WJEC Level 1/2 Vocational Award in Engineering (Technical Award)

SAMPLE ASSESSMENT MATERIALS

UNIT 1

For teaching from 2022

For award from 2024

Contents

Unit 1: Manufacturing Engineering Products Assignment
SAMPLE ASSESSMENT MATERIALS
Assessment time: 20 Hours

INSTRUCTIONS FOR CANDIDATES

Read the brief carefully prior to starting the assignment.

You will gain marks for key tasks that are completed in the Assessment window. The total time allocated for assessed tasks will be 20 hours. This is outlined clearly in the brief.

Your work should include knowledge and understanding gained from classroom teaching.

Read the information and assignment tasks carefully to make sure you understand what is needed.

It is important that you work independently from other candidates and make sure the work you produce is your own unaided work.

Check your work carefully to make sure that it is accurate and correct and meets assessment requirements.

INFORMATION FOR CANDIDATES

You and your teacher will be required to sign a declaration that all work presented is the work of you alone.

You must not discuss or share any details of the case studies or tasks.

WJEC/Eduqas Level 1/2 Vocational Award in Engineering (Technical Award)

Unit 1 Manufacturing Engineering Products

Controlled Assessment

Sample Assessment Brief

You are an employee of a small engineering firm. Your firm has been asked to produce a prototype of a desktop tripod that can be used with any type of mobile phone. The tripod will be used when taking professional pictures, as well as for animation and for use during online video meetings and calls.

Your client is 'Out of this World Computers', a leading European specialist in electrical and communication products. They have requested a working prototype of the tripod to be produced to test for function and usability before they go into full-scale manufacturing.

To support you in the manufacture of the prototype, 'Out of this World Computers' have provided you with technical information and full, detailed engineering drawings of their design solution.

Your role as an engineer is to:

- interpret the provided information (the engineering drawings and data packs)
- plan the stages of manufacture including the selection of necessary tools, equipment and materials
- produce each of the required component parts based on the facilities and equipment available to you
- evaluate the quality of the completed engineering product and make suggestions for improvements.

Assignment Tasks

Unit content	Tasks:		Evidence Required	Time	Controls	AOs	Marks
1.1.1 1.1.2	1a	Examine the provided engineering information to: • identify the key parts and/or components to be manufactured • analyse the required key information to manufacture the engineered product prototype.	Written documents showing key information and justifying any decisions. May also include sketches and notes either in the main document or on support material supplied to the candidate.	2.5hrs	Supervision: Direct Guidance: Indirect Resources: Not permitted Collaboration: Not permitted	AO1 AO3	4 6
1.1.3	1b	Collate the technical information needed to produce the engineered product in the workshop, including parts and/or components needed to complete the assembly to the given manufacturing specification.				AO1	4
1.2.1 1.2.2 1.2.3	2a	Select: • suitable materials to manufacture the component parts from the engineering information, including identifying material stock and stock sizes • necessary tools and equipment to manufacture the component parts from the engineering information to begin manufacturing.	Written report which should include: • tables and charts, either by hand or digitally produced • risk assessment of key stages.	3.5hrs	Supervision: Direct Guidance: Indirect Resources: Not permitted Collaboration: Not permitted	AO2	10
1.2.4 1.2.5	2b	Using the provided engineering information, plan the stages of manufacturing component parts. Within this, you should: • collate information into a time plan for the stages of manufacture • make contingency plans for potential unforeseen situations • present detailed information in a way that would allow a third party to manufacture the engineered product.				AO2	10
1.3.3	2c	Assess the potential risks for the main manufacturing stages involved in the production of the engineered prototype and recommend health and safety control measures to counter those risks.				AO3	6

1.3.1 1.3.2 1.3.3	3	Produce an engineering outcome based on the details and data provided. You must: • use a range of engineering tools safely and effectively to manufacture the main parts and components of the engineered design prototype • use a range of engineering equipment safely and effectively to manufacture the main parts and components of the engineered design prototype • implement safe working practices and apply appropriate use of PPE during the entire manufacturing process.	• Workshop diary • Photographic evidence • The final outcome (showing effective use of a range of engineering tools, equipment, processes and materials) • Teacher Observation Record	12hrs	Supervision: Indirect Guidance: Indirect Resources: Permitted Collaboration: Not permitted	AO2	16
1.4.1 1.4.2	4a	In the production of your engineering outcome, you must: • apply skills in a range of engineering processes • use a range of suitable materials.				AO2	12
1.4.3 1.4.4	4b	Write a report that: • evaluates the quality of the final prototype against the criteria given in the engineering drawings and manufacturing specification • evaluates your own practices and processes • suggests improvements where appropriate.	Written report	2hrs	Supervision: Indirect Guidance: Direct Resources: Not permitted Collaboration: Not permitted	AO3	12
						Total Marks	**80**

Guide to Controls

There are a number of different aspects that are controlled within the internal assessment of our vocational awards. These are:

- supervision
- guidance
- resources
- collaboration.

Redrafting

Re-drafting is allowed within the time of the controlled assessment and without teacher feedback.

Time

The total time allocated for assessed tasks is 20 hours. Candidates cannot exceed this time. Unit 1 tasks feature recommended timings that are for guidance only. Centres should discourage candidates from exceeding the recommended times or devoting insufficient time to this work.

Supervision

Two levels of supervision feature throughout the Unit 1 assessment:

Direct supervision	The use of resources is tightly prescribed. The centre must ensure that: • all candidates are within direct sight of the supervisor throughout the session(s) • display materials which might provide assistance are removed or covered • there is no access to e-mail, the internet or mobile phones • candidates complete their work independently • interaction with other candidates does not occur • no assistance of any description is provided. Candidates' work must remain within the centre at all times and must be stored securely between timetabled sessions. Where direct supervision is specified, the centre must ensure that the JCQ No Mobile Phone poster and JCQ Warning to Candidates is displayed.
Indirect supervision	Candidates do not need to be directly supervised at all times. The centre must ensure that: • all candidates participate in the assessment • there is sufficient supervision to ensure that work can be authenticated • the work an individual candidate submits for assessment is his/her own. Candidates' work must remain within the centre at all times and must be stored securely between timetabled sessions.

