

**Processing Times**

Q. Using your knowledge of materials and manufacturing processes, estimate the processing time required for each production stage of your product manufacture.

Type of production stage	Production Stage	Machine Set-up time (min) {A}	Number of operations {B}	Operation time / item (min) {C}	Total operation time (min)	Production Stage time (min) {A}+{B*C}
Preparation	Cut Materials to length	0	680	5 mins	56.6 hr	56.6 hr
Process	shape - steel bars	5 mins	10x40 (400)	12 mins	80 hr	
	Square ends of wood.	0	280	8 mins	5.3 hr	
	Drill holes	2 mins	640	4 mins	42.6 hr	
	Sand surfaces	0	280	17	79.3 hr	
	Cut acrylic	0	20	10	20 hr	
	Drill holes	2 mins	120	10	20 hr	
	Finish on finishes	2	120	10	20 hr	
	clean up edge	2 mins	120	20	13.3 hr	260.5 hr
Finish	spray paint steel (3 coats)	30 min	840	4 mins	56 hr	
	Varnish Mahogany	30 mins	280	4 mins	18.6 hr	74.6 hr
Assembly	(fix wood) (fix sides)	10 mins	120	20 mins	40 hr	40 hr
Finish	glue acrylic Adjust Feet	0	80	15	10 hr	10 hr

Total Preparation = 56.6  
 Process = 260.5  
 finish = 74.6  
 Assembly = 40 ~~20~~  
 finish = 10  
 set up time = ~~20~~ 3 mins 1 hr 23 mins  
 442.6

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PREP	cut materials to consist base and polystyrene	0	120	5mins	10h	10 hours
Pre p	Make Mould	10 mins	1	3 hours	3 hours	3h 10 mins 3 hours
Pre p	Drill holes for p.c.b	5mins	40	5mins	3.3 hours	3.3 hours
Process	(base) mark out / cut out and sand	0	120	30 mins	60 hours	60 hours
Process	(case) Vacuum form	5mins	40	10	6.6 hours	6.6 hours
Process	Cutoff waste mark and drill holes.	2mins	280	1 min	4.66 hours	4.66 hours
Process	Solder circuit	5 min	40	60 min	40 hours	40 hours
Process	(Maze) Mill slots	30 min	40	30 min	20 hour	20 hours
Process	cover	0	40	5 min	3.3 hours	3.3 hours
Finish	SPRAY paint maze	0	40	3 min	2 hour	2 hours
Assembly	fit circuit	0	120	5 min	10 hour	10 hour
Assembly	fit base	0	120	5 min	2 hours	2 hours
Assanbly	fit maze and cover	0	80	1 min	1.3 hour	1.3 hours
Pre finish	clean with a soft cloth	0	40	1 min	0.64	0.64 hour

sheet number one

candle holders

# PRODUCTION SCHEDULE FOR MY PRODUCT

details of production stage	week 1		week 2		week 3									
	TUES	FRI	TUES	FRI	TUES	FRI	TUES	FRI	TUES	FRI	TUES	FRI	TUES	FRI
	Thur		Thur		Thur		Thur		Thur		Thur		Thur	
Cut steel, mahogany and acrylic to pre-determined length.	█													
Face off steel to length Taper turn spigot		█												
Square ends of mahogany on Linisher			█											
Drill necessary holes				█										
Sand Surfaces					█									
Cut corners off acrylic						█								
Drill hole Finish to grade on Linisher.							█							
clean and polish edge								█						

sheet number two

# PRODUCTION SCHEDULE FOR MY PRODUCT

details of production stage	week 3													
	TUES	FRI	TUES	FRI	TUES	FRI	TUES	FRI	TUES	FRI	TUES	FRI	TUES	FRI
	Thur		Thur		Thur		Thur		Thur		Thur		Thur	
spray paint steel		█												
Varnish Mahogany				█										
Fix mahogany to steel with self-tapping screws. Fix side face. Ghe on acrylic disc														
adjust to steady														

→ 2 small 1 hrs between the first schedule + the second schedule = 2 hrs  
 shows in the second sheet, there is a total saving of time of 6 hrs

**You need to produce a quantity of one product, from a given product specification and production plan. The product must be made from at least two components or different materials. You must also compile a portfolio to show how you:**

b used a production plan and developed a schedule for manufacture

#### ASSESSOR'S MARKING GRID

	<b>Mark band 1</b> At this level work must show:	<b>Mark range</b>	<b>Mark band 2</b> At this level work must show:	<b>Mark range</b>	<b>Mark band 3</b> At this level work must show:	<b>Mark range</b>	<b>Mark awarded</b>
<b>(b)</b> <b>AO1</b> <b>AO2</b> <b>6 marks</b>	<ul style="list-style-type: none"> <li>use of some details in a production plan and the development of an outline schedule for manufacture</li> </ul>	1 – 2	<ul style="list-style-type: none"> <li>use of the main information in a production plan and the development of a realistic schedule for manufacture</li> </ul>	3 – 4	<ul style="list-style-type: none"> <li>confident use of the main information in a production plan and the development of a detailed and effective schedule for manufacture</li> </ul>	5 – 6	<b>3</b>

