CONSTRUCTION

SUMMER PROJECTS
YEAR 11 STUDENTS

PLUMBING:
LEVEL 1
LEVEL 2

HEART OF
WORCESTERSHIRE
COLLEGE

KICK START YOUR STUDY AT HOW COLLEGE WITH ONE OF OUR CURRICULUM BRIDGING PROJECTS

Background:

This assignment is set out to encourage you to research different aspects within the Plumbing and construction industry and will kick start your study programme as you will gain a better understanding and knowledge of the construction industry. You will familiarise yourself of current health and safety legislation, safety/warning signs, relevant tools and materials and the principles of construction.

This assignment will help you in the skills and knowledge you will need to complete your course and either progress to Level 2 or 3, or enter the workforce. You will learn about the wider construction industry and how it works, as well as the skills and techniques you will need to work as a Plumber. You will be able to work safely on site using the correct tools and equipment to carry out plumbing activities.

Tasks:

Level 1: Research and identify safety signs, research and identify trade fittings used in the industry, and research and identify basic tools that are used in the trade.

Level 2: Having already completed level 1 you will have some prior knowledge of the plumbing trade. These tasks are related to what a plumber does on the office side of running a business. You will be asked to fill in a daily job card for a fictitious job, an estimate for a bathroom installation, a risk assessment for a given task, an invoice for one of the for mentioned tasks, you will have to compile a letter in response to a complaint and finally you will be given some basic English and Maths to do that is related to plumbing work.

Safety Signs

Identify the category of the sign, what information is it telling you and where would it be located?

	Category: _____ Information: _____ _____ Location: _____
	Category: _____ Information: _____ _____ Location: _____
	Category: _____ Information: _____ _____ Location: _____
	Category: Information: _____ _____ Location: _____
	Category: _____ Information: _____ _____ Location: _____

	Category: _____ Information: _____ _____ Location: _____
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	Category: Information: _____ _____ Location: _____
	Category: _____ Information: _____ _____ Location: _____

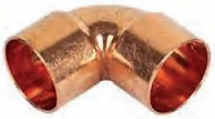
Fittings

During your course you will need to learn the names and types of fittings that you will be using.

Can you identify the types of the following fittings from the descriptions given in the boxes and say which materials you would be using them on.

Name: 	These fittings need solder to be fed into each end to make the joint water tight.	What materials would they be used on?
Name: 	These fittings need to be tightened with a nut and olive.	What materials would they be used on?
Name: 	These fittings need to be screwed onto a threaded bar.	What materials would they be used on?

Name: 	These fittings do not need solder to be added as it is already in the fitting.	What materials would they be used on?
Name: 	These fittings do not require any tools to fit them to pipework.	What materials would they be used on?
Name: 	These fittings do not require any tools to fit them to pipework.	What materials would they be used on?

Fittings Identification		Start Date:	Finish Date:
			
			
			
			
			
			
			
			

Tool Identification

Identify the tools below, one safety and one maintenance requirement for each.

	Tool Name: _____ Maintenance: _____ _____ _____ Safety: _____ _____
	Tool Name: _____ Maintenance: _____ _____ _____ Safety: _____ _____
	Tool Name: _____ Maintenance: _____ _____ _____ Safety: _____ _____
	Tool Name: _____ Maintenance: _____ _____ _____ Safety: _____ _____

	Tool Name: _____ Maintenance: _____ _____ _____ Safety: _____ _____
	Tool Name: _____ Maintenance: _____ _____ _____ Safety: _____ _____
	Tool Name: _____ Maintenance: _____ _____ _____ Safety: _____ _____
	Tool Name: _____ Maintenance: _____ _____ _____ Safety: _____ _____

	Tool Name: _____ Maintenance: _____ _____ _____ Safety: _____ _____
	Tool Name: _____ Maintenance: _____ _____ _____ Safety: _____ _____

