



SAMPLE ASSESSMENT TASKS

BUILDING AND CONSTRUCTION
GENERAL YEAR 11

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Sample assessment task

Building and Construction – General Year 11

Task 3 – Unit 1

Assessment type: Design and Production

Residential backyard design project

Part A: Design a scale model of a residential backyard (25 marks)

You are to complete a design brief for the planning of a residential backyard.

Part B: Construct a scale model of a residential backyard design (10 marks)

You are to then construct a scale model.

Part C: Evaluate completed scale model of a residential backyard design (5 marks)

Finally, evaluate your scale model.

Conditions

Period allowed for completion of theory lessons and to complete this range of practical tasks:

4 to 6 weeks

Task weighting

Part A: Design 5%; Part B: Production 8%; Part C: Design 2% of the school mark for this pair of units

What you need to do

Part A

- Take some pictures of your backyard (or someone else's if you do not wish to use yours).
- Produce sketches (at least five) that illustrate particular characteristics of the backyard.
- Complete a scale drawing of your backyard.
- Examine the pictures that you have taken and the scale drawing that you have completed and produce a PMI table.
- Detail the changes that you will make utilising sketches.
- From the results of your PMI you are to decide upon changes that you would make to your backyard.
- You will be required to detail the changes that you are going to make and the reasons that you have chosen to make these changes.
- Select the appropriate materials to make the modifications that you have chosen to undertake. Detail the benefits of using these materials to yourself and the environment.
- Prepare a materials order/cutting list.

Part B

- You will be required to produce a scale model of your backyard showing the modifications made.
- Complete a materials costing list for your backyard.

Part C

- Evaluate the changes that you have made.
- Have your parents/guardian/carers evaluate the changes that you have made.

What needs to be submitted for assessment?	Due dates
<input type="checkbox"/> Pictures, drawings and sketches of your backyard	
<input type="checkbox"/> Completed PMI	
<input type="checkbox"/> Completed detailed reasons for changes	
<input type="checkbox"/> Completed materials selection justification benefits and costing	
<input type="checkbox"/> Completed scale model and evaluation	

Marking key for sample assessment task 3 – Unit 1

Residential backyard design project

Description	Marks
Part A: Design a scale model of a residential backyard	/25
Pictures and sketches (minimum of five)	/6
<ul style="list-style-type: none"> provides clear drawings with annotations and development clear drawings with some annotations clear drawings with no annotations 	5–6 3–4 1–2
Scale drawing; hand or instrument drawing	/4
<ul style="list-style-type: none"> conforms to appropriate scale drawings standards utilises appropriate drawing techniques, minor errors 	3–4 1–2
PMI	/6
<ul style="list-style-type: none"> provides detailed information and annotated sketches for the changes planned and the relevant reasons for these changes provides sketches with clear annotations for the changes and the main reasons for these changes provides general brief comments about plans and reasons for changes 	5–6 3–4 1–2
Materials selection documentation	/4
<ul style="list-style-type: none"> provides all relevant information in a clear and concise manner, detailing reasons for material selection provides relevant information in a clear manner, detailing some reasons for material selection 	3–4 1–2
Project materials order/cutting list	/5
<ul style="list-style-type: none"> provides relevant information in a detailed and complete order/cutting list uses correct terminology to provide a suitable materials order/cutting list presents list with missing or incomplete materials 	4–5 2–3 0–1
Part B: Construct a scale model of a residential backyard design	/10
Completed project	/10
<ul style="list-style-type: none"> completes project to a very high standard of workmanship and finish completes project to a high standard of workmanship and finish completes project to a satisfactory standard of workmanship and finish 	8–10 5–7 1–4
Part C: Evaluate completed scale model of a residential backyard design	/5
Project evaluation	/5
<ul style="list-style-type: none"> reflects on the design criteria and evaluates the changes made and materials used presents simple likes and dislikes comments 	3–5 1–2
Total marks	/40

Sample assessment task

Building and Construction – General Year 11

Task 5 – Unit 1

Assessment type: Production

Part A: Bricklaying and brick paving (66 marks)

Gain a theoretical understanding from lessons, then complete a range of practical tasks to experience and develop skills in building and construction processes.

Conditions

Period allowed for completion of theory lessons and to complete a range of practical tasks:
5 to 8 weeks

Task weighting

10% of the school mark for this pair of units

Suggested time management

The practice for and production of these tasks will take place over a period of five weeks.

What you need to do

Using the information provided in Activity Sheet A1 attached, complete the following: calculating quantities, bricklaying and brick paving tasks.

Activity 1: Theory

Complete worksheets identifying and justifying material selection for the chosen situation.

- calculate materials quantities (10 marks)

Activity 2: Bricklaying

- site preparation
- construction of brick pyramid
- constructing a brick pier (36 marks)

Activity 3: Brick paving

- site preparation
- stretcher pattern (20 marks)

What needs to be submitted for assessment?	Due dates
<input type="checkbox"/> Activity 1: Theory worksheets	five weeks from commencement date
<input type="checkbox"/> Activity 2: Bricklaying	
<input type="checkbox"/> Activity 3: Brick paving	

ACTIVITY SHEET A1

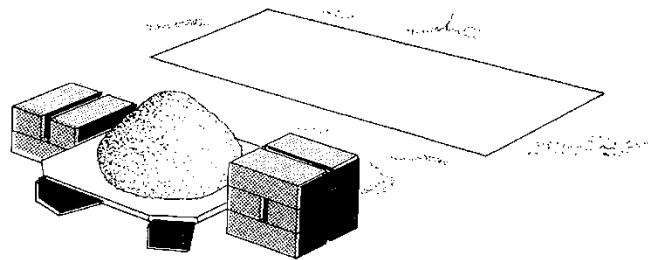
Laying bricks with the spirit-level

The easiest way to lay bricks is to use a line, but in certain situations this is not always practicable. For example, quoins, piers and leads are usually constructed using a spirit-level.

