

# Pre-Competition Activity Sheet

## WorldSkills UK Sheet Metalwork Technology 2021 Information

### About the Task

Welcome to the Pre-Competition Activity for Sheet Metalwork. This document details what you need to know and an activity that you can do that will prepare you for the competition..

This task should take no longer than 3 hours depending on your skill level.

**THIS IS A VIRTUAL TASK, YOU DO NOT HAVE TO MAKE ANYTHING UNLESS YOU OR YOUR TUTOR DECIDE TO.**

The purpose of the task is to provide you with a good understanding of what the competition entails, an incite to the activities involved in a competition environment and prepare for registration to compete.

During this activity you should;

- study the information you are given Including instructions, drawings and the marking criteria
- make a plan of how you would produce the virtual task including what you need to know and the skills you need
- with your tutor dicuss how you would gain any gaps in your knowledge and skills that you have identified
- produce a schedule of equipment and materials you will need
- simulate the production of the task including the identification of potential problems
- mark the simulated task, grade yourself and prepare for registration.

### Core competencies

**The Competition Technical Skills you will be testing are:**

Competitors are expected to consider the competence in the following Sheet Metalwork Skills

- interpretation of technical information, drawings and instructions
- marking out and pattern development using manual or 2D CAD
- cutting using manual techniques
- forming using manual or CNC equipment
- welding using MAGS, TAGS or resistance processes
- inspection and measurement using using manual and digital equipment and tools
- work organisation planning and time management including economical use of materials

## What you need to do

Working with your tutor you should:

- study the information given. You will notice that there are no dimensions on the drawing this is not important for this activity
- decide what knowledge and skills you have should you need to make the project including any drawing symbols such as welding or tolerances.
- make a plan of how you can obtain the additional knowledge and skills
- plan how you would produce the task and think about the time you would need
- decide at what stage you would finish the project and hand it in
- understand where the marks are gained and lost.

Once you have done this make a list of the order that you would tackle the task making notes to yourself on the machines and equipment that you would use or chose.

Now you have planned what you need to do, think through the manufacture process referring back to your notes.

Visualise the pressure that you would be under in a live competition and think of how you could manage this for example; "If you had a mental block on one aspect of the project" move on to another aspect of the project and you will almost certainly remember what you need to do.

Finally, participating in competitions can give you a great deal of experience and confidence.

## Marking and Assessment

Now that you have worked your way through the process of planning, making, visualising the conditions you might be working under and seeing the finished test project it is now time to mark and assess the work. As stated earlier you can do this by yourself, with your tutor, peer or competitor.

Remember if you have not manufactured the test project you can only refer back to your planning, and possible problem notes to assess the marking.

As you will see from the marking schedule the assessment is broken down into two parts.

- mark aspects for each module
- mark aspects taken out of the modules for competences.

You will then see how the marks are allocated for each element and the detail used by the expert Judges.

Aspect ID	Aspect of Criterion - Description	Max Mark
A	Module 1 Top	30
B	Module 2 Body	25
C	Module 3 Outer/Inner Base	15
D	Module 4 Frame	14
E	Module 5 Final Assembly	6
6	Work Organisation and Management	10
	Total	100
Aspect ID	Aspect of Sub Criterion - Description	Max Mark
1	Pattern Development	10
2	Dimensions and Stability	30
3	Cutting and Forming	20
4	Assembly Processes	20
5	Finish/refinishing	10
6	Work Organisation and Management	10
		100

The marking assessment aspects are further sub divided into criteria which are determined by objective or judgement marks.

Objective assessment will be used whenever the process or product is correct or incorrect, complete or incomplete, measured against the drawings or specification i.e. a measurement 100mm +/- 1mm or welded not welded Yes/No. It is used whenever it is possible to take an objective measurement of some kind.

Judgement assessment will be used when it is not possible to “measure” but becomes the professional judgement of the experts in line with the drawing, specification or industry standards ie Welding to BS4872, surface or general finish and appearance. The following marking scale will be used:

- 0 – Does not meet industry standard
- 1 – Requires re-work to reach industry standard
- 2 – Meets industry standard
- 3 – Exceeds industry standard

Your task is to work through the marking using your notes to see what marks you think you might or could achieve?

You will not get the marking during competition ONLY the general marks so it is very important that you use this example to understand where marks are gained and can be lost.