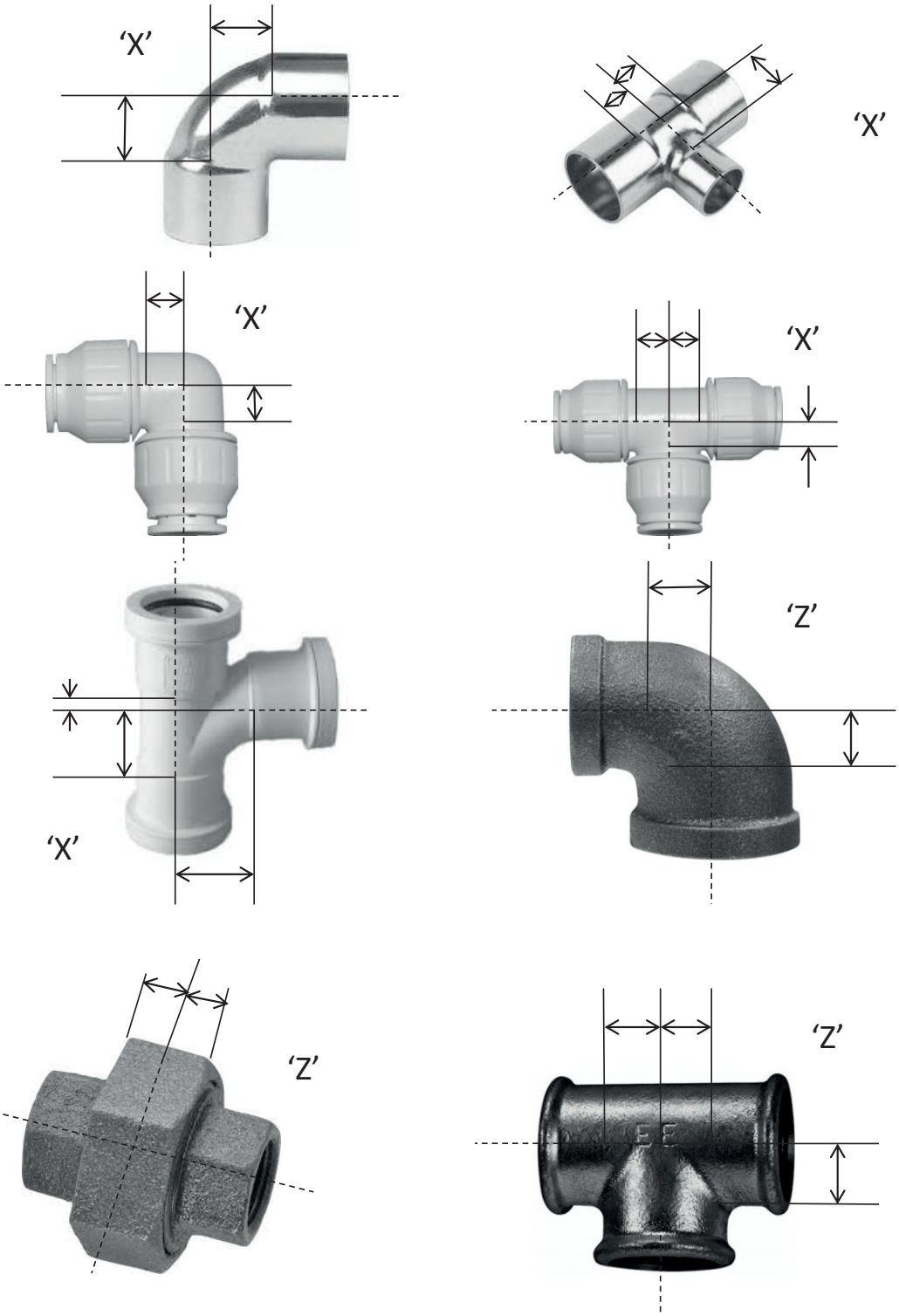
Battery Drill

Below is a drawing of a battery drill. You are required to fill in the boxes and label all the parts of the drill. This sheet should be retained and used for reference when you have to use the drill if you are unfamiliar with its workings.

Guage	Metric equiv.	Pilot hole	Clearance hole	Masonry plug hole
3		1.0mm	3.omm	Yellow (5mm hole)
4	3.omm	1.5mm		Yellow (5mm hole)
6	3.5mm		4.0mm	
8		2.5mm	4.5mm	Red (6mm hole) or Brown (7mm hole)
10	5.0mm	3.0mm	5.5mm	
12	5.5mm		6.0mm	Brown (7mm hole)
14		4.0mm	7.0mm	

When constructing pipe work frames measurements are given in millimetres and are always measured from centre to centre. Therefore the pipe will be shorter than the measurement required. To obtain the correct measurement you need to measure the ‘X’ or ‘Z’ dimension for each fitting and subtract it from the frame dimension. To help you do this please see the following sheet showing how you can measure the various fittings that you may be using.

‘X’ & ‘Z’ Dimensions are the section of the pipe measurement made up by the fitting as illustrated below. (Please note all measurements are centre of pipe to centre of pipe).



Name: .....

Task 1: Bending Copper Tube 90°

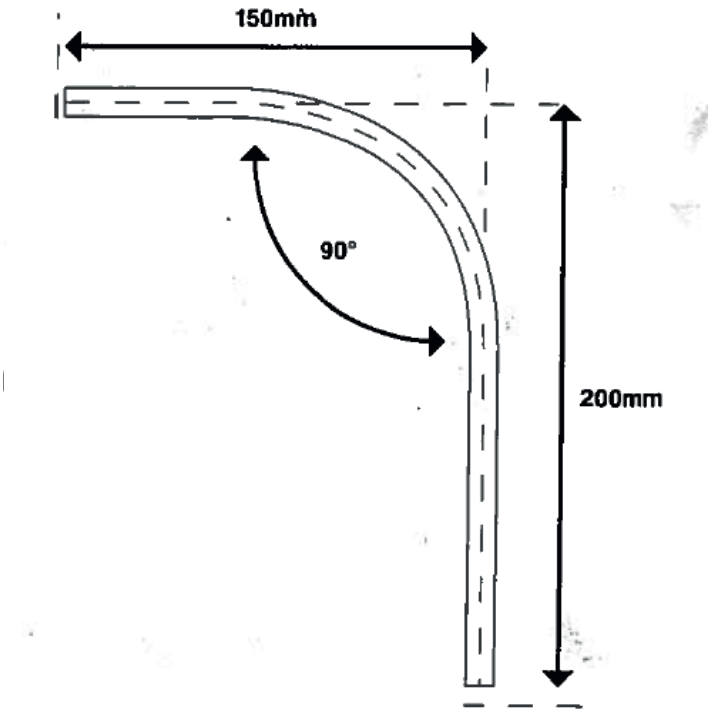
Dimensions Correct	
Bends free from distortion	
No excessive markings	
Angles correct (+/- 3°)	
Good appearance	
Note dimensions (+/- 2mm)	

PASS/FAIL

Assessor's Signature: .....

Date: .....

15mm Copper Tube



Name: ……

Task 2: Bending Copper Tube 90°

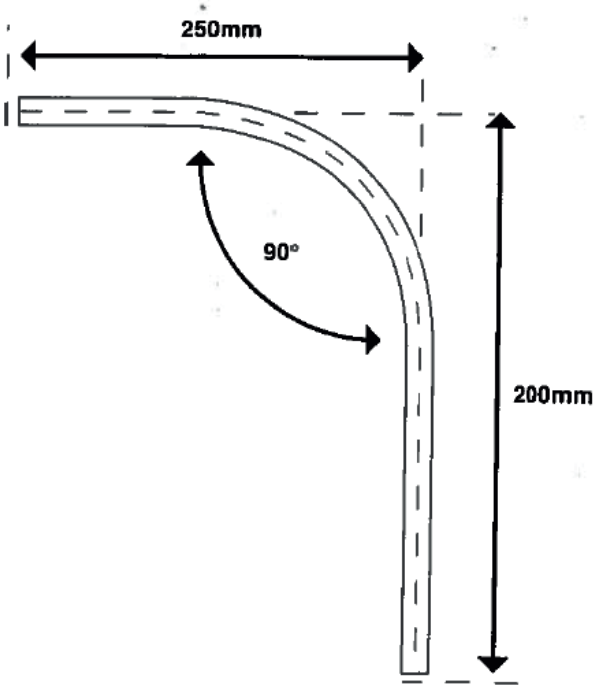
Dimensions Correct	
Bends free from distortion	
No excessive markings	
Angles correct (+/- 3°)	
Good appearance	
Note dimensions (+/- 2mm)	