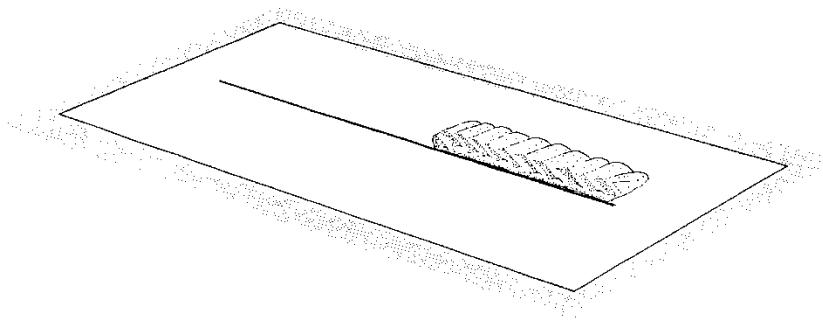
In this activity you will be required to construct a pyramid, using only the gauge rod and spirit-level for assistance.

You will need ten bricks, 900 mm spirit-level, mortar, mortar board, chalk line, trowel and gauge rod.

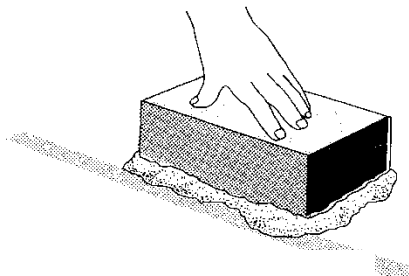
Begin by clearing a work area approximately 1 000 mm long by 500 mm wide and setting up a work station:



Using a chalk line, mark a line down the centre of the long side. Spread sufficient mortar alongside the chalk line to bed two bricks:

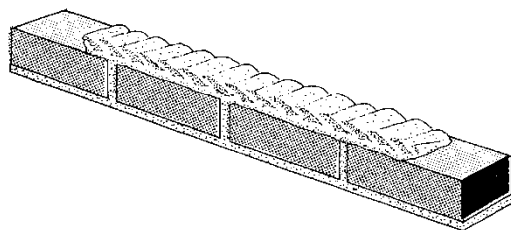


Bed the first brick at the right-hand end (do *not* butter this brick). Use the gauge rod and spirit-level to check the work. Remove the excess mortar to form a flush joint:

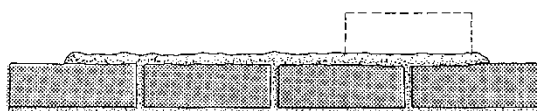


ACTIVITY SHEET A1

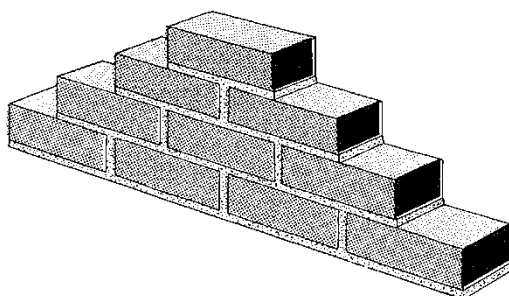
Bed three more bricks, using the spirit-level to check the work. Spread a bed of mortar on the top of these bricks:



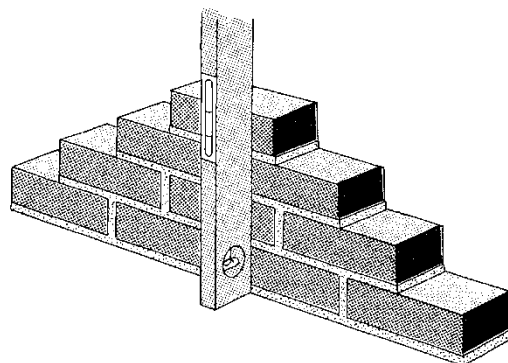
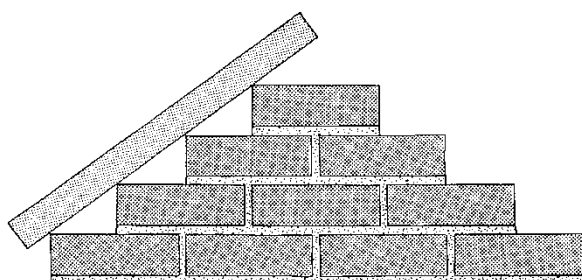
Carefully estimate the correct position for the next brick. The centre of the brick should be located directly over the first perpend at the right-hand end. Bed the brick, using the gauge rod and spirit-level to check the work. Remove the excess mortar:



Bed a further two bricks, using the spirit-level to check the progress of the work. Repeat the procedures outlined above to complete the remaining two courses:



If the work has been done correctly, the spirit-level should touch each arris as shown (at both ends of the work). The work should also be tested for alignment and to make sure that the face is plumb:



[From: Education Department of Western Australia, Curriculum Branch. (1987). *Bricks and bricklaying*. East Perth, WA: Education Department of Western Australia, pp. 85–86]

Marking key for sample assessment task 5 – Unit 1

Part A – Activity 1: Theory worksheets

Description	Maximum possible mark	Allocated mark
Complete worksheets identifying and justifying material selection for the chosen situation. <ul style="list-style-type: none"> all worksheets completed, clear notes and correct entries all worksheets completed, notes have minor errors 	3–4 1–2	/4
Calculating materials quantities <ul style="list-style-type: none"> all calculations completed, clearly set out and correct all calculations completed, some errors corrected calculations attempted, but require re-calculating or revision 	5–6 3–4 1–2	/6
Total		/10

Part A – Activity 2: Bricklaying

Description	Maximum possible mark	Allocated mark
Site preparation <ul style="list-style-type: none"> cleanliness setting out preparedness 	1–2 1–2 1–2	/6
Laying a course of bricks <ul style="list-style-type: none"> square level raking 	1–3 1–3 1–3	/9
Construction of brick pier <ul style="list-style-type: none"> square level raking 	1–3 1–3 1–3	/9
Occupational Safety and Health <ul style="list-style-type: none"> clothing tools/equipment procedural 	1–2 1–2 1–2	/6
Work habits <ul style="list-style-type: none"> works independently use of materials tidiness 	1–2 1–2 1–2	/6
Total		/36

Part A – Activity 3: Brick paving

Description	Maximum possible mark	Allocated mark
Site preparation <ul style="list-style-type: none"> • cleanliness • setting out • preparedness 	1–2 1–2 1–2	/6
Laying a course of paving bricks – stretcher pattern <ul style="list-style-type: none"> • square • flat • compacted 	1–3 1–3 1–3	/9
Work habits and Occupational Safety and Health <ul style="list-style-type: none"> • correct PPE clothing • correct use of tools/equipment • correct procedure • appropriate use of materials • tidiness 	1 1 1 1 1	/5
Sub total		/20
Combined total		/66

Sample assessment task

Building and Construction – General Year 11

Task 5 – Unit 1

Assessment type: Production

Part B: Construction exercises (identify materials and tiling) (55 marks)

Complete a range of practical and theoretical exercises incorporating a spectrum of construction materials processes and techniques.