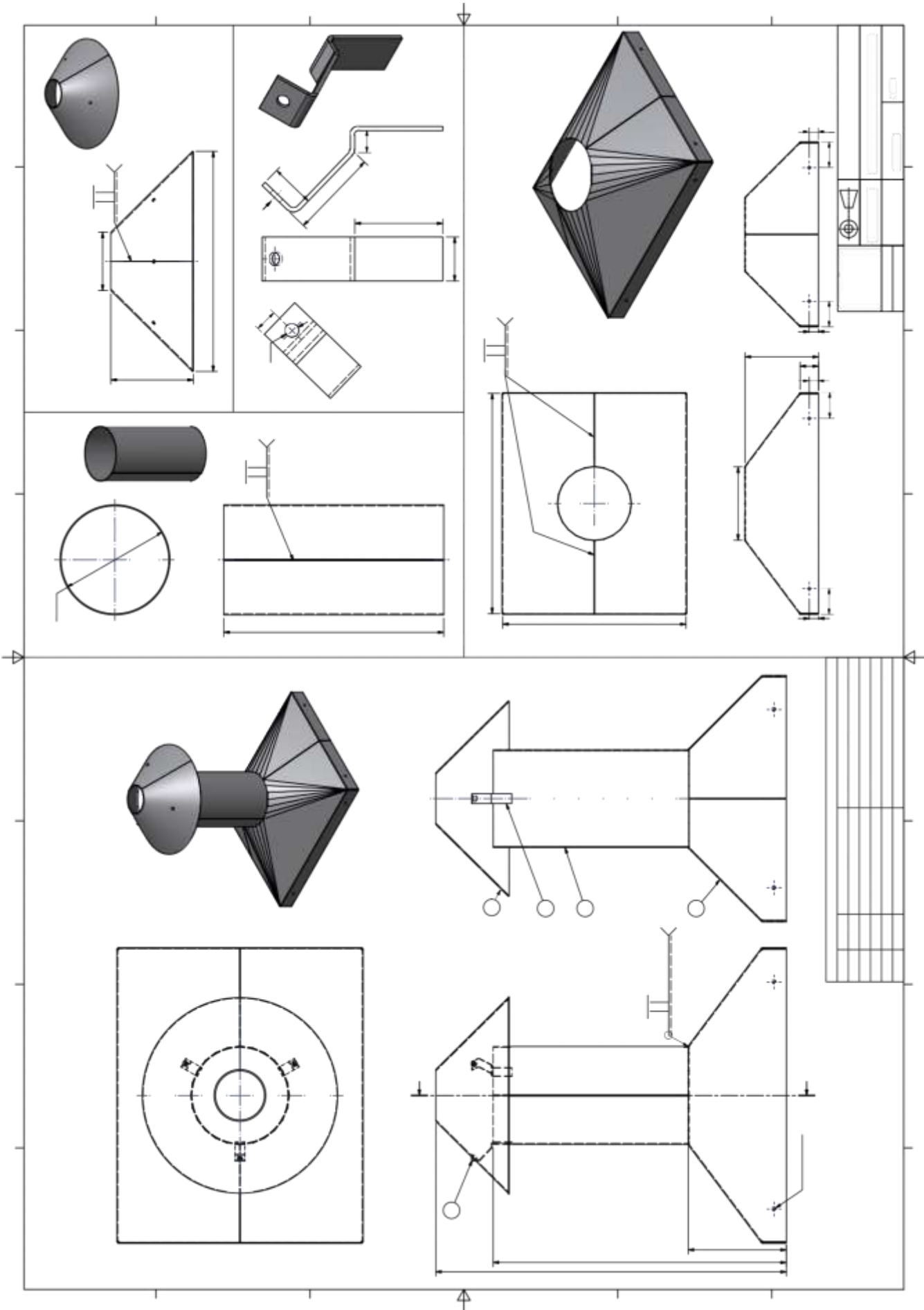
## Contact Details

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Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result Actual Value Comments	Mark Awarded
A	Module 1 Top				
A1.1	Top Front Square to round Manual or Autocad pattern developed including flanges and bend allowances	3	Pattern within 1.5mm of Master Pattern 4 points, 3mm 2 points outside 3mm 0 points		
A1.2	Top Lid Cone Manual or Autocad Pattern	2	Pattern within 1.5mm of Master Pattern 4 points, 3mm 2 points outside 3mm 0 points		
A2.1	Top Height (to the joint gap) measured in 2 places from surface plate	1	100mm +/-1mm		
A2.2	Assembly Top and Flue Height measured in 2 places from surface plate	1	300mm +/- 1.5mm		
A2.3	Assembly Top, Flue and Lid Height measured in 2 places from surface plate	1	350mm +/- 1.5mm		
A2.4	Top Base Length measured in 2 places	1	300mm +/- 1mm (Inside)		
A2.5	Top Base Width measured in 2 places	1	250mm +/- 1mm (Inside)		
A2.6	Top Base Flatness measured from surface plate using feeler gauges	1	<1mm Yes/No		
A2.7	Flue Diameter measured in 2 places at open end	1	100mm diameter +/- 1mm		
A2.8	Flue Length measured in 2 places at open end	1	200mm diameter +/- 1mm		
A2.9	Lid Diameter measured in 2 places	1	53mm diameter +/- 1mm		
A2.10	Lid Height measured in 2 places	1	75mm Height +/- 1mm		
A2.11	Module 1 Item Top to Flue Joint fit up of 4 places < 0.5mm	1	<0.5mm Yes/No		
A3.1	Top Square to Round Forming/folding continuous and smooth	2	Yes/No		
A3.2	Top Flu Forming/folding continuous and smooth	1	Yes/No		
A3.3	Top Lid Forming/folding continuous and smooth	1	Yes/No		

A4.1	Top Base seam joints fully welded Before re-finishing	1	Visual inspection as per BS 4872 meeting profile Yes/No		
A4.2	Top Base Corner joints fully welded Before re-finishing	1	Visual inspection as per BS 4872 meeting profile Yes/No		
A4.3	Flue seam joint fully welded Before re-finishing Quality	1	Visual inspection as per BS 4872 meeting profile Yes/No		
A4.4	Lid seam joint fully welded Before re-finishing Quality	1	Visual inspection as per BS 4872 meeting profile Yes/No		
A4.5	Top to Flue Joint Stitch welds 6 places	1	6 x 25mm welds equally spaced +/- 2mm Yes/No		
A4.6	Top to Flue joint Stitch welds Quality	1	Visual inspection as per BS 4872 meeting profile Yes/No		
A5.1	Top welds appearance after re-finishing	1	Welds dressed back and returned to a No 4 finish Yes/No		
A5.2	Flue weld appearance after re-finishing	1	Welds dressed back and returned to a No 4 finish Yes/No		
A5.3	Sheet metalwork free from dents and scratches	1	Yes/No		
A5.4	All exposed edges deburred	1	Yes/No		
		30			0