PASS/FAIL

Assessor's Signature: ……

Date: ……

22mm Copper Tube



Name: ……

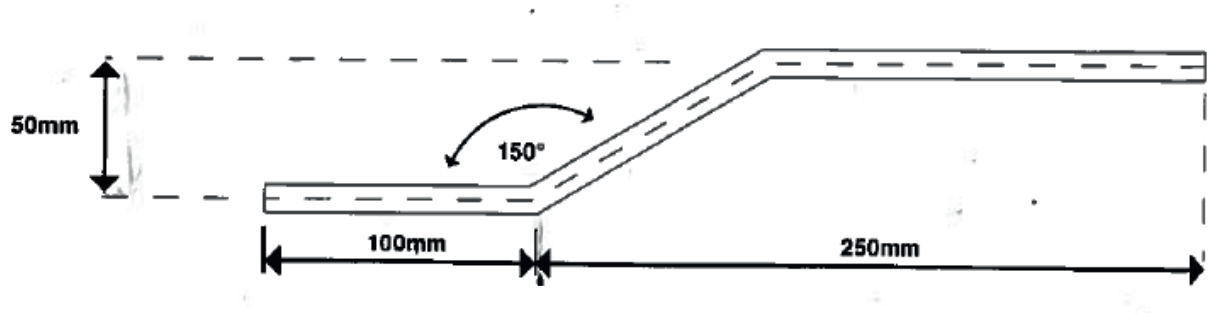
Task 3: Bending Copper Tube – Offset (x2)

Dimensions Correct	
Bends free from distortion	
No excessive markings	
Angles correct (+/- 3°)	
Good appearance	
Note dimensions (+/- 2mm)	

PASS/FAIL

Assessor's Signature: ……

Date: ……



15mm Copper Tube

Name: ……

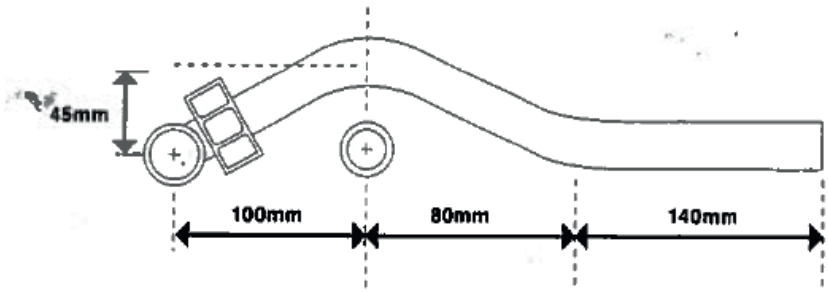
Task 4: Bending Copper Tube – Crossovers (2 sorts)

Dimensions Correct	
Bends free from distortion	
No excessive markings	
Angles correct (+/- 3°)	
Good appearance	
Note dimensions (+/- 2mm)	

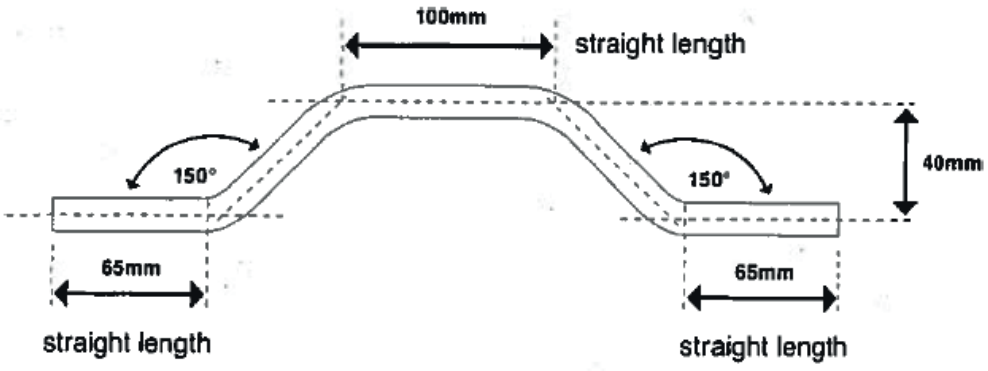
PASS/FAIL

Assessor's Signature: ……

Date: ……



15mm Copper Tube



Name: ……

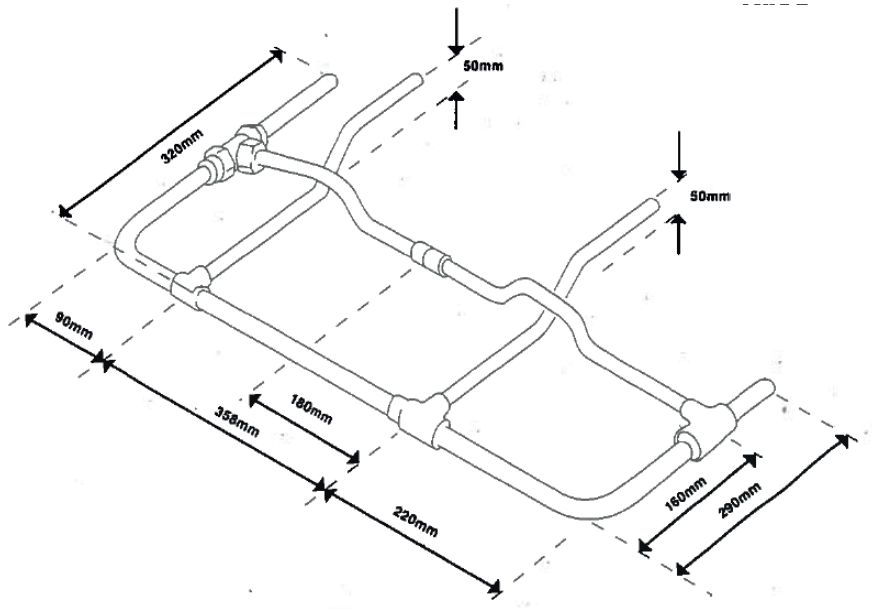
Task 5: Frame Assembly – Jointing Copper Tube