Conditions

Period allowed for completion of theory lessons and to complete a range of practical tasks:
5 to 8 weeks

Task weighting

10% of the school mark for this pair of units

What you need to do

You are to complete the following theory worksheets and practical exercises.
Construction knowledge and skills exercises

Activity 1: Wall tiling (20 marks)
Complete wall tiling task using specified area tools and equipment.

Activity 2: Floor tiling (20 marks)
Complete floor tiling task using specified area tools and equipment.

Activity 3: Construction materials (15 marks)

You are to complete the relevant worksheets that relate to the following points:

- present a materials identification sheet, showing mechanical properties of common building materials in terms of:
 - hardness
 - elasticity
 - conductivity
 - flexibility
 - strength
- presentation of finishes; different types and their uses.

What needs to be submitted for assessment?	Due dates
<input type="checkbox"/> Completed wall tiling	
<input type="checkbox"/> Completed floor tiling	
<input type="checkbox"/> Construction materials identification sheet	

Marking key for sample assessment task 5 – Unit 1

Task 5 Part B – Construction exercises

Wall tiling	Maximum possible mark	Allocated mark
Site preparation <ul style="list-style-type: none"> • cleanliness • setting out • preparedness 	1–2 1–2 1–2	/6
Wall tiling process <ul style="list-style-type: none"> • mixing of grout • square • level • spacing • grouting 	1–2 1–2 1–2 1–2 1–2	/ 10
Work habits and Occupational Safety and Health <ul style="list-style-type: none"> • correct PPE clothing • correct use of tools/equipment • appropriate use of materials • tidiness 	1 1 1 1	/4
Total		/ 20

Floor tiling	Maximum possible mark	Allocated mark
Site preparation <ul style="list-style-type: none"> • cleanliness • setting out • preparedness 	1–2 1–2 1–2	/6
Wall tiling process <ul style="list-style-type: none"> • mixing of grout • square • level • spacing • grouting 	1–2 1–2 1–2 1–2 1–2	/ 10
Work habits and Occupational Safety and Health <ul style="list-style-type: none"> • correct PPE clothing • correct use of tools/equipment • appropriate use of materials • tidiness 	1 1 1 1	/4
Total		/ 20

Task 5 Part B – Construction exercises – Materials identification sheet

Description	Maximum possible mark	Allocated mark
Presented materials identification sheet <ul style="list-style-type: none"> completed worksheet listing common building materials, with correct, detailed listing of all mechanical properties for each material completed worksheet listing common building materials, with mechanical properties correctly listed for each material completed list of common building materials, with minor errors in the listing of mechanical properties partially finished worksheet of common building materials, with errors or missing mechanical properties incomplete worksheet missing information about the mechanical properties 	9–10 7–8 5–6 3–4 1–2	/10
Presentation of finishes; different types and their uses <ul style="list-style-type: none"> all finishes listed, with clearly set out uses most finishes listed, but some errors in arrangement of details of uses list of finishes attempted, but require further arrangement of types and uses 	4–5 2–3 0–1	/5
Total		/ 15
Combined total		/55

Sample assessment task

Building and Construction – General Year 11

Task 5 – Unit 1

Assessment type: Production

Part C: Fabrication exercises (welding)

(45 marks)

Complete a series of practical exercises in the three types of welding.
Present welds on a suitable display board.

Conditions

Period allowed for completion of theory lessons and to complete a range of practical tasks:
5 to 8 weeks

Task weighting

8% of the school mark for this pair of units

What you need to do

You are to complete the following welding exercises. The exercises are to be presented on a suitable display board that you have constructed.

Arc welding

- beads
- butt weld
- 'T' weld

MIG welding

- beads
- butt weld
- 'T' weld

Gas welding

- beads
- butt weld
- flange weld

Present completed welds on a suitable display board.

What needs to be submitted for assessment?	Due dates
<input type="checkbox"/> Completed welds on a suitable display board	

Marking key for sample assessment task 5 – Unit 1

Part C – Fabrication exercises (welding)

Description	Maximum possible mark	Allocated mark
Correct and safe preparation of welding equipment <ul style="list-style-type: none"> • correct safe set up of equipment • personal protective equipment used • correct setting of: <ul style="list-style-type: none"> ▪ oxy/acetylene gas pressures ▪ rod selection and amperage ▪ amperage and wire speed • correct shut down 	1–3 1–3 1–3 1–3 1–3	/18
Gas welding – good weld appearance, good weld penetration, and neat, even or consistent shape to weld and surrounding metal <ul style="list-style-type: none"> • beads • butt weld • flange weld 	1–3 1–3 1–3	/9
Arc welding – good weld appearance, good weld penetration, and neat, even or consistent shape to weld and surrounding metal <ul style="list-style-type: none"> • beads • butt weld • ‘T’ weld 	1–3 1–3 1–3	/9
MIG welding – good weld appearance, good weld penetration, and neat, even or consistent shape to weld and surrounding metal <ul style="list-style-type: none"> • beads • butt weld • ‘T’ weld 	1–3 1–3 1–3	/9
Total		/45

GAS WELDING

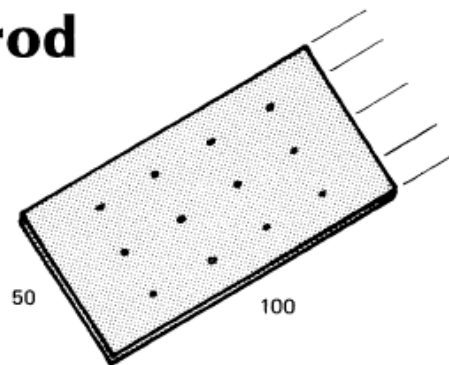
Running beads with rod

Use 1.6 or 1.8 mm thickness mild steel

Cut one piece 100 x 50.

Use 1.6 mild steel rod.