Guidance

Two levels of guidance feature throughout the Unit 1 assessment:

Category of Advice/Feedback:	Direct	Indirect
Teachers can:		
Review candidates' work and provide oral and written advice at a **general** level in order to secure a functional outcome.	X	✓
Evaluate progress to date and propose broad approaches for improvement.	X	X
Provide detailed specific advice on how to improve drafts to meet assessment criteria.	X	X
Give detailed feedback on errors and omissions which leave candidates with no opportunity to show initiative themselves.	X	X
Intervene personally to improve the presentation or content of work.	X	X

Resources

Two levels of resources feature throughout the Unit 1 assessment:

Not permitted	The use of resources is not allowed. Access to the Internet is not permitted. Candidates' work must remain within the centre at all times and must be stored securely between timetabled sessions. If the specification allows candidates to bring their own computers or other electronic devices into formally supervised sessions, appropriate checks must be carried out to ensure that all materials stored on the devices is permissible and that access to the internet is disabled.
Permitted	Candidates have access to resources and/or preparatory notes as directed by the brief or unit guidance. Candidates' work must remain within the centre at all times and must be stored securely between timetabled sessions. Centres should refer to specifications or subject-specific guidance.

Where the level of control is 'permitted', candidates' notes are limited as follows:

Task:	Resources permitted:
3	Any resources necessary to support the safe use of tools, equipment and materials

Collaboration

One level of collaboration features in the Unit 1 assessment:

Not permitted	Candidates should not collaborate in any way during the task.

Mark scheme

Guidance

Assessment grids for Controlled Assessment Unit 1

Generic marking principles

- Marks awarded are always whole marks (not half marks, or other fractions).
- Answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.
- Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).
- Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Banded mark schemes

Banded mark schemes are divided so that each band within a section has a relevant descriptor. The descriptor for the band provides a description of the performance level for that band. Each band contains marks.

Before marking, assessors should first read and annotate a candidate's work to pick out the evidence that is being assessed. Once the annotation is complete, the mark scheme can be applied. This is done as a two-stage process.

Stage 1 – Deciding on the band

Beginning at the lowest band, assessors should look at the appropriate section of the candidate's work and check whether it matches the descriptor for that section's mark band. If the descriptor at the lowest band is satisfied, assessors should move up to the next band and repeat this process for each band until the descriptor matches the work.

If a candidate's work covers different aspects of different bands within the mark scheme, a 'best fit' approach should be adopted to decide on the band and then the candidate's work should be used to decide on the mark within the band. For instance, if work is mainly in band 2 but with a limited amount of band 3 content, the work would be placed in band 2, but the mark awarded would be close to the top of band 2 as a result of the band 3 content.

Assessors should not seek to mark candidates down as a result of small omissions in minor areas of their work.

Stage 2 – Deciding on the mark

Once the band has been decided, assessors can then assign a mark. WJEC will provide exemplar work already awarded a mark, and this should be used as reference material when assessing the work.

When marking, assessors can use these examples to decide whether a candidate's work is of a superior, inferior or comparable standard to the example. Assessors are reminded of the need to revisit the work as they apply the mark scheme in order to confirm that the band and the mark allocated is appropriate to the work submitted.

Where work is not creditworthy, that is, contains nothing of any significance to the project, or has been omitted, no marks should be awarded.

Internal standardisation

It is essential that where there is more than one teacher in a centre, work from all teaching groups is standardised internally. This is to ensure that the final assessment reflects a single agreed standard for all teaching groups involved. All centres will receive detailed feedback from moderation via the secure web site on results day.

Differentiation within our mark schemes

The following grid demonstrates our starting point to formulating our mark schemes. These are used in order to ensure differentiation between our bands. Mark schemes will use this table as the basis for the assessment of each question but will reflect the specific demands of the question.

Band Descriptor	AO1	AO2	AO3
Excellent	• Aware of a wide range of detailed and accurate knowledge. • Demonstrates fully developed understanding that shows relevance to the demands of the question. • Effective and precise use of terminology.	• Knowledge and understanding is consistently applied to the context of the question/task. • Practical skills are consistently and effectively applied and are of a high standard. • Is able to form a fully developed and thorough interpretation that is fully accurate.	• Analysis and evaluation skills are used in a highly effective way. • Evidence is selected to construct an effective and balanced argument. • Detailed and substantiated evaluation that offers secure judgements leading to rational conclusions.
Very Good	• Has a range of detailed and accurate knowledge. • Demonstrates well developed understanding that is relevant to the demands of the question. • Precise use of terminology.	• Knowledge and understanding is applied to the context of the question/task. • Practical skills are effectively applied and are of a high to medium standard. • Is able to form a developed interpretation that is mostly accurate.	• Analysis and evaluation skills are used in an effective way. • Evidence is selected to construct a developed argument, that may not be presented in equal measure. • Detailed evaluation that offers generally secure judgements, with some link between rational conclusions and evidence.
Good			
Satisfactory	• Includes accurate knowledge. • Demonstrates sound understanding that is relevant to the demands of the question/task • Generally precise use of terminology.	• Knowledge and understanding is mainly applied to the context of the question/task. • Practical skills are appropriately applied and are of a medium standard. • Is able to form a sound interpretation that is generally accurate.	• Analysis and evaluation skills are used in an appropriate and sound way. • Evidence is selected to construct a sound argument OR • Evidence is selected to construct a detailed one-sided argument. • Evaluation that offers some judgements, with some link between conclusions and evidence.