Dimensions Correct	
Bends free from distortion	
No excessive markings	
Angles correct (+/- 3°)	
No excess solder	
No leaks at 3 bar pressure	
Good appearance	
Note dimensions (+/- 2mm)	

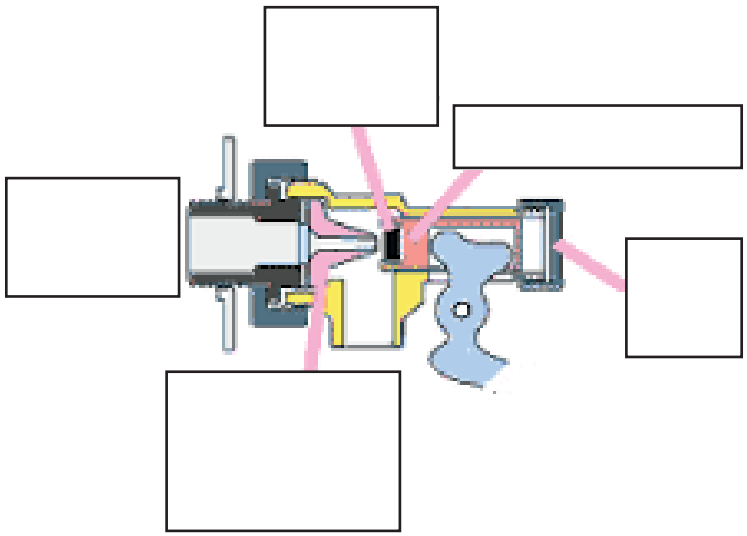
PASS/FAIL

Assessor's Signature: ……

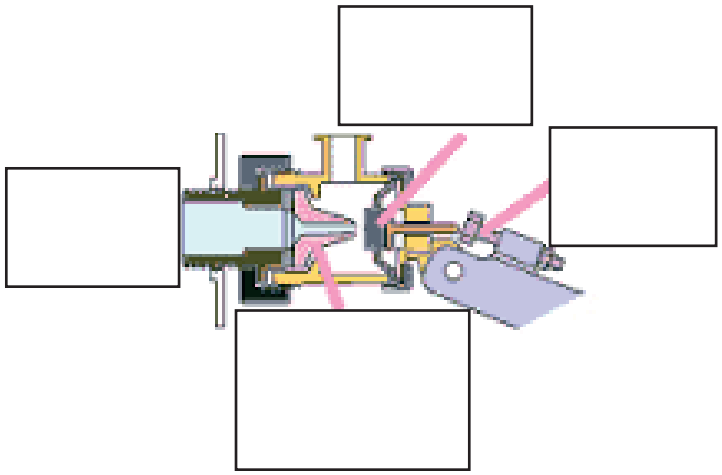
Date: ……



Label the two ball valves.



Part:



Part:

Measurement

Draw a line from the number to the corresponding place on the rule.
(See examples).

27mm 88mm1 23mm 101mm

36mm 73mm 115mm

1.3cm 6.5cm 7.7cm 12.6cm

3.4cm 8.7cm 10.9cm

7mm 6.3cm 56mm 147mm

2.9cm 7.2cm 118mm

The next few pages will give you some basic guidance to help you work through each task, reminding you of what you should be thinking about in your approach to the task and how you achieve the best possible result.

- You will be able (Where possible) to choose the order in which you work your way through the portfolio, but, once you agree with the tutor which task you are going to start you must complete this task before to proceed to the next chosen task. This is so that the tutor can track your progress with the correct dates and that you are working within the times allowed by C & G.
- Health and safety is very important, you will be given the necessary training you needed for each task. Any misuse of equipment will be dealt with accordingly. Make sure that you have had this training before you start each task.
- When using pressure testing equipment, you must use this responsibly as failure to do so could put yourself and others at risk of injury.
- When soldering make sure that you have received the necessary training before you start. Make sure you are soldering in the appropriate place with the extraction devices in place.
- Remember the correct clipping distances for each material.
- Be careful of where you place the clips on the pipework. You need to be able to take nuts off fittings so do not place the clips too close to the fitting. On soldered fittings you will melt the clip if it is fitted too close to a soldered joint. Overall the clipping will affect the look of the finished task so try and align the clipping for each pipe.
- Clean each joint so that is the look of the task is as best as it could be.
- Make sure that you practice your soldering on any scrap copper prior to soldering your work.
- When decommissioning you need to cut any bends off the pipework and scrap these. Save as much unbent copper and steal as possible (Anything 150mm or longer can be re-used, anything shorter can be scrapped). We only save unbent copper and steal for re-use; the bends must be scrapped accordingly.
- Always check tools for safety before you use them, if they are faulty ask the technician to repair them.
- All tools must be returned to the correct place in the store cupboards. If they are part of a set, they must be replaced in the appropriate boxes. All drills come in their own box, if you need to use a drill, take the box that it comes in with you and return it to the stores in this box when finished with.