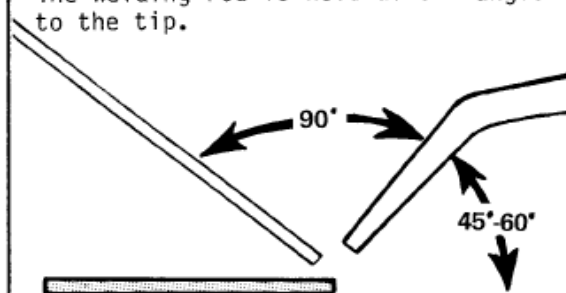
Centre punch marks about 20 mm apart.



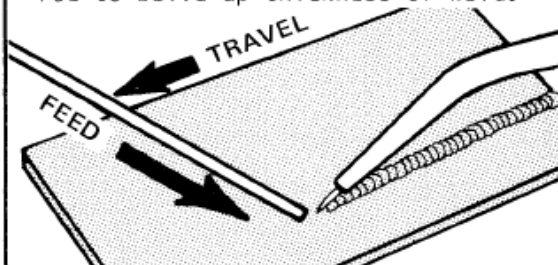
Hold welding rod in hand as pictured.



For forward welding, hold tip at a 45° to 60° angle. The welding rod is held at 90° angle to the tip.

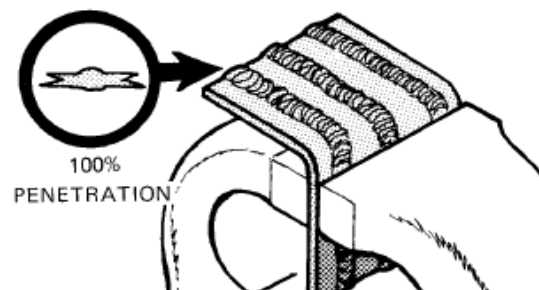


First form a molten puddle, keeping the welding rod in the outer flame cone. Once penetration is achieved, add rod to build up thickness of weld.



When the model has cooled, bend it over in a vice.

RAISED BEADS



CHECK

Complete the bend all the way over on an anvil. Inspect weld at the bend. A proper neutral flame weld will not crack.

CHECK

- ☐ STRAIGHTNESS OF WELD
- ☐ NEATNESS OF WELD
- ☐ PENETRATION OF WELD

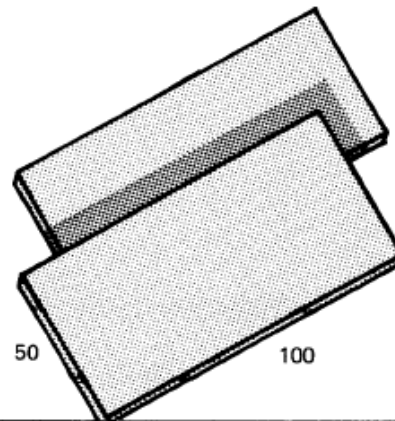
[From: Education Department of Western Australia, Curriculum Branch. (1983). *Manual arts: Fusion welding*. Perth: Education Department of Western Australia, p. 25]

Butt weld with rod

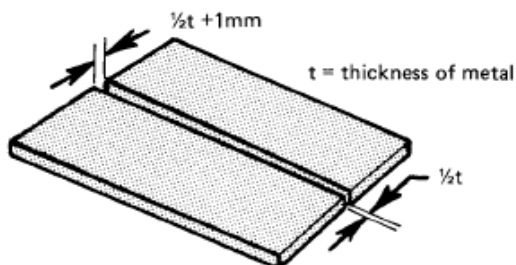
Use 1.6 - 1.8 mm thickness mild steel.

Cut two pieces 100 x 50.

Use 1.6 mm welding rod.

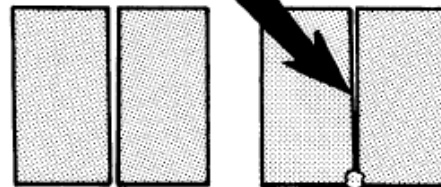


IT'S EASIER TO ACHIEVE PENETRATION WHEN A GAP IS LEFT BETWEEN THE TWO PIECES OF METAL.

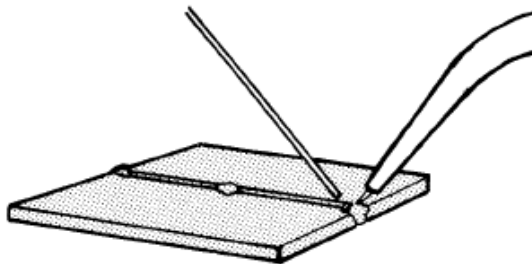


The reason for the greater gap at the other end is because heat will cause the metal to move during tack welding.

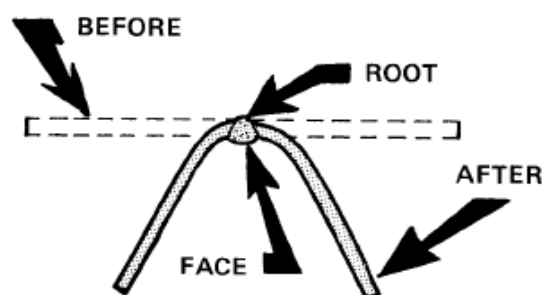
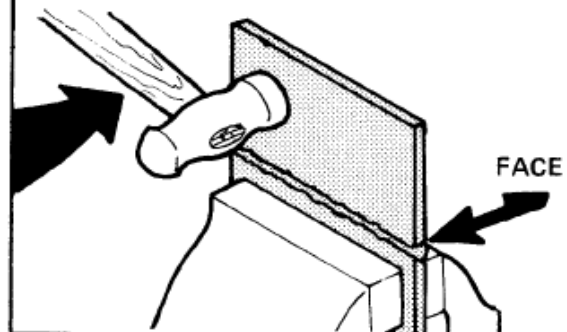
TACK WELD HERE



After compensating for metal distortion, proceed with weld using rod to fill in gap and build up weld thickness.



To test weld, bend over in a vice against face of weld.