Basic	• Shows some accurate knowledge. • Demonstrates partial understanding that is relevant to the demands of the question. • Some use of appropriate terminology.	• Knowledge and understanding is partially applied to the context of the question/task. • Practical skills are of a medium to low-level standard. • Is able to form some interpretation that shows some accuracy.	• Analysis and evaluation skills are used in a suitable way with a sound level of competence but may lack precision. • Evidence is selected to construct a one-sided argument • Evaluation that offers generalised judgements and conclusions, with minimal use of evidence.
Limited	• Limited knowledge with some relevance to the topic or question. • Little or no development seen. • Very little or no use of terminology.	• Knowledge and understanding is applied in a minimal manner to the context of the question/task. • Practical skills are of a low-level standard. • Can only form a simple interpretation, if at all, with very limited accuracy.	• Analysis and evaluation skills are used with limited competence. • Unsupported evaluation that offers simple or no judgements/conclusions.

When you look at each of our mark schemes, each band has a sequence of performance descriptors. The descriptors work like a ladder: from a bottom rung, to a top. The lower level band 'Limited' is the simplest descriptor in terms of candidates' performance. The descriptors progress through the grid to the more challenging aspect of that assessment objective. It's important to note that not all questions will use every bullet point listed in the table above, however candidates should demonstrate **all of the requirements** that are included in the published mark schemes in order to achieve full marks at a particular level. If a candidate gets full marks at a particular level, markers should see whether they're also demonstrating any of the requirements from the next level up. Often candidates will achieve some of the descriptors at one level, but not all of them. In this case, apply a best fit principle.

Further information on how the mark schemes for our Vocational Awards have been constructed, including information on the use of the mark bands for Excellent, Very Good and Good can be found in the Vocational Awards Administration Guide.

Task 1(a)

Examine the provided engineering information to:

- ***identify the key parts and/or components to be manufactured***
- ***analyse the required key information to manufacture the engineered product prototype.*** ***[10 marks]***

AO1	AO1	AO2	AO3	Total marks
Award **four** marks for identifying all key components of the engineered product. An excellent understanding of key engineering information about manufacturing requirements needed to produce the product is evident. Award **three** marks for identifying most key components of the engineered product. A good understanding of key engineering information about manufacturing requirements needed to produce the product is evident. Award **two** marks for identifying some of the key components of the engineered product. A basic understanding of the key engineering information about manufacturing requirements needed to produce the product is evident. Award **one** mark for identifying a limited number (fewer than two) of the key components of the engineered product. A limited understanding of the key engineering information about manufacturing requirements needed to produce the product is evident.	4	-	6	10

Band	AO3: *Analyse and evaluate information, making reasoned judgements and presenting conclusions.*
3	**5-6 marks** A very good response which demonstrates: • highly effective and detailed analysis of the engineering drawings • fully considered judgements about the key information and requirements needed to manufacture the required prototype accurately supported by evidence.
2	**3-4 marks** A good response which demonstrates: • detailed analysis of the engineering drawings • judgements about the key information and requirements needed to manufacture the required prototype supported by evidence.
1	**1-2 marks** A basic response which demonstrates: • some analysis of the engineering drawings • judgements about the key information and requirements needed to manufacture the required prototype that may be general or not supported by the evidence.
	0 marks Response not creditworthy or not attempted.

Task 1(b)

Collate the technical information needed to produce the engineered product in the workshop, including parts and/or components needed to complete the assembly to the given manufacturing specification. *[4 marks]*

AO1	AO1	AO2	AO3	Total marks
Award **four** marks for excellent knowledge and understanding of how to present information that has been extracted from the drawing that is accurate, appropriate and fully detailed. Award **three** marks for good knowledge and understanding of how to present information that has been extracted from the drawing that is mostly accurate, appropriate and detailed. Award **two** marks for basic knowledge and understanding of how to present information that has been extracted from the drawing that is partially accurate and mostly appropriate. Award **one** mark for limited knowledge and understanding of how to present information that has been extracted from the drawing that contains obvious errors.	4	-	-	4

Task 2(a) *Select:* • *suitable materials to manufacture the component parts from the engineering information, including identifying material stock and stock sizes* • *necessary tools and equipment to manufacture the component parts from the engineering to begin manufacturing.* *[10 marks]*	
	AO2: *Apply skills (including practical skills), knowledge and understanding in a variety of contexts and in planning and carrying out investigations and tasks.*
4	9-10 marks An excellent response which demonstrates: • an effective and detailed interpretation of evidence that is accurate and presented to a very high standard • identification of material stock and stock sizes for components that are accurate • selection of materials, equipment and tools that are wholly appropriate.
3	6-8 marks A good response which demonstrates: • a detailed interpretation of evidence that is mostly accurate and presented to a high standard • identification of material stock and stock sizes for components that are mostly accurate • selection of materials, equipment and tools that are mostly appropriate.
2	3-5 marks A basic response which demonstrates: • an interpretation of evidence that is partially accurate and presented with some errors • identification of material stock and stock sizes for components that are partially accurate • selection of materials, equipment and tools that are partially appropriate.
1	1-2 marks A limited response which demonstrates: • an interpretation of evidence that is limited in its accuracy and its quality of presentation • identification of material stock and stock sizes for components that have several obvious errors • selection of materials, equipment and tools that may not be appropriate.
	0 marks Response not creditworthy or not attempted.

Task 2(b)

Using the provided engineering information, plan the stages of manufacturing component parts.

Within this, candidates should:

- *collate information into a time plan for the stages of manufacture*
- *make contingency plans for potential unforeseen situations*
- *present detailed information in a way that would allow a third party to manufacture the engineered product.*

[10 marks]

	AO2: *Apply skills (including practical skills), knowledge and understanding in a variety of contexts and in planning and carrying out investigations and tasks.*
4	**9-10 marks** An excellent response which demonstrates: • a highly effective plan for manufacture • information that is accurate and detailed, covering all steps of the processes involved in making • a detailed and realistic time plan for manufacture • effective consideration of the necessity for contingency planning.
3	**7-8 marks** A good response which demonstrates: • an effective plan for manufacture • information that is detailed, covering most steps of the processes involved in making • a detailed time plan for manufacture • consideration of the necessity for contingency planning.
2	**4-6 marks** A basic response which demonstrates: • a plan for manufacture • information that has some detail, covering the basic steps of the processes involved in making • a simple time plan for manufacture • some consideration of the necessity for contingency planning.
1	**1-3 marks** A limited response which demonstrates: • a limited plan for manufacture • information that covers simple steps of the processes involved in making, but lacking in many details • a partially accurate time plan for manufacture • minimal consideration of the necessity for contingency planning.
	0 marks Response not creditworthy or not attempted.