#### MODERATOR COMMENTS

Chi Chi has been provided with a detailed production plan that can be followed to make the product. He has used this plan and information to analyse the resources required. It is not clear how he decided on base times from which to calculate processing times. These base times could have been identified during learning activities when he practised the required skills and noted times taken to carry out the various tasks. This information could have been recorded in a log book. The identified production stages and processing times have been combined to make a simple production schedule identifying the roles of four team members. Chi Chi has used the main information in the production plan effectively. However the schedule is of an outline nature and therefore should be awarded 3 marks since he has used the main information provided in the production plan to develop an outline schedule for manufacture.

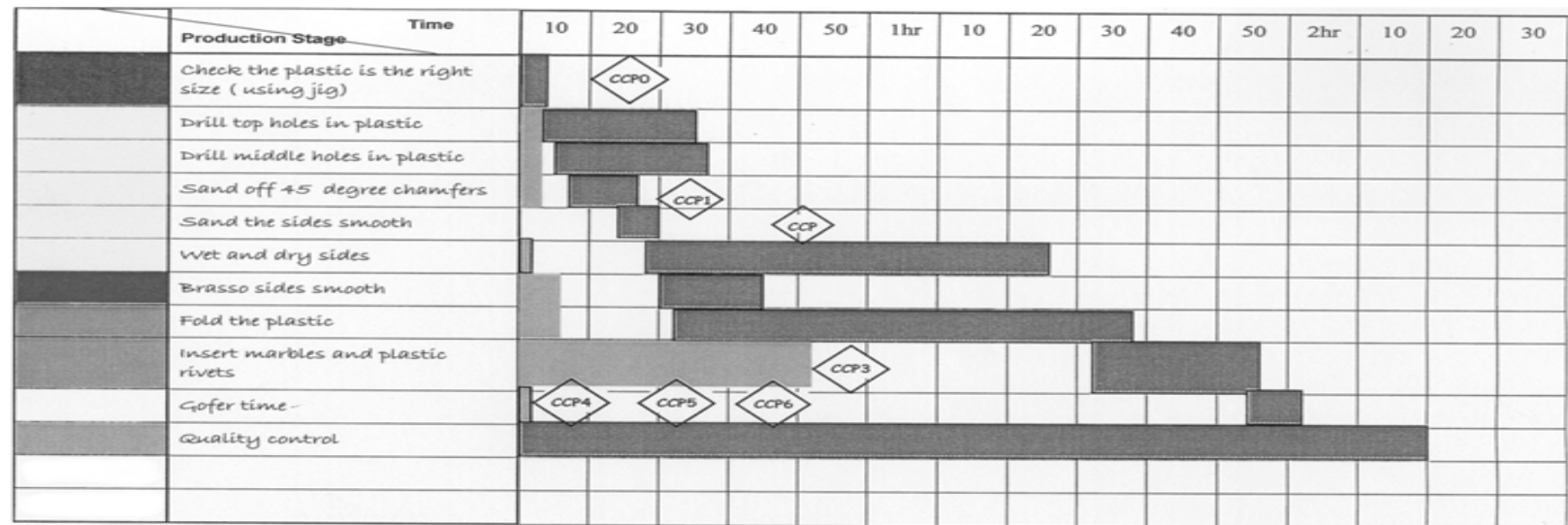
Chi Chi could have improved his mark allocation by providing a more detailed schedule that included quality control procedures and identification of critical control points on the schedule.

You need to produce a quantity of one product, from a given product specification and production plan. The product must be made from at least two components or different materials. You must also compile a portfolio to show how you:

c used quality control techniques and identified problems

DAVID'S WORK

David Gantt Chart Schedule of Manufacture



Name: \_\_\_\_\_  
 Tutor Gr: \_\_\_\_\_  
 Class: \_\_\_\_\_  
 Teacher: \_\_\_\_\_