NO CRACKS OR SEPARATION SHOULD OCCUR AT THE ROOT

CHECK

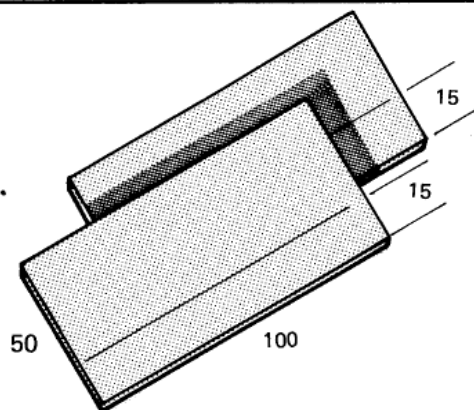
- ☐ STRAIGHTNESS OF WELD
- ☐ NEATNESS OF WELD
- ☐ PENETRATION OF WELD

[From: Education Department of Western Australia, Curriculum Branch. (1983). *Manual arts: Fusion welding*. Perth: Education Department of Western Australia, p. 27]

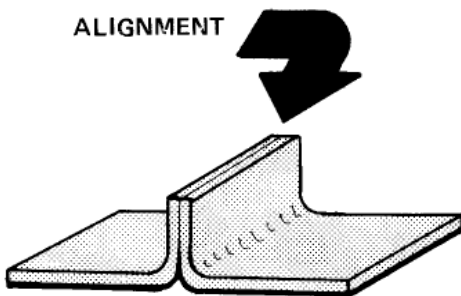
Flange weld

Use 1.6 or 1.8 mm thickness mild steel.
Cut two pieces 100 x 50. Use no rod.

Scribe lines 15 mm from one edge.



ALIGNMENT



Bend metal 90° on 15 mm line.

Use folding bar or vice.

Accuracy and alignment will help make the weld easier to perform.

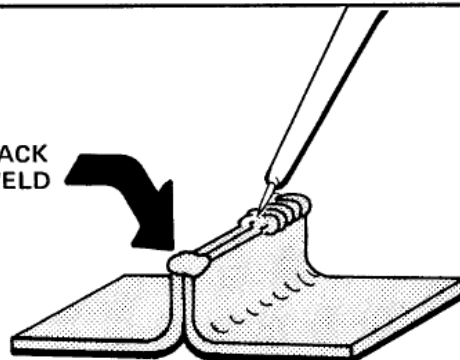
Tack both ends of the model using a neutral flame. This is to prevent the metal from moving during welding.

Hold the tip at a 60° angle.

Bring metal to molten state.

Using a zig-zag pattern, continue fusing metal together.

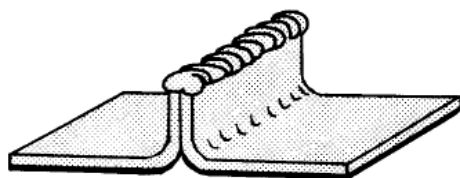
TACK WELD



The welded area should be neat and uniform. The fused portion should be smooth and shiny.

CHECK

- ☐ STRAIGHTNESS OF WELD
- ☐ NEATNESS OF WELD
- ☐ PENETRATION OF WELD



[From: Education Department of Western Australia, Curriculum Branch. (1983). *Manual arts: Fusion welding*. Perth: Education Department of Western Australia, p. 23]

ARC WELDING

Running continuous beads

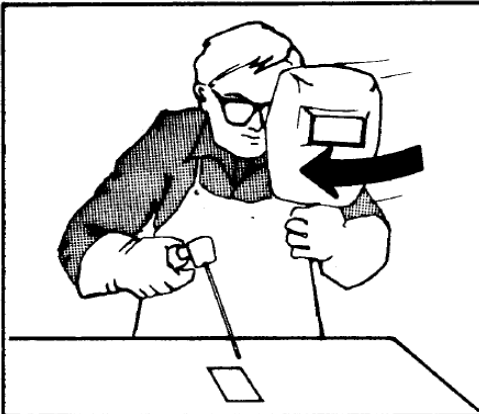
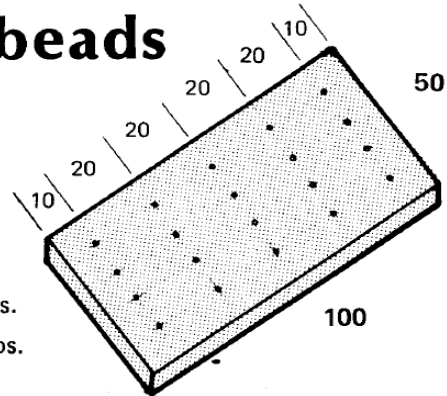
Use 3mm to 6mm thickness mild steel.

Cut one or more pieces 100 x 50mm.

Centre punch marks about 20mm apart.

Use 2.6mm electrode on 3mm mild steel at 90 amps.

Use 3.25mm electrode on 6mm mild steel at 115 amps.



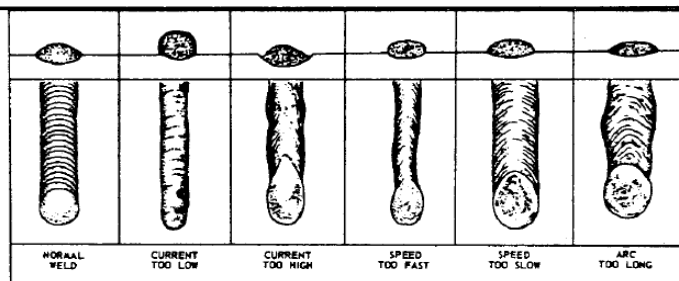
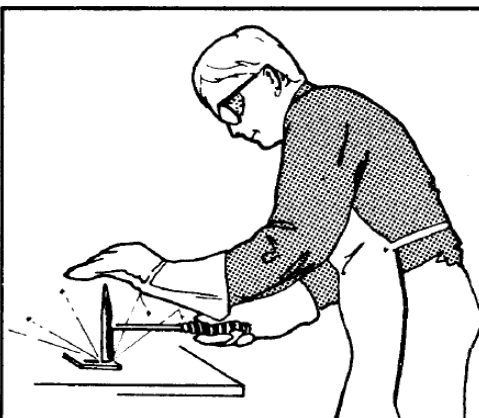
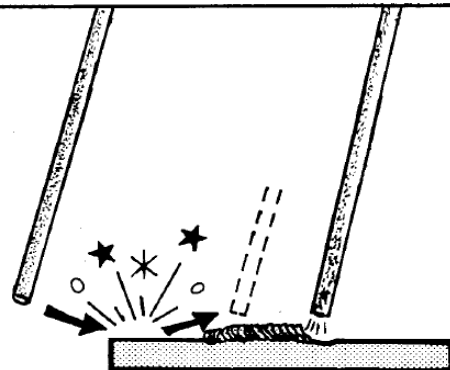
Position yourself behind your model.