Task 2(c) *Assess the potential risks for the main manufacturing stages involved in the production of the engineered prototype and recommend health and safety control measures to counter those risks.* *[6 marks]*	
Band	AO3: *Analyse and evaluate information, making reasoned judgements and presenting conclusions.*
3	5-6 marks A very good response which demonstrates: • fully considered assessment of the potential risks at every manufacturing stage • fully developed and detailed recommendations for health and safety control measures to counter the risks identified.
2	3-4 marks A good response which demonstrates: • considered assessment of the potential risks at most of the manufacturing stages • detailed recommendations for health and safety control measures to counter the risks identified.
1	1-2 marks A basic response which demonstrates: • some assessment of the potential risks at some of the manufacturing stages • some recommendations for health and safety control measures to counter the risks identified.
	0 marks Response not attempted or not creditworthy.

Task 3

Produce an engineering outcome based on the details and data provided.

Candidates must:

- *use a range of engineering tools safely and effectively to manufacture the main parts and components of the engineered design prototype*
- *use a range of engineering equipment safely and effectively to manufacture the main parts and components of the engineered design prototype*
- *implement safe working practices and apply appropriate use of PPE during the entire manufacturing process.* *[16 marks]*

Band	AO2: *Apply skills (including practical skills), knowledge and understanding in a variety of contexts and in planning and carrying out investigations and tasks.*
4	14-16 marks An excellent response which demonstrates: • a highly accurate outcome is produced • manufacturing is undertaken using tools and equipment with a highly effective demonstration of skills applied to all processes • the final outcome has a very high quality finish and is fully completed and assembled. Sizes are all within tolerance of the engineering information provided • manufacturing was undertaken independently with no assistance or intervention needed • wholly appropriate safe working practices and wholly appropriate use of PPE were applied throughout the stages of the manufacturing process.
3	9-13 marks A good response which demonstrates: • an accurate outcome is produced with few errors • manufacturing is undertaken using tools and equipment with an effective demonstration of skills applied to all processes • the final outcome has a high quality finish and is fully completed and assembled. Sizes are mostly within tolerance of the engineering information provided • manufacturing was undertaken with minimal assistance or intervention needed • appropriate safe working practices and appropriate use of PPE were applied throughout the stages of the manufacturing process.

2	**4-8 marks** A basic response which demonstrates: • an outcome is produced that is mostly accurate with some errors • manufacturing is undertaken using tools and equipment with a demonstration of skills applied to some processes • the final outcome has a low quality finish and is mostly completed and assembled. Sizes are slightly out of tolerance of the engineering information provided • manufacturing was undertaken with some assistance or intervention needed • mostly appropriate safe working practices and mostly appropriate use of PPE were applied throughout the stages of the manufacturing process.
1	**1 -3 marks** A limited response which demonstrates: • an outcome is produced that contains several errors • manufacturing is undertaken using tools and equipment with minimal demonstration of skills • the final outcome has low quality finish and is partially completed and assembled. Sizes are mostly out of tolerance of the engineering information provided • manufacturing was undertaken with a frequent assistance or intervention needed • some appropriate safe working practices and some appropriate use of PPE were applied throughout the stages of the manufacturing process.
	0 marks Response not credit worthy or not attempted.

Task 4(a)

In the production of their engineering outcome, candidates must:

- *apply skills in a range of engineering processes*
- *use a range of suitable materials.* *[12 Marks]*

Band	AO2: *Apply skills (including practical skills), knowledge and understanding in a variety of contexts and in planning and carrying out investigations and tasks.*
4	**11-12 marks** An excellent response which demonstrates that: • a wide range of engineering processes were undertaken with a fully developed level of skill • selected processes show a fully developed and thorough understanding of the expected performance limits of the brief • a range of suitable materials are used to manufacture the engineered product which fully meet the requirements of the manufacturing specification • the selected materials are wholly appropriate to meet the performance requirements of the brief and manufacturing specification.
3	**7-10 marks** A very good response which demonstrates that: • a range of engineering processes were undertaken with a developed level of skill • selected processes show a developed understanding of the expected performance limits of the brief • a range of suitable materials are used to manufacture the engineered product which mostly meet the requirements of the manufacturing specification • the selected materials are appropriate to meet the performance requirements of the brief and manufacturing specification.
2	**3-6 marks** A basic response which demonstrates that: • some engineering processes were undertaken with an appropriate level of skill • selected processes show a some understanding of the expected performance limits of the brief • some suitable materials are used to manufacture the engineered product which partially meet the requirements of the manufacturing specification • the selected materials are mostly appropriate to meet the performance requirements of the brief and manufacturing specification.

1	**1-2 marks** A limited response which demonstrates that: • a minimal number of engineering processes were undertaken with an appropriate level of skill • selected processes show a minimal understanding of the expected performance limits of the brief • few suitable materials are used to manufacture the engineered product which minimally meet the requirements of the manufacturing specification • the selected materials are limited in their appropriacy to meet the performance requirements of the brief and manufacturing specification.
	0 marks Response not credit worthy or not attempted.

Task 4b

Candidates must write a report that:

- *evaluates the quality of the final prototype against the criteria given in the engineering drawings and manufacturing specification*
- *evaluates candidate's own practices and processes*
- *suggests improvements where appropriate.* *[12 marks]*

Band	AO3: *Analyse and evaluate information, making reasoned judgements and presenting conclusions.*

4	11-12 marks
	An excellent response which demonstrates:
	• a highly effective evaluation of the completed construction task against:
	  • the quality of the final prototype against the criteria given in the engineering drawings and manufacturing specification
	  • the learner's own practices and processes
	• a wide range of fully considered suggestions for improvements to the completed task and working methods adopted.