## Task 7a

## Hand Held Game

	<b>Critical Control Point</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Cut pirana pine to length	✓	✓	✓	✓	✓	✓	✓	✓												
2	Cut plywood base to length	✓	✓	✓	✓	✓	✓	✓	✓												
3	Make mould	✓																			
4	Drill holes on P.C.B	✓	✓	✓	✓	✗	✓	✓	✓												
5	Vacuum form case	✓	✓	✓	✓	✗	✓	✓	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
6	Mark out, cut out and sand	✓	✓	✓	✓	✗	✓	✓	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
7	Cut waste, drill holes	✓	✓	✓	✓	✓	✓	✓	✓												
8	Solder circuit	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓
9	Mill slots for maze	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
10	Cut cover	✓	✓	✓	✓	✓	✓	✓	✓												
11	Fit circuit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
12	Fit base	✓	✓	✓	✓	✓	✓	✓	✓												
13	Fit maze and cover	✓	✓	✓	✓	✓	✓	✓	✓												
14	Clean with soft cloth	✓	✓	✓	✓																

QUALITY CONTROL	
NAME:	David
DATE:	12th November
CELL NO:	
CCP:	1
TYPE OF CHECK:	
FREQUENCY OF CHECK:	
PROBLEM:	Holes were mis-aligned.
REMEDY:	Repositioned jig
SIGNED:	

**Task 7A****Quality control plan.**

Manufacturing stage	Work to be done	Quality indicator	Frequency
Preparation	Cut maze to length. (pirana pine)	Check wood has no warp or splits. Check size.	1 in 5
	Cut base to length. (plywood)	Check that there is no splits. Check the base is proper size.	1 in 5 (splits) 1 in 2 (base)
	Cut polystyrene to length	Check that it's scratch free. Check size of each piece.	1 in 5 (scratches) 1 in 2 (size)
	Make mould	Check surface is damage free	All
	Drill holes	Check holes are in correct position	1 in 5
Process	Mark out, cut out and sand base	Check the base fits into the polystyrene	1 in 3
	Vacuum formed case	No scratches	All
	Cut waste, drill holes	Check holes are in correct position	1 in 5
	Solder circuit	Check components are in correct position	All
	Mill slots for maze	Make sure the slots are in the correct position	1 in 3
	Cut cover	Check that you're cutting the correct size.	1 in 2
Assembly	Fit circuit	Make sure the circuit works	All
	Fit base	Make sure it fits properly	1 in 5
	Fit maze and cover	Make sure they fit properly	1 in 5
Finish	Clean with a soft cloth		1 in 10

Critical Control Points (CCP) Table. Name David

Critical Control Point	Description	Method of Quality Control	Frequency of check	Team member
1	<i>Check Acrylic blanks are chamfered to the correct angle and measurement and holes are drilled in the right place</i>	<i>Jig</i>	<i>Everyone</i>	<i>David</i>
2	<i>Check edges are smooth after filing, Wet and dry and Brasso</i>	<i>Visual and feel</i>	<i>Everyone</i>	<i>Matt</i>
3	<i>Check Acrylic is clean of brasso etc, before it goes into the oven</i>	<i>Visual</i>	<i>Everyone</i>	<i>Leigh</i>
4	<i>After bending, check sufficient gap between two folded edges so that paper can slide</i>	<i>Check with paper</i>	<i>Everyone</i>	<i>Leigh</i>
5	<i>Check Quality of card backing after CAD/CAM cut out on Plotter</i>	<i>Visual and feel</i>	<i>One in every three</i>	<i>Daniel</i>
6	<i>Check correct number of marbles in note holder and they roll freely</i>	<i>Visual</i>	<i>Everyone</i>	<i>Craig</i>
7	<i>Final check for overall quality of Product. Add QS label.</i>	<i>Visual</i>	<i>Everyone</i>	<i>Steven and David</i>





**You need to produce a quantity of one product, from a given product specification and production plan. The product must be made from at least two components or different materials. You must also compile a portfolio to show how you:**

c used quality control techniques and identified problems

<b>ASSESSOR'S MARKING GRID</b>							
	<b>Mark band 1 At this level work must show:</b>	<b>Mark range</b>	<b>Mark band 2 At this level work must show:</b>	<b>Mark range</b>	<b>Mark band 3 At this level work must show:</b>	<b>Mark range</b>	<b>Mark awarded</b>
<b>(c) AO2 AO3 6 marks</b>	<ul style="list-style-type: none"> <li>limited use of quality control techniques to monitor production and identify problems</li> </ul>	1 – 2	<ul style="list-style-type: none"> <li>use of a range of quality control techniques to monitor production and describe the causes of problems</li> </ul>	3 – 4	<ul style="list-style-type: none"> <li>use of objective quality control techniques to monitor production and explain how to prevent problems happening again</li> </ul>	5 – 6	<b>3</b>
<b>MODERATOR COMMENTS</b>							
David has planned the quality control activities well and has listed the activities carried out. The range of quality control techniques used is rather narrow, being limited to go/not go gauge (the jig), one go test using paper as the gauge, the remainder being visual tests. David has therefore met this part of the mark band 2 criteria. Defects have been identified and the appropriate action taken has been recorded. However there has been no attempt to describe the causes of or explain how these problems may be prevented from happening again. Therefore David has not met this aspect of the mark band 2 criteria and in this instance David should be awarded 3 marks since he has used a range of quality control techniques and has identified problems.							

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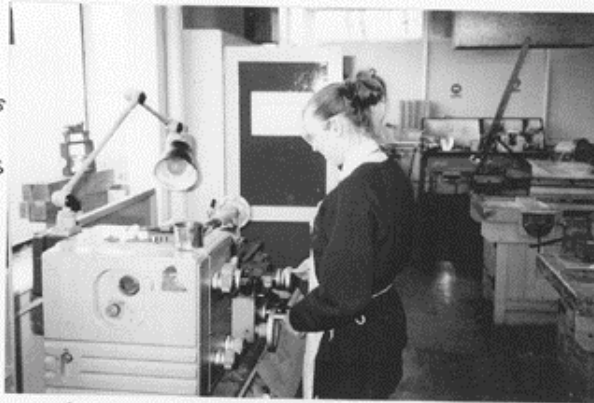
- d prepared and used materials and components safely
- e prepared and used tools, equipment (including appropriate use of ICT) and machinery safely
- f manufactured your product safely to meet requirements and conform to standards

### LAURA'S WORK

Task - This is me on the lathe making the end nuts. I am facing them off on both ends, drilling the holes and put a Chamfer on the end that wasn't drilled.

Safety - I wore safety glasses, made sure the guards were down & kept my hands away

material - the material I am using here is brass.



Problems - at first the drill bit kept coming out but that's because I didn't tighten it properly.

Tools - lathe, a drill bit and a centre drill.

Quality control - make sure the drill doesn't go all the way through the end nut.

Task - Here I am making the end nuts. I put them in the power hacksaw and let that do the rest.

Safety - once the machine was on, I had to keep away and wear goggles.

material - the end nuts are made by brass.

Tools - I used a power hacksaw to cut the end nuts because it was easier.



Quality Control - I had to check that the end nuts were the correct size and not sharp.

Problems - I had no problems doing this as it was quite simple.

## PRODUCTION MEETING

DATE 7th Feb 2002.

### NAME OF WORKERS ATTENDING MEETING

haura

Mark

Shane B

### HOW IS THE WORK PROGRESSING, A REPORT FROM EACH WORKER

Shane - all the end plates are finished and painted up to varnishing

Mark - sucking rods are all cut and most of them are threaded

haura - done half the end nuts complete just need to do another 20

## Observation Record

Candidate name: *Laura Mills*

Unit title: *Unit 2 Manufactured Products*

Candidate number: 3639

### Activity context:

This may be provided by the assessor or candidate

*The Abacus Project – Working as part of a team to produce a batch of products.*

### Assessment evidence:

Refer to the assessment grids reproduced from the specification.

*(d) prepared and used materials and components safely*

*(e) prepared and used tools, equipment and machinery safely*

### Observation notes:

Specific comments on candidate performance that demonstrates achievement of the assessment evidence.

*Laura carried out the following processes whilst undertaking this project in a team of three members:*

- *selection of materials from the materials store*
- *marking out*
- *cutting rods to required length cutting threads*
- *manufacture of nuts*
- *cutting and finishing end plates*
- *assembly.*

*The materials she prepared and used were: brass rod, MDF, steel and nylon bars.*

*The tools and equipment she used were: measuring equipment, mechanical saw, lathe, hand-sanding techniques, taps and dyes.*

*She wore appropriate clothing at all times, and goggles and dust mask where appropriate.*

*She ensured that her working area was clear at all times and that guards were in place when using the lathe. When using tools and equipment she followed safety procedures and instruction.*

*Before working in the workshop she answered questions relating to emergency equipment stop buttons and guards, first aid and personal safety and I am confident that she worked safely at all times.*

*Throughout the project Laura demonstrated some independence and required very little guidance and help. Whenever she met with problems she sought advice from either the technician or myself.*

*I consider that Laura has met the requirements of mark band 2 for preparation and use of materials and components and tools and equipment and machinery safely.*

Assessor name: *Peter Wood*

Assessor signature: *P WOOD*

Date: *17/05/0X*

## Observation Record

Candidate name: *Laura Mills*

Unit title: *Unit 2 Manufactured Products*

Candidate number: 3639

**Activity context:**

This may be provided by the assessor or candidate

*The Abacus Project – Working as part of a team to produce a batch of products.*

**Assessment evidence:**

Refer to the assessment grids reproduced from the specification.

*(f) manufactured your product safely to meet requirements and conform to standards*

**Observation notes:**

Specific comments on candidate performance that demonstrates achievement of the assessment evidence.

*Eleven of the required twelve products were to standard. One product was not of a satisfactory standard and was scrapped. There was also some wastage of unsatisfactory components.*

*Throughout the project Laura used appropriate checking procedures at the identified stages and the team held production meetings at which quality control was reviewed.*

*The equipment and techniques she used in carrying out quality checks were:*

- *ruler, patterns, internal depth gauge – measurement of dimensions and tolerance and shape checking*
- *surface finish – judgement of smoothness*

Assessor name: *Peter Wood*

Assessor signature: *P WOOD*

Date: *17/05/0X*



**You need to produce a quantity of one product, from a given product specification and production plan. The product must be made from at least two components or different materials. You must also compile a portfolio to show how you:**

- d prepared and used materials and components safely
- e prepared and used tools, equipment (including appropriate use of ICT) and machinery safely
- f manufactured your product safely to meet requirements and conform to standards

<b>ASSESSOR'S MARKING GRID</b>							
	<b>Mark band 1 At this level work must show:</b>	<b>Mark range</b>	<b>Mark band 2 At this level work must show:</b>	<b>Mark range</b>	<b>Mark band 3 At this level work must show:</b>	<b>Mark range</b>	<b>Mark awarded</b>
<b>(d) AO2 AO1 AO2 6 marks</b>	<ul style="list-style-type: none"> <li>• preparation, with guidance, of materials and components, according to some relevant production criteria, using materials safely with some skill to make a product</li> </ul>	1 – 2	<ul style="list-style-type: none"> <li>• preparation, with limited guidance, of materials and components, according to the main production criteria, using materials safely with skill to make a product</li> </ul>	3 – 4	<ul style="list-style-type: none"> <li>• independent preparation of materials and components, according to all relevant production criteria, achieving optimum and safe use of materials when making a product</li> </ul>	5 – 6	<b>4</b>

#### **MODERATOR COMMENTS**

Laura has provided a good range of annotated photographs, which provide evidence of some of the practical aspects of this unit. She has identified problems and has explained how these problems were overcome.

The Observation Record clearly identifies the degree of assistance required and the skills demonstrated.

Laura needed some assistance in specific aspects of the preparation of the materials and she worked safely throughout the preparation activities. However the Observation Record states that her level of skill was at entry level and that she recognised that she could have done better with more practise. Laura should be awarded 4 marks.

In order to meet the requirements of mark band 3 Laura would need to show more confidence in the preparation and use of other materials and components. She could also improve her marks by providing evidence that she made optimum use of the materials by the reduction of wastage.

