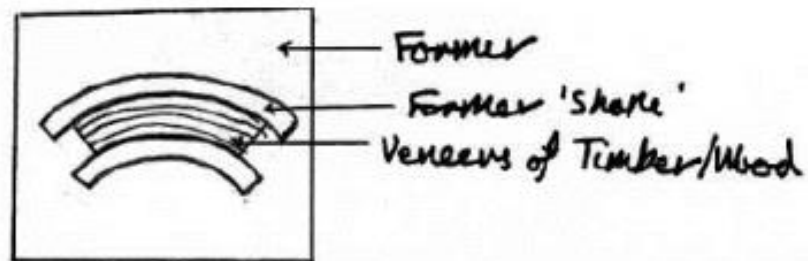
Identify the equipment used in your chosen process.

[6 marks]



Commentary

4 marks out of a possible 6 awarded for this response.



Lamination is the process by which veneers of wood are glued to one another in order to increase the overall strength or make a certain shape in the wood.

Veneers are placed with their grain direction  $90^\circ$  to one another and this helps with the overall strength and consistent quality of the wood. This is especially useful in the manufacture of laminated boards such as plywood. The veneers are often glued together and left in a clamp/former using urea formaldehyde as an adhesive.

As shown, in the diagram above a former can be used to achieve curves in the wood. These veneers follow the shape of the former, often made out of metal, and retain its shape.

#### Commentary

This response to the same question gained full marks; nb without the sketch it would have only got 5 marks.

## Section C Q21

### Student E

Analyse and evaluate the playground equipment in terms of suitability for the user.

[4 marks]

It appeals to its target market (children age 4-12) with bright, saturated colours that are exciting. It is fun with many slides, however they may be too small for a 12 year old. It also may be too childish & colourful for a 12 year old. It has a range of activities <sup>such as climbing</sup>.

### Commentary

This response met the criteria for 4 marks.

Designers often collaborate.

Discuss the importance of collaboration in creating effective design solutions.

Give examples to support your answer.

[6 marks]

Collaboration allows designers to constantly share <sup>different</sup> ideas, which can then be combined to create a more effective solution that neither designer could have come up with alone. They can also criticise & evaluate each others solutions to provide new perspectives - Dyson's hairdryers went through many iterations & prototypes to create a successful solution after working with many hair experts; <sup>& scientists</sup> analysing many different types of hair from around the world. It also helps avoid design fixation - it allows for more diverse & innovative solutions to products that differ & improve upon the existing market, such as Dyson's first bagless vacuum cleaner.

#### Commentary

5 marks awarded. An example of where the level of response mark scheme has resulted in 5 rather than the 6 marks that might have been awarded by a mark per point made system.