3	7-10 marks
	A good response which demonstrates:
	• an effective evaluation of the completed construction task against:
	  • the quality of the final prototype against the criteria given in the engineering drawings and manufacturing specification
	  • the learner's own practices and processes
	• a range of considered suggestions for improvements to the completed task and working methods adopted.

2	3-6 marks
	A basic response which demonstrates:
	• some evaluation of the completed construction task against:
	  • the quality of the final prototype against the criteria given in the engineering drawings and manufacturing specification
	  • the learner's own practices and processes
	• some suggestions for improvements to the completed task and working methods adopted.

1	**1-2 marks**
	A limited response which demonstrates:
	• minimal evaluation of the completed construction task against:
	  • the quality of the final prototype against the criteria given in the engineering drawings and manufacturing specification
	  • the learner's own practices and processes
	• few, if any, suggestions for improvements to the completed task and working methods adopted.

	0 marks Response not credit worthy or not attempted.

Assessment Criteria

Task			Mark Allocation																	
			Section														Total	AO1	AO2	AO3
			1.1.1	1.1.2	1.1.3	1.2.1	1.2.2	1.2.3	1.2.4	1.2.5	1.3.1	1.3.2	1.3.3	1.4.1	1.4.2	1.4.3	1.4.4				
1	a		4	6														10	4		6
	b				4													4	4		
2	a					10												10		10	
	b								10									10		10	
	c												6					6			6
3											16							16		16	
4	a													12				12		12	
	b															12		12			12
																	Total	80	8	48	24

Appendix A

Unit 1: Manufacturing Engineering Products (Tasks 3 and 4a)

Teacher Observation Record

Centre number:	
Candidate number:	
Assessor name:	

Purpose

The purpose of this form is to inform the moderator/examiner where specific credit has been given to the candidate and to indicate where evidence can be found within the documentation that is sent to the board.

Please do not just copy the assessment criteria as this will not be sufficient to indicate how credit has been awarded.

Objectives	Assessor Comments
Effective use of a range of engineering tools to manufacture the main parts and components of the engineered design prototype. • How many tools have been used effectively? • How effective is the use of the tools?	
Use of a range of engineering equipment to manufacture the main parts and components of the engineered design prototype. • What equipment has been used? • How effective is the use of the equipment?	

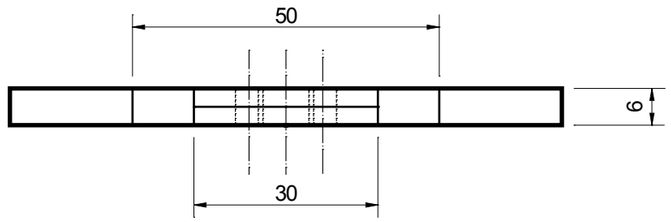
Implementation of safe working practices and apply appropriate use of PPE during the entire manufacturing process.	
Application of apply skills in a range of engineering processes. • What skills have been demonstrated? • How effective is the use of the equipment?	
Use a range of suitable materials used to manufacture the engineered product which fully meet the requirements of the manufacturing specification. • How many materials have been used? • How appropriate are the materials used?	
Assessment Summary:	
Marks awarded:	
Assessor signature:	Date:

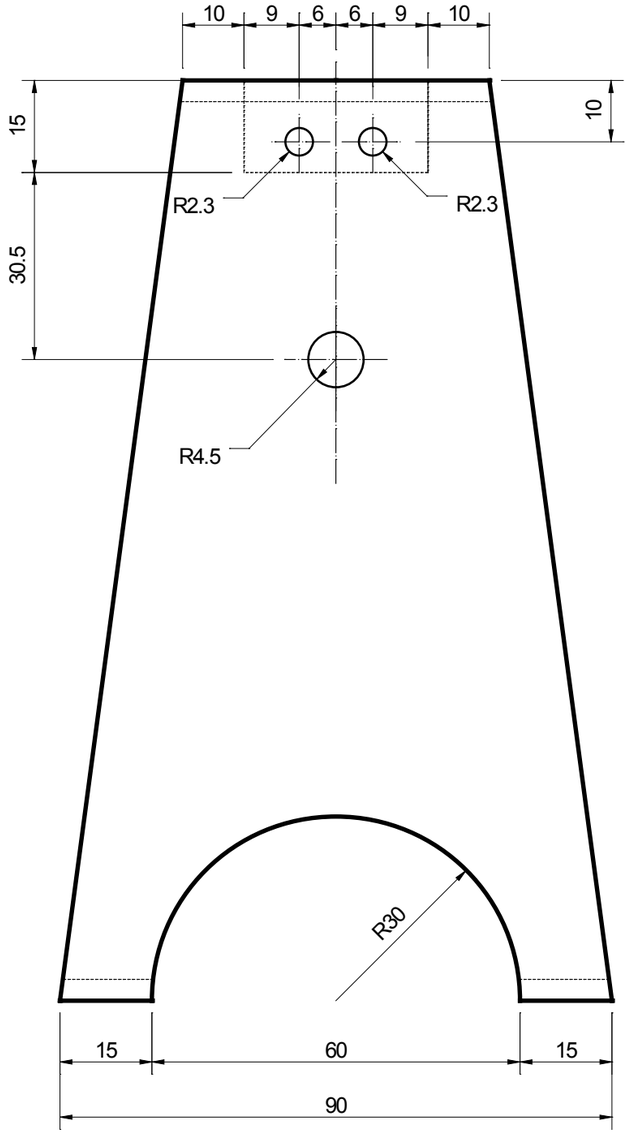
WJEC Level 1/2 Vocational Award in Engineering (Technical Award)

Appendix B

Assignment Brief (data pack)