Weld in front of your body using the downhand method.

Cover your face with the shield just before you strike the arc.

Strike an arc by using the scratch method.

Once the arc is established, run the bead almost to the edge of the model.



Chip away the slag and compare it to the chart above.

[From: Education Department of Western Australia, Curriculum Branch. (1984). *Manual arts: Arc welding*. Perth: Education Department of Western Australia, p. 30]

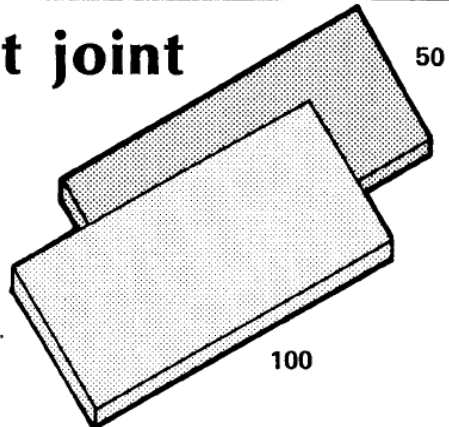
Welding a closed butt joint

Use 3mm to 6mm thickness mild steel.

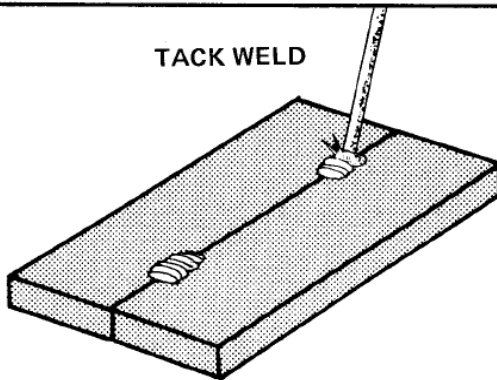
Cut two pieces 100 x 50mm.

Use 2.5mm electrode on 3mm mild steel at 90 amps.

Use 3.25mm electrode on 6mm mild steel at 115 amps.



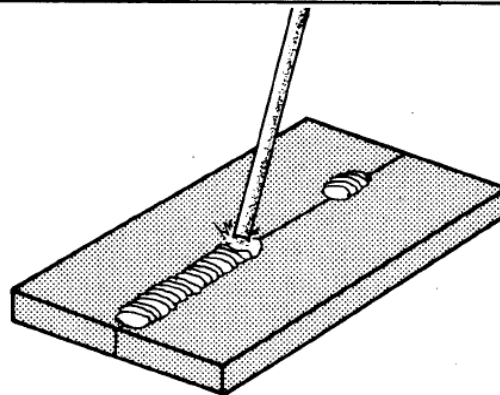
TACK WELD



Position the model so that the two edges touch one another.

Tack weld each end of the model.

Run bead along the joint.



Chip away the slag.

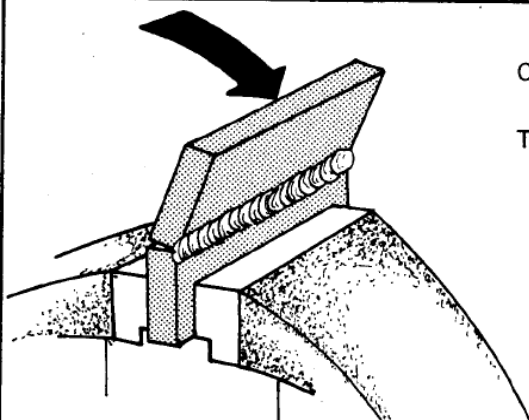
Test and inspect the weld by bending it back in a vice.

CHECK

Straightness of weld.

Neatness of weld.

Penetration of weld.



[From: Education Department of Western Australia, Curriculum Branch. (1984). *Manual arts: Arc welding*. Perth: Education Department of Western Australia, p. 34]