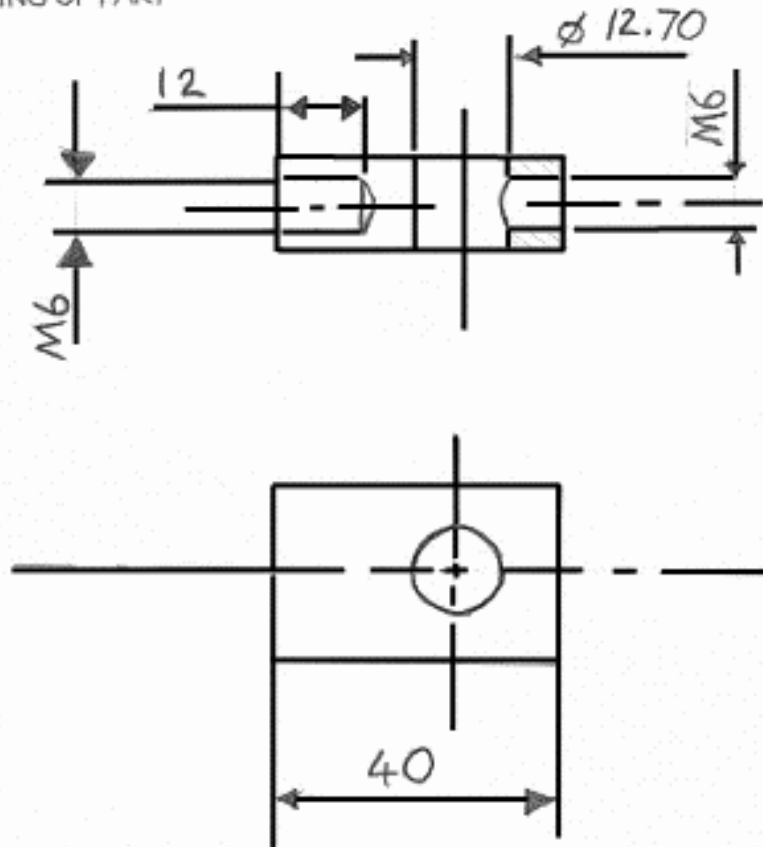
<b>ASSESSOR'S MARKING GRID</b>							
	<b>Mark band 1 At this level work must show:</b>	<b>Mark range</b>	<b>Mark band 2 At this level work must show:</b>	<b>Mark range</b>	<b>Mark band 3 At this level work must show:</b>	<b>Mark range</b>	<b>Mark awarded</b>
<b>(e) AO1 AO2 6 marks</b>	<ul style="list-style-type: none"> <li>preparation, with guidance, of tools, equipment and machinery with some skill, using them safely with some accuracy to make a product</li> </ul>	1 – 2	<ul style="list-style-type: none"> <li>preparation, with limited guidance, of tools, equipment and machinery with skill, using them safely with accuracy and some skill to make a product</li> </ul>	3 – 4	<ul style="list-style-type: none"> <li>independent and precise preparation of tools, equipment and machinery, using them safely with accuracy and skill to make a product</li> </ul>	5 – 6	<b>4</b>
<b>MODERATOR COMMENTS</b>							
<p>The annotated photographs demonstrate some achievement in preparation and use of tools, equipment and machinery. However the inclusion of the Observation Record clearly identifies the activities undertaken, the degree of success and the measure of guidance provided. Considering all of this evidence Laura should be awarded 4 marks, based on the level of skill demonstrated and the accuracy recorded by the observer.</p> <p>In order to meet the requirements of mark band 3, Laura would need to be able to demonstrate a higher degree of independence and precision in the preparation of tools, equipment and machinery.</p>							
<b>(f) AO2 AO3 6 marks</b>	<ul style="list-style-type: none"> <li>safe manufacture of the product, to meet some client requirements and to conform to some quality standards required</li> </ul>	1 – 2	<ul style="list-style-type: none"> <li>safe manufacture of the product, to meet the main client requirements and to conform to the main quality standards required</li> </ul>	3 – 4	<ul style="list-style-type: none"> <li>safe manufacture of the product, to effectively meet the main client requirements and to consistently conform to the main quality standards required</li> </ul>	5 – 6	<b>3</b>
<b>MODERATOR COMMENTS</b>							
<p>Laura has recorded some basic quality checks and the meeting of some quality standards. However there is no evidence that she systematically recorded the results of the checks. She used a limited range of techniques and although there is reference to 'Quality Control' there is little evidence of consistent conformance to the main quality standards. Her evidence and the Observation Record identify that she met the main production requirements and the products manufactured conformed to some of the required quality standards.</p> <p>Laura should be awarded 3 marks.</p> <p>In order to improve her marks, Laura would need to demonstrate the use of a wider range of techniques and a deeper knowledge and application of quality and production control. It is essential that students identify any variances from the quality standards and suggest possible causes and changes needed to prevent them from occurring again.</p>							

You need to produce a quantity of one product, from a given product specification and production plan. The product must be made from at least two components or different materials. You must also compile a portfolio to show how you:

g modified the production plan and schedule for manufacture.

### STEPHEN'S WORK

DIMENSIONED DRAWING OF PART



## My Original Planning Sheet

Planning Sheet – Desk Top Fan				Date: 18-3-0X		Tutor: Mrs Price	
Name of Part: Adjuster block							
Stage No	Process (What I will do)	Materials	Tools & Equipment	Machinery	Health & Safety	Quality Checks	Time mins
1	Mark it out	Mild steel	Scriber, ruler			Are measurements correct	2
2	Cut it out	Mild steel	Hacksaw			Is it correct size	5
3	File the burs	Mild steel	File			Is it a good finish	3
4	Hold in 3 jaw chuck		Chuck key	Lathe		Is it tight	3
5	Face end square	Mild steel	Side facing tool	Lathe	Wear a visor	Is the end square	5
6	Remove from vice		Chuck key	Lathe			2
7	Remove burs	Mild steel	File			Is it a good finish	3
8	Place in vice other way	Mild steel	Chuck key			is it a tight hold	3
9	Face to length	Mild steel	Side facing tool	Lathe	Wear a visor	Is it correct length	5
10	Remove from vice		Chuck key				2
11	Remove burs	Mild steel	File			Is it a good finish	3
12	Mark holes	Mild steel	Scriber, ruler			Are holes in correct place	3
13	Centre punch	Mild steel	Centre punch			Is the hole in the correct place	3
14	Hold in vice					Is it tight	1
15	Drill 5 mm	Mild steel	5 mm drill bit	Drilling machine	Wear a visor	Is the hole 5 mm	5
16	Drill 12.7 mm	Mild steel	12.7 mm drill bit	Drilling machine	Wear a visor	Is the hole 12.7 mm	5
17	Tap nut	Mild steel	Tap			Is the screw thread good	5