TOP PLATE





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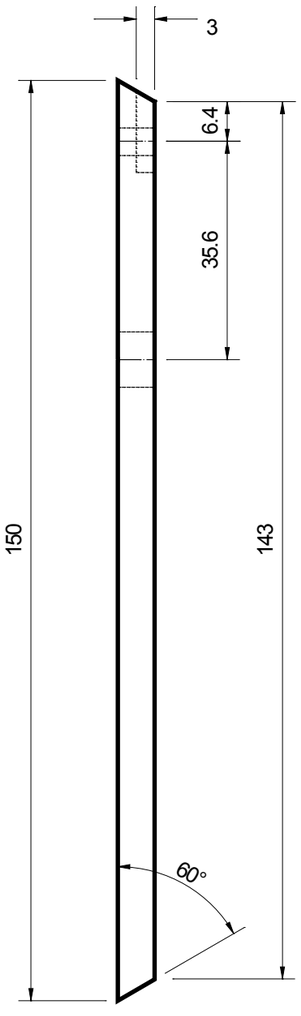
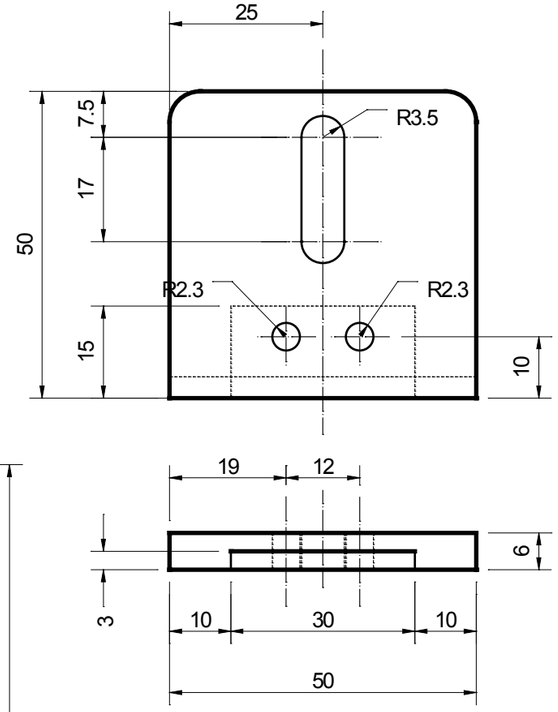
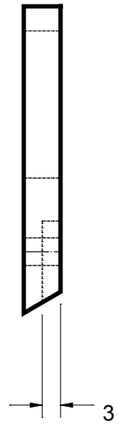
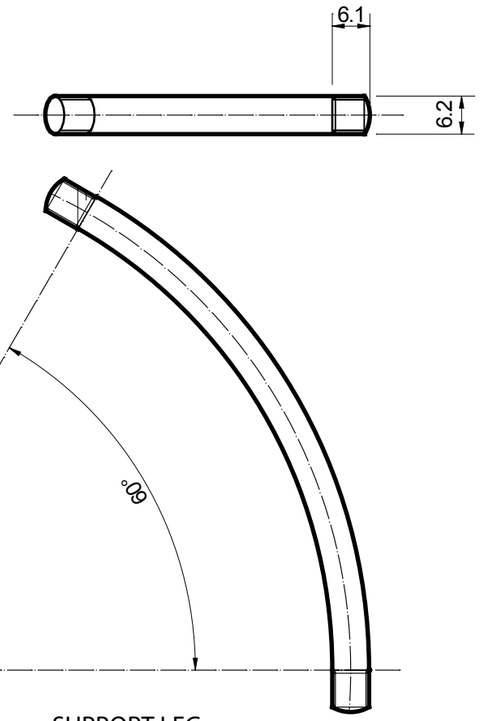