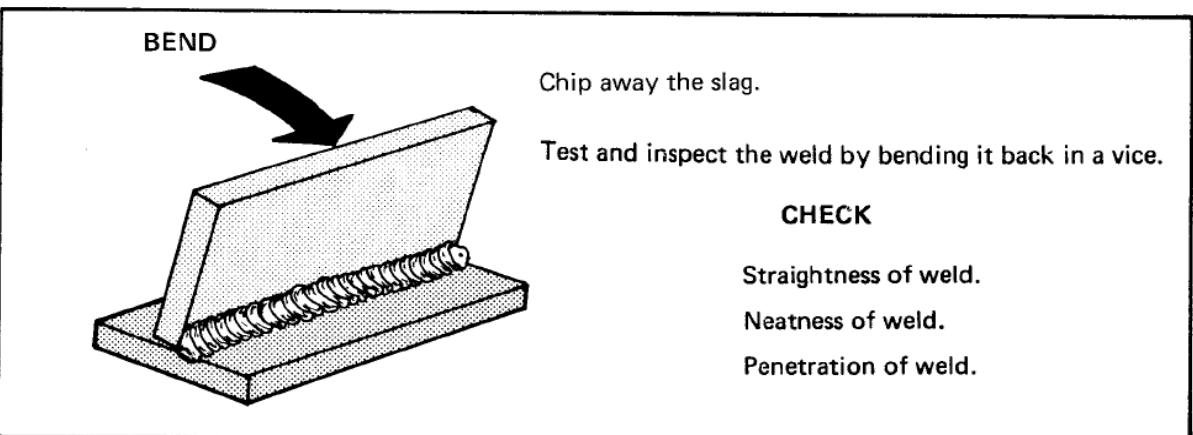
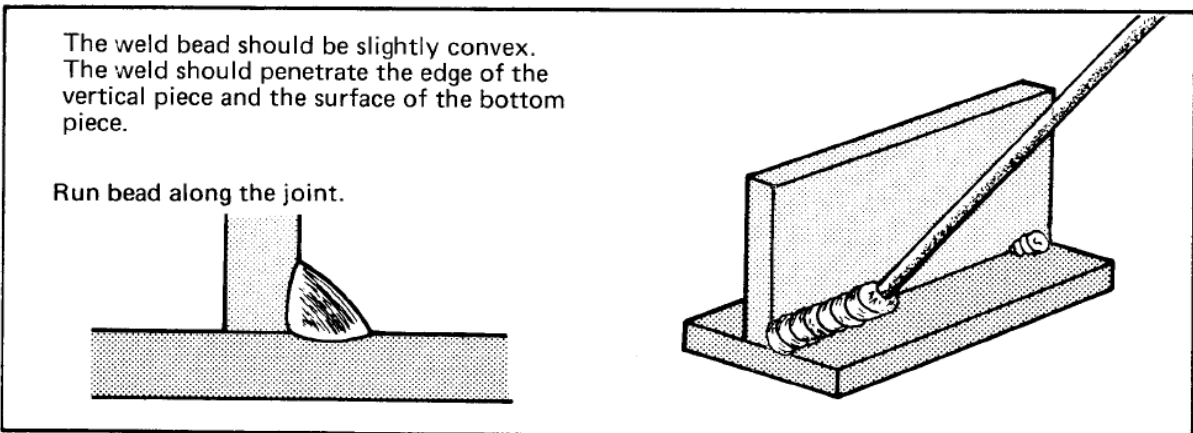
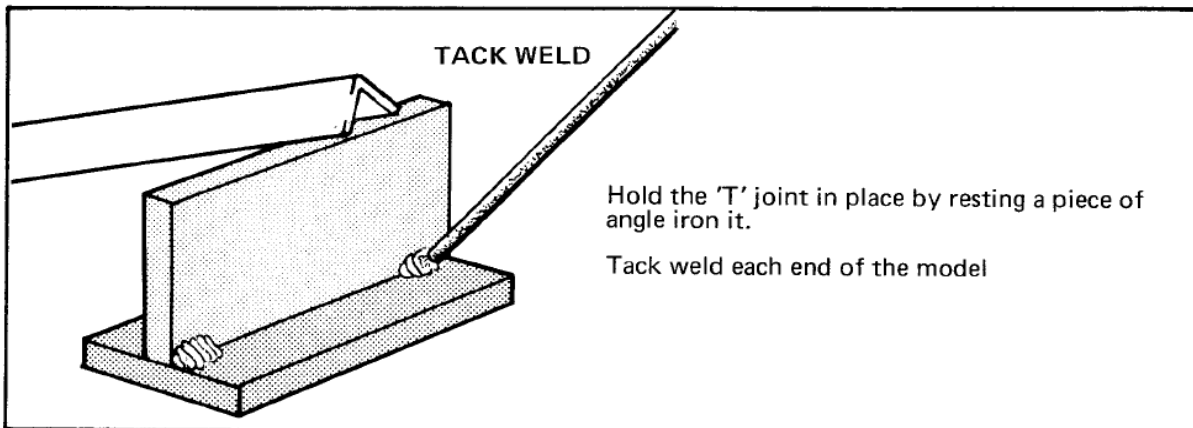
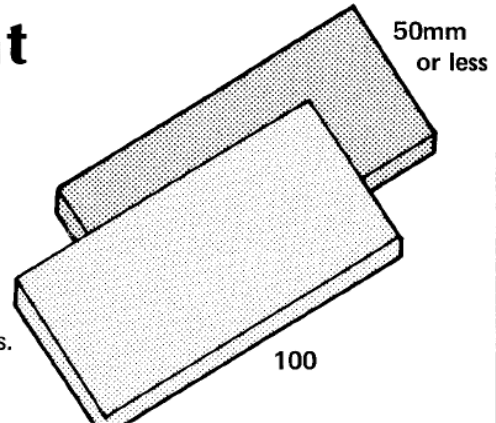
Welding a tee joint

Use 3mm to 6mm thickness mild steel.

Cut two pieces 100 x 50mm or less.

Use 2.5mm electrode on 3mm mild steel at 90 amps.

Use 3.25mm electrode on 6mm mild steel at 115 amps.



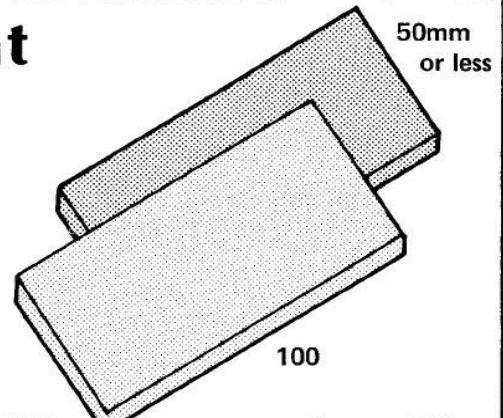
[From: Education Department of Western Australia, Curriculum Branch. (1984). *Manual arts: Arc welding*. Perth: Education Department of Western Australia, p. 37]

MIG WELDING

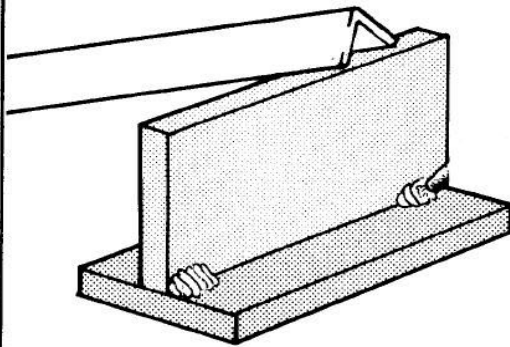
Welding a tee joint

Use 3mm to 6mm thickness mild steel.

Cut two pieces 100 x 50mm or less.



TACK WELD

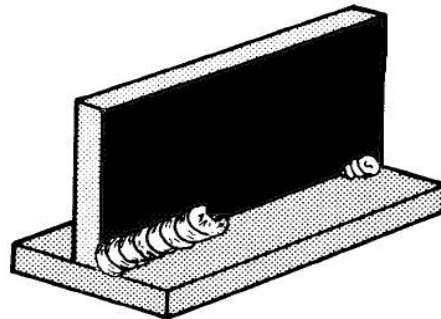
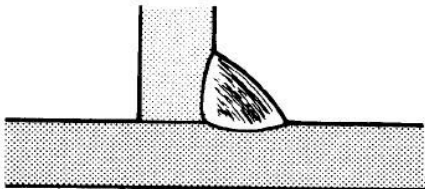


Hold the 'T' joint in place by resting a piece of angle iron it.

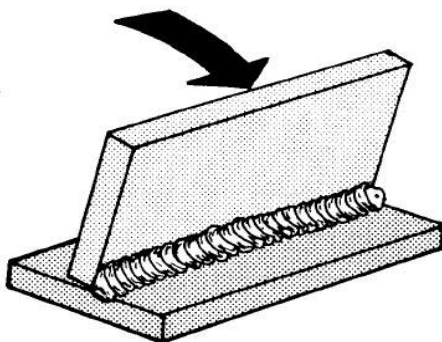
Tack weld each end of the model

The weld bead should be slightly convex.
The weld should penetrate the edge of the vertical piece and the surface of the bottom piece.

Run bead along the joint.



BEND



Test and inspect the weld by bending it back in a vice.

CHECK

Straightness of weld.

Neatness of weld.

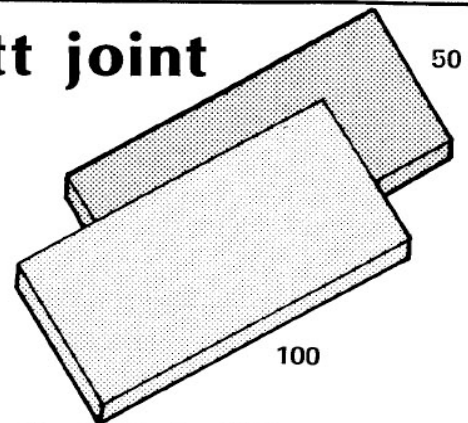
Penetration of weld.

[From: Education Department of Western Australia, Curriculum Branch. (1984). *Manual arts: Arc welding*. Perth: Education Department of Western Australia, p. 37]

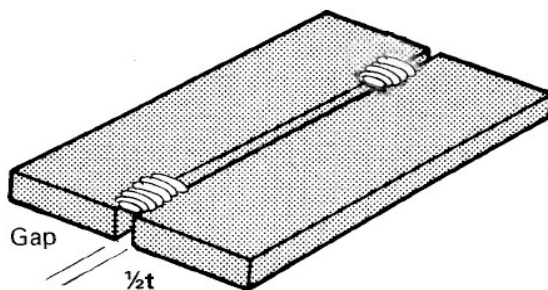
Welding an open butt joint

Use 3mm to 6mm thickness mild steel.

Cut two pieces 100 x 50mm.



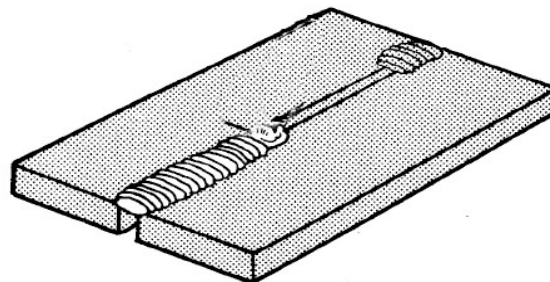
TACK WELD



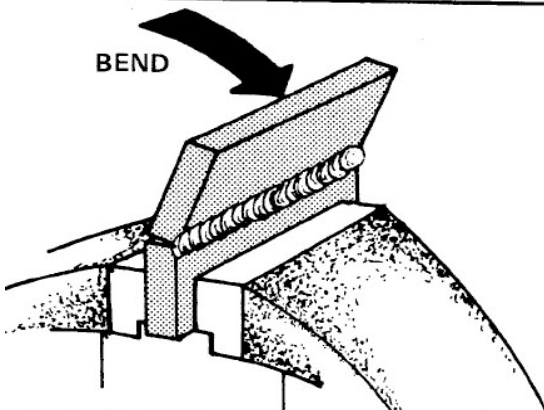
Position the model so that gap between the two pieces is $\frac{1}{2}$ the thickness of the metal.

Tack weld each end of the model.

Run bead along the joint.



BEND



Test and inspect the weld by bending it back in a vice.

CHECK

Straightness of weld.
Neatness of weld.
Penetration of weld.

[From: Education Department of Western Australia, Curriculum Branch. (1984). *Manual arts: Arc welding*. Perth: Education Department of Western Australia, p. 35]

Sample assessment task

Building and Construction – General Year 11

Task 4 – Unit 1

Assessment type: Response

Environment and sustainability assignment

(25 marks)

Research and compile notes on:

- sustainable practices in building and construction
- types of environmentally friendly alternatives in methods of building and construction

Conditions

Period allowed for completion of this task is two weeks

Task weighting

3% of the school mark for this pair of units

What you need to do:

In your groups, you are to research and compile notes on:

- sustainable practices in building and construction
 - define sustainable practices
 - locate and list methods of sustainable practices
- types of environmentally friendly alternatives in methods of building and construction
 - identify environmentally friendly alternatives
 - locate and list, giving a brief description and examples of each, of environmentally friendly alternatives in building and construction

Provide a list of references and sources of information.

What needs to be submitted for assessment?	Due dates
<input type="checkbox"/> Completed assignment notes	

Marking key for sample assessment task 4 – Unit 1

Research and compile notes on the definitions of sustainable practices. Identify methods of environmentally friendly alternatives in building and construction.	Maximum possible mark	Allocated mark
Definition of sustainable practices <ul style="list-style-type: none"> • accurate detailed definition and correct use of terminology • adequate definition with/without minor errors in use of terminology 	4–5 1–3	/5
Documents listing methods of sustainable practices <ul style="list-style-type: none"> • accurate detailed listing of methods and correct use of terminology • minor/small errors or some details missing from list, uses general terminology correctly to explain methods • terminology incorrect and/or critical information missing 	5–6 3–4 1–2	/6
Identify and list different environmentally friendly alternatives in building and construction <ul style="list-style-type: none"> • accurate identification of each type and correct descriptions, using appropriate terminology and common examples • correct terminology in identifying each type but has minor errors in some descriptions • some types identified and described in general terms, with errors in some descriptions • incorrect use of terminology to identify and describe examples of only a few types 	10–12 7–9 4–6 1–3	/12
<ul style="list-style-type: none"> • appropriate reference list • limited or no reference list provided 	2 0–1	/2
Total		/25