### My Modified Planning Sheet

Planning Sheet – Desk Top Fan				Date: 18-3-0X		Tutor: Mrs Price	
Name of Part: Adjuster block							
Stage No	Process (What I will do)	Materials	Tools & Equipment	Machinery	Health & Safety	Quality Checks	Time mins
1	Mark it out	Mild steel	Scriber, ruler			Are measurements correct	2
2	Cut it out	Mild steel	Hacksaw			Is it correct size	5
3	File the burs	Mild steel	File			Is it a good finish	3
4	Hold in 3 jaw chuck		Chuck key	Lathe		Is it tight	3
5	Face end square	Mild steel	Side facing tool	Lathe	Wear a visor	Is the end square	5
6	Remove from vice		Chuck key	Lathe			2
7	Remove burs	Mild steel	File			Is it a good finish	3
8	Place in vice other way	Mild steel	Chuck key			Is it a tight hold	3
9	Face to length	Mild steel	Side facing tool	Lathe	Wear a visor	Is it correct length	5
10	Remove from vice		Chuck key				2
11	Remove burs	Mild steel	File			Is it a good finish	3
12	Mark holes	Mild steel	Scriber, ruler			Are holes in correct place	3
13	Install four jaw chuck		4 jaw chuck				2
14	Fasten block in vice		Chuck key			Use a tail stock centre To get hole in right place	4
15	Centre drill	Mild steel	Centre drill	Tail stock drill carrier	Wear a visor		1
16	Drill 5 mm	Mild steel	5 mm drill bit		Wear a visor	Is the hole 5 mm	2
17	Tap hole	Mild steel	Tap			Is the screw thread good	5
18	Turn block round in Chuck	Mild Steel	Chuck key			Is block tight and square	3
19	Centre Drill	Mild Steel	Centre Drill	Tail stock drill carrier	Wear a visor		1
20	Drill 12.7 mm	Mild steel	12.7 mm drill bit		Wear a visor	Is the hole 12.7 mm	2





**You need to produce a quantity of one product, from a given product specification and production plan. The product must be made from at least two components or different materials. You must also compile a portfolio to show how you:**

g modified the production plan and schedule for manufacture.

#### ASSESSOR'S MARKING GRID

	<b>Mark band 1 At this level work must show:</b>	<b>Mark range</b>	<b>Mark band 2 At this level work must show:</b>	<b>Mark range</b>	<b>Mark band 3 At this level work must show:</b>	<b>Mark range</b>	<b>Mark awarded</b>
<b>(g) AO2 AO3 6 marks</b>	<ul style="list-style-type: none"> <li>modifications, some of which are relevant and lead to the improvement of some aspects of the production plan and schedule for manufacture in response to quality data</li> </ul>	1 – 2	<ul style="list-style-type: none"> <li>modifications, most of which are relevant and lead to the improvement of several aspects of the production plan and schedule for manufacture in response to quality data</li> </ul>	3 – 4	<ul style="list-style-type: none"> <li>modifications, all of which are relevant and lead to the improvement of significant aspects of the production plan and schedule for manufacture in response to quality data</li> </ul>	5 – 6	<b>4</b>

#### MODERATOR COMMENTS

It should be noted that the drawing provided for Stephen does not conform to standards (see Engineering Drawing Practice for Schools and Colleges) in relation to screw threads. It is important that students are set good examples at all times and drawings etc should be to relevant standards. This has not affected the marks awarded to Stephen.

Stephen has identified that the drilling and tapping activities were causing problems due to lack of expertise. He has carried out some research in order to identify possible improvements and has modified his plan and his schedule. Stephen has clearly indicated the time taken for each production stage on the planning sheets but these timings are not clear in his schedule diagrams.

Stephen should be awarded 4 marks.

In order to improve his mark Stephen would need to explain why the modifications caused an improvement to the quality.



# Appendices

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# Appendix 1 – Observation Record

Candidate name:

Unit title:

Candidate number:

**Activity context:**

This may be provided by the assessor or candidate.

**Assessment evidence:**

Refer to the assessment grids reproduced from the specification.

**Observation notes:**

Specific comments on candidate performance that demonstrates achievement of the assessment evidence.

Assessor name:

Assessor signature:

Date:





## **Appendix 2 – Observation Records**

### **What is an observation record?**

An Observation Record is a document which records statements of learner performance. It directly relates to the criteria contained within the Assessment Evidence grid included in each Unit Specification. It may confirm achievement or provide specific feedback on candidate performance against national standards.

### **Guidance on completing an observation record**

Since an Observation Record will provide primary evidence, it is essential that the recording of performance is sufficiently detailed to enable others to make a judgement as to the quality and sufficiency of candidate performance and confirm that national standards have been achieved.

Observation Records are often accompanied by supporting/additional evidence. This may take the form of visual aids, handouts, preparation notes, cue cards, diaries, logbooks, and peer assessment records. It is essential that where present, these are included in the learner evidence. Where visual aids and handouts are used, notes should be made on the Observation Record as to how these were used and their effectiveness.

The assessor of the qualification being undertaken by the candidate completes the Observation Record, and therefore must have direct knowledge of the specification to enable an accurate assessment decision to be made.

An Observation Record has greater validity than a Witness Statement since it is capable of recording an assessment decision.

All Observation Records must be signed and dated by the assessor.



## Appendix 3 – Witness Statement

Candidate name:

Unit title:

Candidate number:

**Activity context:**

Outline of the activity and its purpose. This may be written by the candidate prior to the observation.

**Assessment evidence:**

Refer to the assessment grids reproduced from the specification.

**Observation notes:**

Specific comments on candidate performance that demonstrates achievement of the assessment evidence.

Witness name:

Witness signature:

Job role:

Date:

Assessor name:

Assessor signature:

Date:



## Appendix 4 – Witness Statements

### What is a Witness Statement?

A Witness Statement is a document which records statements of learner performance. It is completed by someone other than the Assessor of the qualification. This may be someone who does not have direct knowledge of the assessment evidence, but who is able to make a professional judgement about the performance of the candidate (for example, a work placement supervisor, technician, librarian).

### Guidance on completing a Witness Statement

The quality of a Witness Statement can be greatly improved if the ‘witness’ is provided with the assessment evidence from the specification so that accurate reference can be made to this in relation to the success of learner performance. When recording details on the Witness Statement the candidate may provide a statement of context on the Witness Statement.

A Witness Statement does not confer an assessment decision. When making an assessment decision, the assessor must consider the validity of the information contained within the Witness Statement, noting the relevant professional skills of the ‘witness’, along with any other supporting evidence, before making a final judgement.

As Witness Statements are often used to record practical performance, especially in the workplace, it is important that the person responsible for the completion of the document is identified by the Assessor at the outset.

All Witness Statements should be signed and dated by the ‘witness’ together with clear details of their job role.

It is the assessor’s responsibility to ensure the authenticity of Witness Statements. It may be helpful to collect specimen signatures. A telephone call to thank the witness for providing evidence may also provide evidence of the authenticity of the Witness Statement.

Witness Statements which are to be taken into consideration for assessment purposes must also be signed and dated by the assessor.

Opportunities for the submission of additional Witness Statements should be encouraged as this provides further evidence of learner performance, for example where candidates have taken part in more than one work placement.





# Appendix 5 – Edexcel GCSE in Manufacturing (Double Award) Unit 1 Mark Record Sheet

Centre no:	Centre name:	Internal moderator name:		
Candidate no:	Candidate name:	Resubmission of work	All/mostly amended	
Series number			Some amendments	
			No amendments	

Unit 1: Designing Products for Manufacture						
Assessment evidence	Annotation and page number	Mark Band			Centre mark	Edexcel use only
		1	2	3		
a an analysis of the client design brief and information about key features		1 – 2	3 – 4	5 – 6		
b details of the product design and material constraints		1 – 2	3 – 4	5 – 6		
c details of production requirements and quality standards		1 – 2	3 – 4	5 – 6		
d a range of design ideas and evidence of testing them		1 – 2	3 – 4	5 – 6		
e evidence of how you tested and justified your final solution		1 – 2	3 – 4	5 – 6		
f evidence of how you selected and used presentation techniques		1 – 2	3 – 4	5 – 6		
g evidence of how you responded to external feedback and modified your design proposal		1 – 2	3 – 4	5 – 6		
<b>Final total</b>						

<b>Edexcel moderator use only</b>		
Number:	Name:	Signature:



# Appendix 6 – Edexcel GCSE in Manufacturing (Double Award) Unit 2 Mark Record Sheet

Centre no:	Centre name:	Internal moderator name:
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Candidate no:	Candidate name:	<b>Resubmission of work</b>	All/mostly amended	
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Series number			No amendments	
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## Unit 2: Manufactured Products

Assessment evidence	Annotation and page number	Mark Band			Centre mark	Edexcel use only
		1	2	3		
a worked as part of an effective team		1 – 2	3 – 4	5 – 6		
b used a production plan and developed a schedule for manufacture		1 – 2	3 – 4	5 – 6		
c used quality control techniques and identified problems		1 – 2	3 – 4	5 – 6		
d prepared and used materials and components safely		1 – 2	3 – 4	5 – 6		
e prepared and used tools, equipment (including appropriate use of ICT) and machinery safely		1 – 2	3 – 4	5 – 6		
f manufactured your product safely to meet requirements and conform to standards		1 – 2	3 – 4	5 – 6		
g modified the production plan and schedule for manufacture		1 – 2	3 – 4	5 – 6		
<b>Final total</b>						

<b>Edexcel moderator use only</b>		
Number:	Name:	Signature:

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