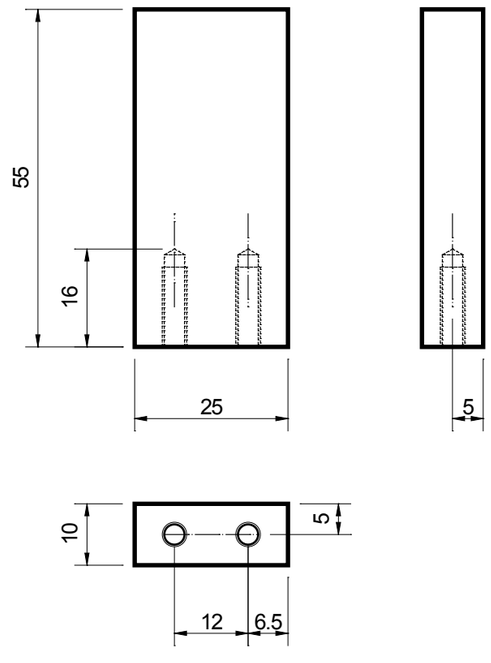


BASE BLOCK





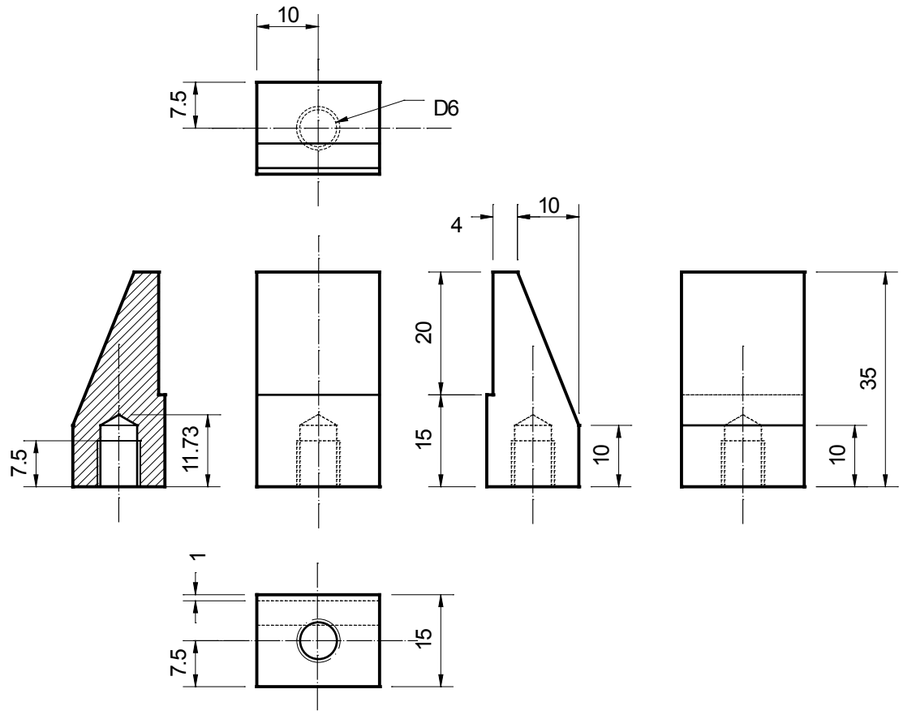
SUPPORT LEG



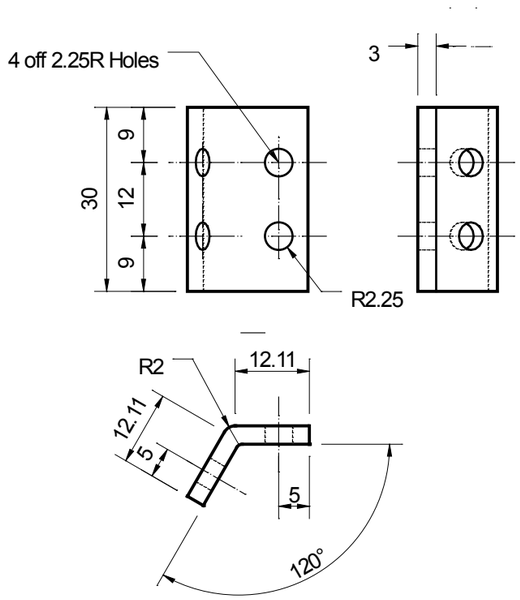
CLEAR BLOCK

UNIT 1 **CONTROLLED ASSESSMENT TASK**	CENTRE NUMBER
DRAWN BY **C Thomas**	**D&T DEPT**
SCALE: **1:1**	DESCRIPTION: **Component Parts Detail**
DATE: **16/3/2021**	DWG No: **2021.01**
	ANGLE:

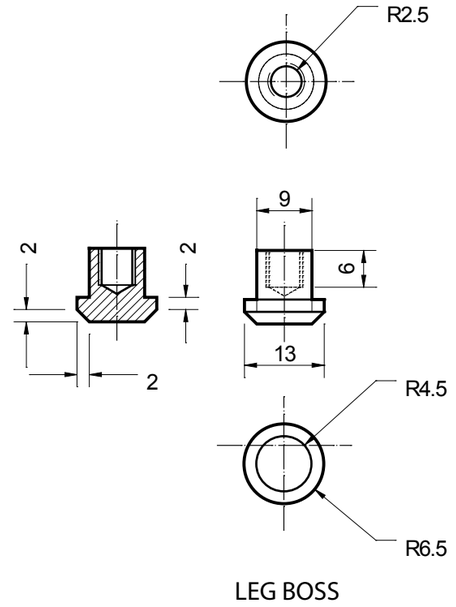
Details:
All dimensions in millimetres
Stated dimensions to be taken over scaled dimensions