Site Preparation 2

- Read the assessment criteria page for this task, when you are ready you need to make a tools and materials list for the task.
- Find some wall space and mark out the measurements on the wall with the appropriate tools.
- Drill/fix the clips to the two different surfaces and check tour results.
- If you are happy ask the tutor to assess your work.
- When your work has been signed off you can de-commission your work and leave your work area clean and tidy.

Above Ground Drainage 1

- Read the assessment criteria page for this task, when you are ready you need to make a tools and materials list for this task.
- Gather together all the tools and materials needed for the task (Remember to re-use any waste materials before you cut any new lengths down).
- Ask the tutor where you allocate you some wall space to do the task and then mark out the task on the wall.
- Remember that on the inside of these fittings there is information that you will need to comply with to assemble the task correctly.
- When the task is complete you need to test that it is working properly and that it measures correct and that your work area is clean and tidy.
- When you are happy you can ask the tutor to assess and grade your work.
- When your work has been signed off you can de-commission your work, recycling as much materials as possible for re-use.

Above Ground Drainage 2

- Read the assessment criteria page for this task, when you are ready you need to make a tools and materials list for the task.
- Gather all the fittings that you will need and measure their ‘X’ dimensions and make a note of them on a scrap piece of paper or on the drawing in your portfolio.
- Calculate the pipe lengths that you will need by subtracting the ‘X’ dimensions from the measurements given on your drawing. (Note them down on your drawing).
- Collect the rest of the tools and materials needed for the task (Remember to re-use any off-cuts where possible rather than cutting from full lengths of pipe).
- Cut and deburr the lengths that you need.
- Assemble the frame, remember to push the pipe all the way into the fitting to the required amount.
- Check your measurements, clean your work area, if you are happy, ask the tutor to assess and grade your work.
- When your work has been signed off you may de-commission your work recycling as much of the materials as possible for re-use.

Above Ground Drainage 4

- Read the assessment criteria page for this task, when you are ready you need to make a tools and materials list for the task.
- Ask the tutor to allocate you a work area, then draw out your task on the wall.
- Gather all the tools and materials needed for the task. (Remember to re-use any spare materials rather than cutting from new).
- Assemble the task as per your drawing having considered any 'X' dimensions.
- Clean your work area.
- Check your measurements, angles etc. if you are happy ask the tutor to assess and grade your work.
- When your work has been signed off you may de-commission your work recycling as much material as possible for re-use.

Copper 1

- Read the assessment criteria page for this task, when you are ready you need to make a tools and materials list for this task.
- You need to gather together all the tools and materials needed for this task (Remember to try and re-use any off-cuts before you cut into any new lengths).
- Measure the 'X' dimensions for the fittings you are going to use and make a note of these on a scrap piece of paper of on your drawing in your portfolio.
- Assemble the frame to the measurements required using the bending methods you have been shown.
- Check and measure your frame if you are happy with the accuracy then you may proceed onto soldering your frame providing you have been shown how to solder and have done your gas bottle safety training. (Be aware of people near you when soldering).
- When you are happy with all your soldering you can clean up your work area and pressure test your frame.
- If you have any leaks these need to be fixed before assessment.
- If your frame is leak free you can clean it up and ask your tutor to assess and grade your frame (Your tutor may need to see the frame whilst under pressure to check it is leak free).
- Do not de-commission your frame as you will need it for the next copper assessment.

Copper 2

- Read the assessment criteria page for this task, when you are ready you need to make a tools and materials list for this task. (This list only needs to contain the parts that your adding into your frame that you made in the previous task).
- You need to gather together the tools and materials needed for this task (Again remember to try and re-use the off-cuts).
- Measure the 'X' dimensions for the fittings you are using, note them down as previous.
- Assemble the next part of the frame using the bending methods you have been shown.
- Check your measurements, if everything measures correct then you are ready to solder. (Remember your safety training for the use of gas bottles and be aware of those around you).
- Pressure test your frame when you have soldered, if you have any leaks they need to be fixed.
- When leak free you can ask the tutor to assess and grade your task. (The tutor may wish to see the job whilst it is under pressure).
- Make sure that your work area is clean and tidy.
- When your work has been signed off decommission your job recycling as much material as possible for re-use.

Copper 4

- Read the assessment criteria page for this task, when you are ready you need to make a tools and materials list for this task.
- Gather together all your tools and materials and measure the fittings for their 'X' dimensions.
- Ask the tutor to allocate you a wall space for this task and then mark out the wall ready to assemble the task.
- Once you have assembled the task and checked your measurements and are happy with them you can proceed to solder the pipework. (Make sure you have taken all the safety precautions and are aware of others working around you).
- If you are happy with the quality of your soldering, make sure that it is presentable and then you can pressure test the job.
- If your job is leak free (Repair it if not), make sure that your work area is clean and tidy the ask the tutor to assess and grade your work. (Your tutor may wish to witness the task whilst it is under pressure).
- Once the task has been signed off you can decommission the job recycling as much material as possible.

Plastic Pressure Pipe 1

- Read the assessment criteria page for this task, when you are ready you need to a tools and materials list for this task.
- Collect your tools and material needed for this task.
- Measure the 'X' dimensions of the fittings that you are using, note them down on a scrap piece of paper or on the drawing in your portfolio.
- Cut the pipe lengths needed for the task (Remember to try and use any off-cuts first).
- Assemble the frame using the methods you have been shown. Make sure that the pipes are fully inserted into the fittings or it will not measure correctly.
- Check the frame measurements, if you are happy with them (Correct them if not) then you can pressure test your frame.
- If your frame is leak free (Correct it if not) ask the tutor to assess and grade your work.
- Clean and tidy up your work area.
- Once your work has been signed off you can decommission your frame remembering to recycle as much material as possible.

Plastic Pressure Pipe 2

- Read the assessment criteria page for this task, when you are ready you need to make a tools and materials list for this task.
- Gather together all the tools and materials needed for this task.
- Measure the 'X' dimensions of the fittings that you are using and make a note of them on a scrap piece of paper or on the drawing in your portfolio.
- Calculate your pipe lengths and cut the pipe needed for the task (Remember to use any off-cuts where possible).
- Make out the task on your allocated wall space.
- Assemble the task and check your measurements, adjust anything that is wrong.
- Clean and tidy up your work area.
- Once you are happy with the job you can pressure test the task. (Correct it if you have any leaks).
- If leak free ask the tutor to assess and grade your work.
- When the task has been signed off you can decommission the work remembering to recycle as much material as possible.

Low Carbon Steel 1

- Read the assessment criteria page for this task, when you are ready check with the tutor that you are okay to cut the steal needed for this task.
- Make sure you have been shown how to use the bending machine in the correct manner.
- When you have completed the two bends ask the tutor to assess and grade your work.
- Do not scrap this work as you will need it for the next LCS task.

Low Carbon Steel 2

- Read the assessment criteria page for this task, when you are ready you need to make a tools and materials list for this task.
- Gather together all the tools and materials needed for this task.
- Measure the fittings for their 'Z' dimensions and make a note of them on a scrap piece of paper or on the drawing in your portfolio.
- Assemble the frame to the dimensions given. (Make sure that you are aware of the correct methods of cutting the steal).
- Make sure that you are using the correct jointing methods stated in the portfolio.
- Check the measurements of your frame and make any adjustments needed.
- Pressure test your frame to the correct pressure (Your tutor will need to see this frame whilst under pressure). Make sure the joints are clean and tidy.
- If leak free (Adjust, if not) ask the tutor to assess and grade your work.
- Make sure your work area is clean and tidy.
- Once your frame has been signed of you can decommission it remembering to recycle as much material as possible.

Low Carbon Steel 3

- Read the assessment criteria page for this task, when you are ready you need to make a tools and materials list for this task.
- Gather together all the tools and materials needed for this task.
- Measure the fittings for their 'Z' dimensions and make a note of them on a scrap piece of paper or on the drawing in your portfolio.
- Draw out the task on your designated wall space.
- Assemble the task to the dimensions given, using the correct jointing methods you have been shown.
- Check your measurements and adjust if necessary.
- If everything is correct clean and tidy your work area and pressure test your frame to the required pressure (Your tutor may need to see this under pressure).
- When your task has been signed off you can decommission your work, remember to recycle as much material as possible.

Level Two Plumbing Studies

The following set of tasks are designed to get you the student into thinking as a plumber and realising what is part of the everyday tasks that a plumber must do to run a business. Most of the actual plumbing skills will be learnt within your Level 2 course, here we are aiming to show you some of the other tasks that a plumber does without the need for tools and materials. Job applications, job cards, estimates, invoicing and calculations are all skills that a plumber managing his own business needs to have. You can produce each piece as a word document if you prefer and insert it into the relevant task or keep it in a separate folder to present to your tutor.

Within this booklet you will be asked to create a company name etc. this needs to be a fictional name so do not put in any personal details.

Contents

TASK ONE

Job Application Letter

In this task you will be asked to compile a letter applying for a position that has been advertised with a local plumbing company. The vacancy is for a trainee Plumbing and Heating Engineer. Write a letter of application, setting out why you would like the job and the skills that you have that you think would make you suitable for the job. You must also provide a current CV to accompany the application.

HOW PLUMBING SERVICES

Location: Worcester

Salary: £15,000 – rising to £18,000 per annum on qualification

We are currently looking for a trainee to join our team, this applicant must be committed, ambitious and have a desire to learn a full range of plumbing and heating systems. The successful applicant would start immediately and join our team as a trainee attending college to attain the relevant qualification whilst also learning on site with a mentor.

The successful applicant must also have:

- Ambition
- Clean and tidy appearance
- Enthusiasm to work hard
- Be able to work as part of a team

Please send your written application to Mr A Smith, 22 Old Road, Worcester, WX2 4HG

TASK TWO

Filling in a Job Card

Fill in all the sections of this job card for a Worcester Greenstar CDi Compact boiler, serial number WS999887421, that has been booked in for an annual service. During the service some parts needed replacing including: Primary sensor, seals on the PCB fuse and an air pressure switch hose. The customer's details are: Mr A Smith, 22 Old Road, Worcester, Worcestershire WR2 5HG. The owner will only be available on her mobile during the day the work is carried out. Her mobile number is 07777 300111.

CUSTOMER NAME:	DATE:	TIME:
ADDRESS:		
TEL HOME:	TEL WORK:	
MAKE OF BOILER:	DATE OF NEXT SERVICE:	
MODEL:		
SERIAL NUMBER:		
WORK REQUIRED:		
DETAILS OF EXTRA WORK CARRIED OUT:		
PARTS USED:		
BOILER SAFE TO USE?		
INVOICE DATE:	INVOICE NO:	
CUSTOMERS SIGNATURE		

Work carried out on a job card

If you are working as a 'Plumber' it is quite possible that you will have to fill in a job card to record the work that you do each day. The reason for this card is so that your employer can charge the customer for all of the work that has been carried out, including all of the parts and labour and importantly that they pay you correct pay for the work you have done.

Question 1

You have been called out to repair a toilet which is not flushing properly. You need to look at the problem and diagnose what needs to be done to rectify the problem. Give a full write-up of the work carried out.

Answer:

Question 2

Your customer has reported that water is dripping from an overflow pipe from the tank in the loft. Give a full write-up of the necessary work needed to solve the problem.

Answer:

Question 3

A customer has asked you to install an outside tap. Give a full write-up of the necessary work needed to install the tap including all of the necessary fitting that you must use.

Answer:

Question 4

A customer has complained that her cold water tap in her kitchen is constantly dripping. Give a full write-up of the work needed to repair/replace the tap.

Answer:

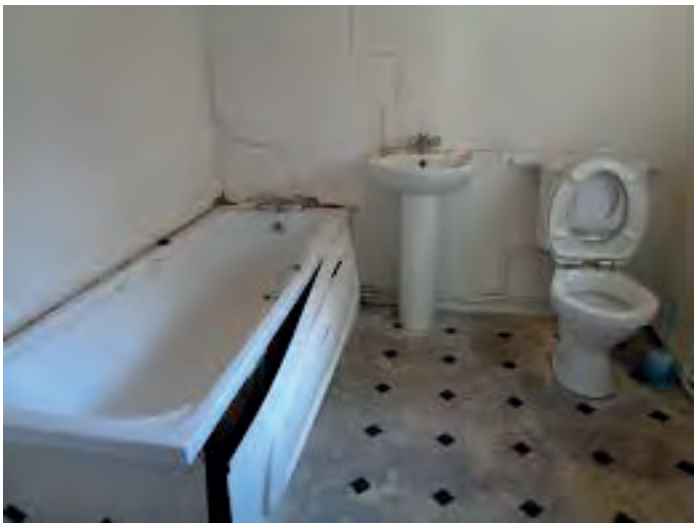
TASK THREE

Filling in an estimate

Bathroom Re-fit Estimate Task

An estimate is not a fixed total price and can be amended as work progresses. A quotation is a fixed price and cannot be changed once given. Most plumbers opt to give estimates for reasons of flexibility. Estimates should include:

- Cost of Labour
- Cost of Materials
- Details of work to be carried out
- Estimated duration of time to complete the work
- Any health and safety issues
- Full total cost for completed work

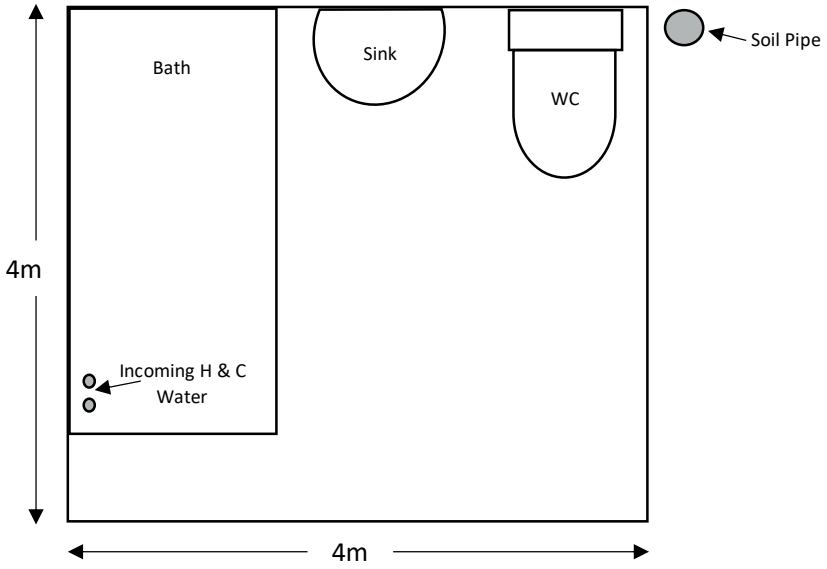


A customer has requested an estimate to replace a bathroom suite. Using the information given, provide a full detailed estimate of necessary work and cost to replace the bathroom suite. You will be given the bathroom size on the next page. You are to replace the suite with some basic items as listed. You will be replacing all above floor pipework for new copper and waste pipe. You will be connecting onto any existing hot and cold pipework under the floor. Wastepipe can be connected to existing underfloor pipe. The soil pipe can be re-used using a new pan connector. Use the Screwfix website or the Screwfix catalogue to obtain any prices for the materials that you need.

New suite comprises of:

- Basic Toilet-To-Go (Toilet and cistern with fittings supplied in one box).
- Basic Basin-To-Go (Basin and Pedestal in one box, note no taps or fittings come with this item).
- Basic Bath-To-Go (Assume that both side and end bath panel come with this but no taps or fittings.

Work out how much copper and plastic pipe you need together with all fittings and furnishings needed for each piece of the bathroom suite. Go onto the Screwfix site and price everything up including the suite, pipework fixtures and fittings, clips screws and consumables etc.



The following two pages contain an estimate that a plumber may fill in to give to his customer. Fill it in as best you can and give your company a name (nothing rude please!) and present it to the tutor so that we can compare them in class later.

Notes:

Insert your company name here	Customer:
	Address:
	Phone No:
Description of work to be carried out:	

Materials			
Item	Quantity	Price	Amount
		Total:	

Labour		
Hours	Rate	Amount
	Total:	

Acceptance of estimate		Total estimate	
Signature:	Date:	Total materials	
		Total labour	
		Subtotal	
		VAT	

TASK FOUR

Filling in a risk assessment

The idea of a risk assessment is to make you aware of the possible dangers before you start work. Here you are being asked to complete a risk assessment form to see if you can pick up some or all of the dangers that the job entails.

Your customer has asked you to replace the cast iron guttering and down pipe on his property with new plastic guttering and downpipe. Use your own home as if it were the customers property. You can imagine that the guttering is cast iron and needs replacing. Remember to look at the task and try and assess as many dangers as you can. Start by identifying the hazard, who is at risk, where the hazard is, the level of risk and if there are any further actions such as permits needed, specialist equipment needed etc. that need to be put into place before you start. Use the same customer name and address as in previous tasks.

RISK ASSESSMENT FORM

Company Name:					
Site address:					
Customer Name:			Assessment conducted by:		
Date of Risk Assessment:					
Hazard	**Persons at risk**	**Property which may be damaged**	**Location on site**	**Risk Level (Low, Medium, High)**	**Further action needed**

TASK FIVE

Completing an invoice

In this task you are required to fill in your final invoice to your customer requesting their payment. You can use the guttering task that you have just completed in your risk assessment as the job that you have undertaken. Obtain all of your prices from either Screwfix online or a Screwfix catalogue. Price up the hire of any equipment, fixtures and fittings used and your labour. VAT would be charged at 20% and it is up to you if you offer any sort of discount. Used your company name that you have been using throughout this booklet.

Company name here:

INVOICE

Date:
Invoice No:
Customer Name:

MATERIALS USED	AMOUNT

Description of work carried out:

SUBTOTAL	
VAT RATE	%
DISCOUNT	
OTHER	
TOTAL PAYABLE	

PLEASE NOTE:
Payments are due on, or within ten days.
Please include invoice number on your cheque.
Please make your cheque payable to:

If you have any query about this invoice, please contact: ……

THANK YOU FOR YOUR BUSINESS

TASK SIX

Dealing with a letter of complaint

Using the guttering task, you did previously, we would like you to compose a letter in response to a complaint that you have received about the standard of the work carried out by your employee(s) and the fact that the guttering is leaking and coming away from the wall in places. Remember that you are the employer and that it is your business and reputation that is at stake here. Try and include as many details as you can to your customer in response. When dealing with complaints they must be dealt with as soon as possible with both parties being happy with the resolution. You could have the thinking that the customer is always right, but this does not necessarily always be the case. It is important that you are in contact with the customer either on site or by telephone within a short time of receiving the complaint. It may be an advantage to go and look at the work yourself and act accordingly. Remember written communication is always advisable if the dispute goes further as you will have documented evidence if needed.

TASK SEVEN

English

As a plumber with your own business to will at some point have to communicate with your customers in a written form such as estimates, quotes, invoices and perhaps letters of thanks or responses to complaints. It is always an advantage to have written communications if there is any dispute situation, as this can be proof of what has transpired between you and your customer.

We have given you some words below (they are not all there, if you wish you can include others on a separate piece of paper). These are examples of the various punctuation that you would use in any written correspondence to your customer. What we want you to do is give a brief description of what each word means so that you understand how to use the punctuation marks.

Word	Description and where it might be used
Capital Letter	
Comma	
Question Mark	
Noun	
Paragraph	
Verb	
Decimal Point	
Colon	
Semi Colon	
Full Stop	
Adjective	
Quotation Marks	

Give a description of the following plumbing terms:

Term	Description
Ball Valve	
Cistern	
Cylinder	
Drainpipe	
Estimate	
Hazard	
Hydraulic	
Invoice	
LCS	
LPG	
MM	
Metre	
MDPE	
O-ring	
PPE	
Quotation	
Radiator	
Radius	
Risk Assessment	
SEDBUK	
Sewer Pipe	
Soil Pipe	
Storage Cistern	
Water Pressure	
WC Cistern	
‘X’ Dimension	

There are various errors in the punctuation of the following paragraph. We have given you extra space within the text to circle and number where these errors can be rectified with the correct punctuation. List below what corrections you think should be made.

John is a local plumber who has been in business for over 20 years. He employs 4 people who work for him fulltime he is asking one of his employees to do a job that has been booked in for the following day david I need yoo to go to see Mrs Jones at 44 Long Street tomorrow and do a boiler service all the details are on the job card in the office.

Ok not a problem David replys I will probably be their all day judging bye the problems we had last time.

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TASK EIGHT

Maths

In the following question you may have to use some of the following formulae.

Circumference of a circle: C = π x d (circumference, π = 3.14, d = diameter)

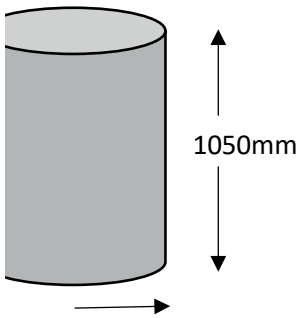
Area: length x breadth and is given in square units (l x b)

Volume: length x width x height and is given in cubic units (l x w x h)

Volume of a cylinder: π (3.14) x r^2 (radius x radius) x height (π x r^2 x h)

Use the paper at the end of the book to show your calculations.

1. You have a wall which measures 4m x 2.5m. How many 250mm x 400mm tiles would you need to buy to cover this wall completely?
2. If the tiles in the above question cost £3.25 each how much would it cost to buy the correct amount needed?
3. If a bundle of copper (10 x 3m) costs £98.10. how much does it cost per metre?
4. How much does the above bundle of copper cost when you add VAT at 20%?
5. You have a water storage tank in your loft. It measures 1050mm x 795mm x 600mm to the water level. Calculate how much water it will hold and how much it will weigh (show your answers in Litres and kilogrammes).
6. Work out the volume of the following cylinder.



7. What is the circumference of the above cylinder?
8. If I buy 300 endfeed elbows at £0.11p each and 15 compression tees at £1.58p each, how much will I pay after I have added the Vat @ 20%?
9. If I am paid £10.50p per hour and I work a 37-hour week and I am deducted 24% in tax and national insurance, what will my take home pay be?
10. If I hire a scaffold tower for £74 per day and pay in advance for 7 days, how much will it cost? Because I am a loyal customer the hirer has offered to give me a 10% discount, how much will it cost after the discount has been applied?

Calculations

Suggested Materials

Suggested materials to read or research, things to listen to or watch

Manufacturers catalogues, City and Guilds level 1 & 2 Diploma in Bricklaying, YouTube, www.City&Guilds.com www.Gov.co.uk www.hse.co.uk

Indicative time for this project:

Minimum of 10 hours to a maximum of 40 hours

Instructions on how to submit this:

As a complete document either electronically or paper format or in individual tasks when completed (Preferably as a whole document).

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How will I benefit from this project:

I will have the acquired knowledge from these tasks to assist me with the starting subject in my level 1/2 qualification.

What can I expect to get back after I submit my project work:

Your work will be marked by a tutor from your course and you will be given feedback. You can then use this knowledge as a revision facility for your course.

Key information you should include:

Your name

Your email address

A contact telephone number