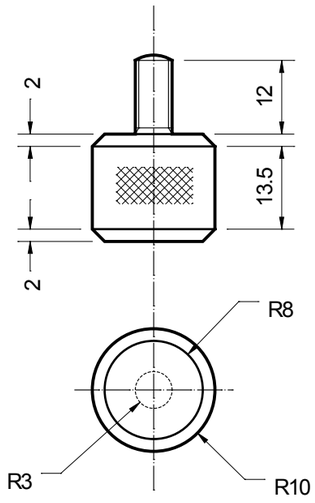
SLIDE CLAMP



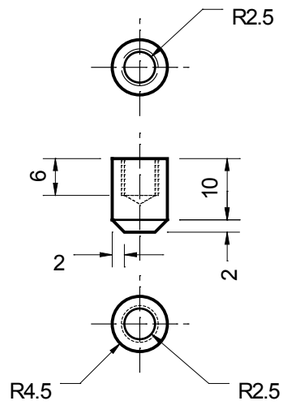
ANGLE JOIN PLATE



LEG BOSS



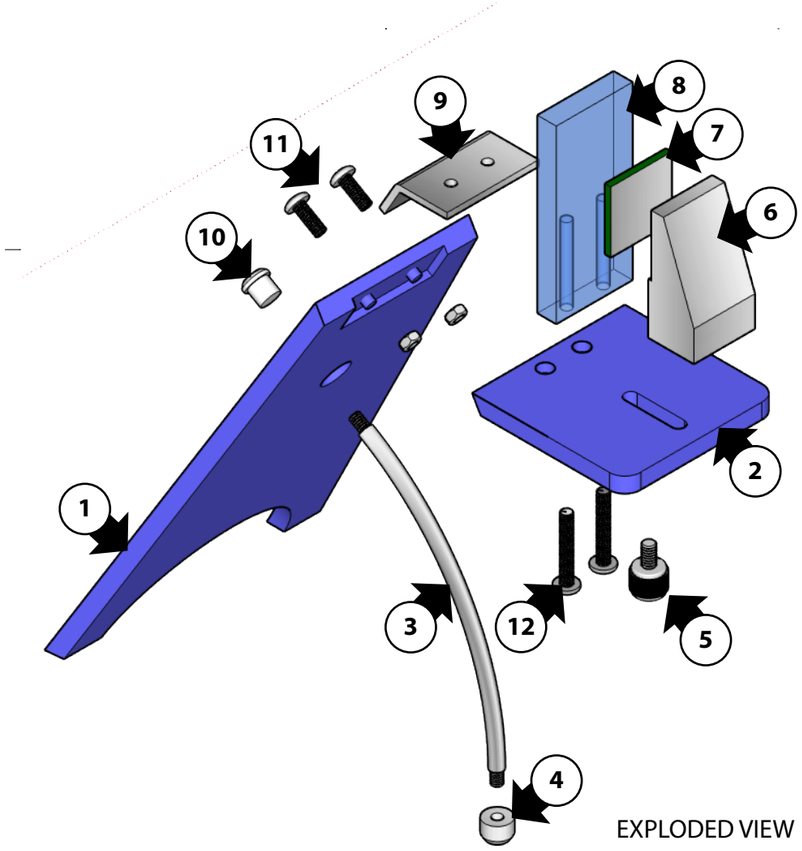
LOCKING NUT



FOOT COMPONENT

UNIT 1 **CONTROLLED ASSESSMENT TASK**	CENTRE NUMBER
DRAWN BY **C Thomas**	**D&T DEPT**
SCALE: **1:1**	DESCRIPTION: **Component Parts Detail**
DATE: **16/3/2021**	No: **2021.02**
ANGLE:	

Details:
All dimensions in millimetres
Stated dimensions to be taken over scaled dimensions



EXPLODED VIEW

PARTS LIST

1: Main Support
2: Base Block
3: Support Leg
4: Foot Component
5: Locking Nut
6: Slide Clamp
7: Rubber Pad 20x20x2mm
8: Clear Block
9: Angle Joint Plate
10: Leg Boss
11: Fixing Screw (Short)
12: Fixing Screw (Long)

DATA PACK

Tap/Thread	Tap Drill Size
M1.6 x 0.35	1.25mm
M2 x 0.4	1.60mm
M2,5 x 0.45	2.05mm
M3 x 0.5	2.50mm
M3.5 x 0.6	2.90mm
M4 x 0.7	3.30mm
M5 x 0.8	4.20mm
M6 x 1	5.00mm
M8 x 1	7.00mm
M10 x1,25	8.50mm

Thread Sizes

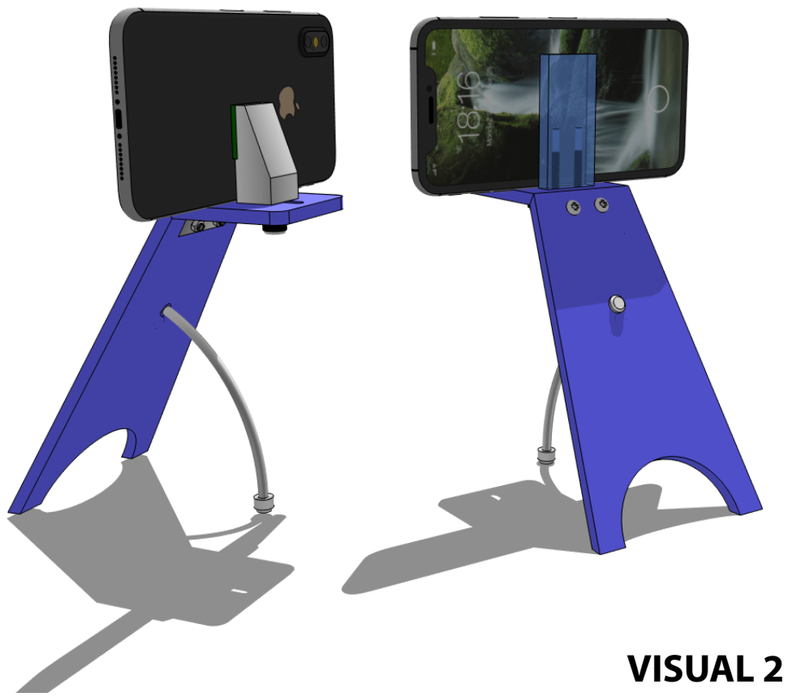
Diameter		Speed *(rpm)*					
Inches	Metric	Softwood	Hardwood	Acrylic	Brass	Aluminum	Steel
Twist drill bits							
1/16 - 3/16	1.6 - 4.8	3000	3000	2500	3000	3000	3000
1/4 - 3/8	12.7 - 9.5	3000	1500	2000	1200	2500	1000
7/16 - 5/8	11.1 - 15.9	1500	750	1500	750	1500	600
Brad-point bits							
3.2	3.2	1800	1200	1500	-	-	-
6.3	6.3	1800	1000	1500	-	-	-
9.5	9.5	1800	750	1500	-	-	-
12.7	12.7	1800	750	1000	-	-	-
15.9	15.9	1800	500	750	-	-	-
Forstner bits							
1/4 - 3/8	6.3 - 9.5	2400	700	-	-	-	-
1/2 - 5/8	12.7 - 15.9	2400	500	250	-	-	-
3/4 - 1	19.05 - 25.4	1500	500	250	-	-	-
Spade bits							
1/4 - 1/2	6.35 - 12.7	2000	1500	-	-	-	-
5/8 - 1	15.9 - 25.4	1750	1500	-	-	-	-
1 1/8 - 1 1/2		1500	1000	-	-	-	-
1 5/8 - 2		1200	700	-	-	-	

Drill Speeds

Material	Cutting Speed m/min	5mm End Mill Feed in mm/tooth/rev	10mm End Mill Feed in mm/tooth/rev
Aluminium	500	0.050	0.080
Hard Plastic	550	0.060	0.100
Hard Wood	450	0.065	0.095
Soft Wood	500	0.070	0.110
MDF	450	0.200	0.500

Milling Feed Speeds

VISUAL 1



VISUAL 2

UNIT 1 CONTROLLED ASSESSMENT TASK		CENTRE NUMBER
DRAWN BY: C Thomas		D&T DEPT
SCALE: 1:1	DESCRIPTION: Component Parts Visual	
DATE: 16/3/2021	DWG No: 2021.03	ANGLE: