

Carpentry

Level – L1/2

Type of Pack: Taster/Introduction



Name:



**Prison
Education**

 HM Prison &
Probation Service

INTRODUCTION

Hello...

We hope you find this **Taster/Introduction Pack to Carpentry** easy to follow and interesting whilst in Lockdown.

Within this pack there is variety of activities that you may see when starting on the course and health and safety questions and answers (health and safety is a unit that is completed in all construction courses).

You may not be able to complete all of the questions, but do not worry, this is just a sample of the type of work that you will learn to complete whilst on the course.

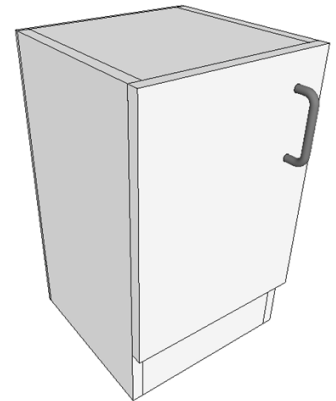
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Carpentry

Construct a Cupboard

This Taster Pack provides guidance to help you construct a cupboard. The Practical element for the cupboard construction is shown below. You would work through these tasks when in a workshop.



- Cut materials to your cutting list.
- Assemble the cupboard using screws.
- Hang the door and fit handle as specified.
- 1 adjustable shelf positioned central in height.
- Clean up cupboard ready to apply a finish.

Functional Skills

The information and questions on the following pages work through some of the English and Maths skills required to complete this project.

Additional information- you will learn about these terms in the course

Screws countersunk flush with surface.

Pilot hole screws before fixing to prevent splitting.

Shelf supports 50 mm centres with 5 adjustments to suit shelf width.

Door surfaces mounted on 2 no. hinges 75 mm in from the edge.

Handle fixed 50 mm in from top and edge.

Countersunk screws approximately 2½ x material thickness

Metal shelf supports as appropriate

Sprung concealed screw-on hinges 110°

D Pull handle approximately 100 mm

Dimensions -these are the measurements of the cabinet

500 mm height x 300 mm width x 300 mm depth

Shelf 250 mm wide, length to suit cupboard

Plinth 100 mm high

Materials required

Medium Density Fibreboard (MDF)

- 18 mm: Sides, top, base, plinth, door, shelf
- 6 mm: Back

Ironmongery required

Sides

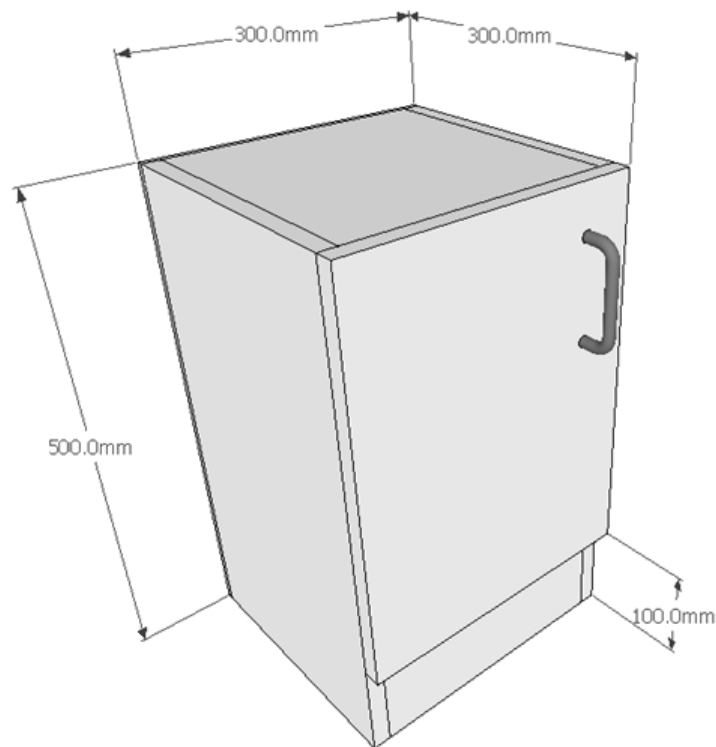
- 16 x 4.5 x 40mm no screws to fix top and base 50 mm in from both edges
- 2 x 4.5 x 40mm screws to fix plinth 25 mm in from both edges

Back

- 4 - 4.5 x 40mm screws to fix top and base 50 mm in from both edges
- 6 – 4.5 x 40 mm screws to fix sides 50 mm in from both edges & central in height (to prevent splitting the materials)

Section 1 - Practice Questions

1. You will need to complete a cutting list for all parts of the cupboard (door, back etc) – use the dimensions on the diagram below to calculate and complete the table below



Item	Qty	Length	Width	Thickness	Material

2. When you make a large object, you work with a smaller scale so that your drawings are manageable. See if you can calculate the measurements and draw the scaled sheet of MDF below.

A sheet of MDF measures 2440 mm (8ft) long x 1220 mm (4ft) wide.

Draw the outline of a sheet of MDF below using a scale of 1:20 (do not worry if you do not have a ruler, a freehand drawing is fine)

Label your drawing with the length and width of the outline in mm.

These are some of the maths skills that you will need and learn on the course

What is the area of the sheet of MDF? (area = Length x Width)

Work out your answer here

Answer

.....m²

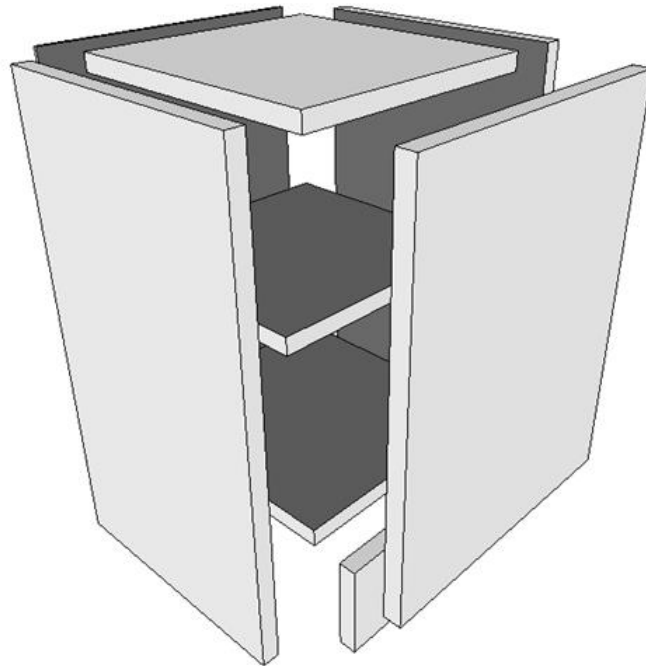
What is the perimeter of the sheet of MDF? (add all lengths and Widths)

Work out your answer here

Answer

.....m

3. Before you start your build, you will need to mark out your components and drill clearance holes for the screws, these which will also be countersunk (to enable a flush finish) from the outside.



Based on this information which parts of the cupboard will need drilling?

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Which size screws will you use?

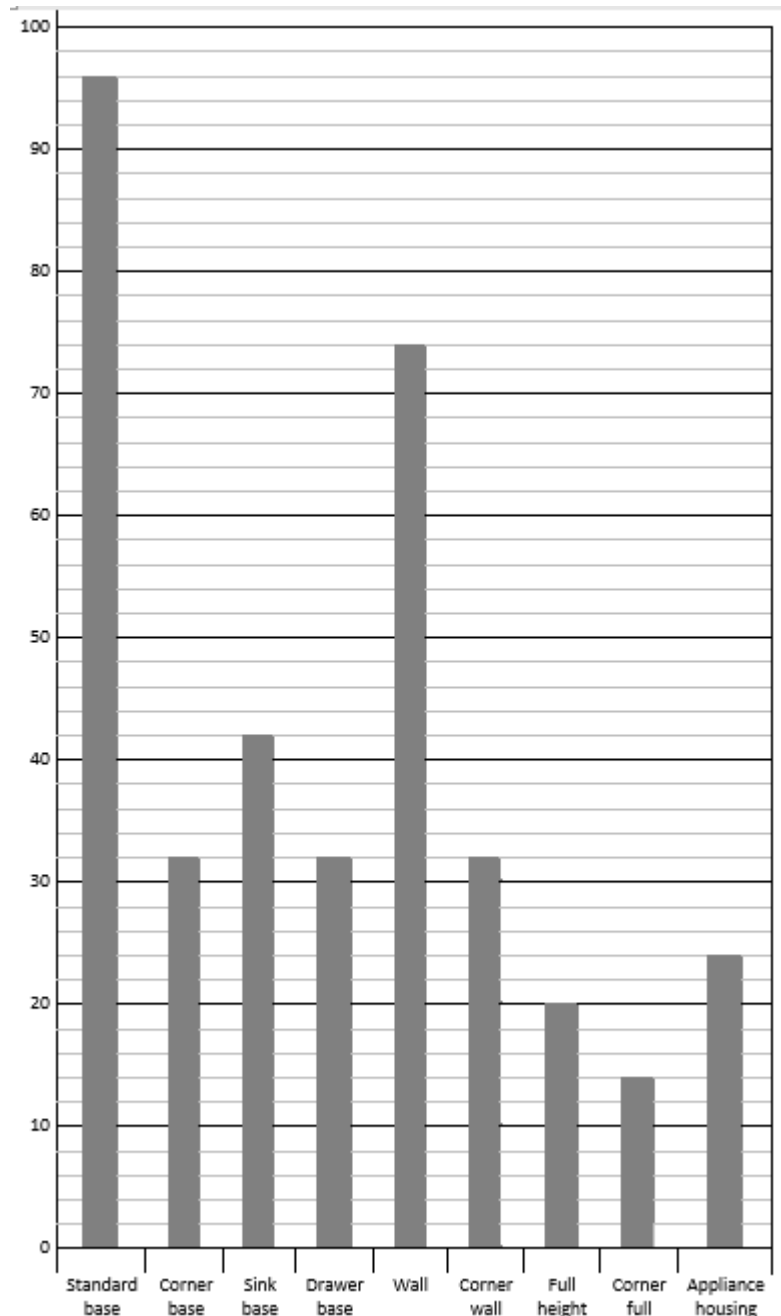
What size holes do you need?

Why will you need to countersink the holes?

.....

.....

4. The number of kitchen cupboards sold by a company during a week is illustrated using a bar chart show below.



Which is the most common type of cupboard sold?

Which is the least common cupboard sold?

How many sink base cupboards were sold?

What is the difference between the corner wall cupboards sold and corner full height cupboards sold?





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Section 2


On construction courses you may be asked to complete a range of multiple-choice questions on a particular topic. Example below

Housing Joints

Housing joints are used to joint timber together for stud work, and for other supporting timber framework such as door linings. There are different types of housing joints, but the basic ones are the Through, Stopped, and Tongued, the practical test will involve making a Tongued housing.

			
Through Housing	Stopped Housing	Dovetail Housing	Tongued Housing

In order to make this type of woodwork joints a Carpenter will use some key basic tools and resources such as the ones below:

					
Tape Measure	Hand Saw	Chisel	Combination square	Plane	Mallet
					
Claw Hammer	Rasp & Files	Tenon Saw	Wood glue	Nails	Screws

The use of hand woodworking tools to produce these joints is used on the course, but machinery can be used to increase production time and maintain consistent accuracy on larger production runs.

As always, following correct health and safety is very important, with the use of PPE, and approved codes of practise. These include using the tools in the proper manner, tool maintenance, and good housekeeping (clearing up, and material storage).

Section 2 - Practice Questions

Here are some multi choice questions that have only **one correct answer**.

See how many you can get right and remember to try to answer all the questions.

- 1. Which housing joint will you build in your carpentry course?**
 - A. Through housing joints.
 - B. Tongued housing joints.
 - C. Mortise and tenon joints.
 - D. Dowel joints.

- 2. Which tools do you think you would use when measuring for housing joints?**
 - A. Square, chisel, mallet, and tenon saw.
 - B. Mallet, chisel, square, and hammer.
 - C. Square, chisel, mallet, and hand saw.
 - D. Square, tenon saw, mallet, and a rasp/file.

- 3. What can be used to fix the housing joint together most effectively?**
 - A. Glue and wood screws.
 - B. Glue and panel pins.
 - C. Glue and wedges.
 - D. Glue.

- 4. Why is a tongued housing joint better than a through housing joint?**
 - A. The tongued housing joint uses less timber.
 - B. The tongued housing joint has a shoulder that helps to keep it at 90 degrees.
 - C. The tongued housing joint is not a better joint.
 - D. The tongued housing joint is easier to produce.

Section 3

On many courses you will be required to complete a unit on Health and Safety which will have a multiple-choice assessment.

Health and Safety

The Health and Safety unit has some pre-notes with questions that will need to be read before the actual test. This is especially important if you do not have, or have not studied health and safety in construction, for a while.

The main subject areas are **Hazards and Risks**, **Safety Signs**, and **HSE**.

Hazards and Risks

A hazard is something that can cause harm or damage, for example noise, the working area, access equipment, tools, and materials.

A risk is the likelihood that a hazard will actually cause harm or damage and is assessed from low to high.

Safety Signs

In construction there are 5 categories of safety signs **Mandatory**, **Prohibitive**, **Safe Condition**, **Warning**, and **COSHH**.

Mandatory (you must do) safety signs are a blue circle with an image in white in the centre. They are used to give instructions and actions that must be done, such as specific PPE that must be worn.

Prohibitive (you must not do) safety signs are a red circle with a diagonal line through it and a black image on a white background in the centre. They are used to stop certain behaviour, such as no smoking.

Safe Condition signs are green with an image in white in the centre. They are used to show escape routes, assembly points, and where specific safety equipment is sited.

Warning safety signs are a yellow triangle with black boarder and a black image in the centre. They are used to warn of hazards or hazardous material, such as flammable.

COSHH (Control of Substances Hazardous to Health) safety signs are a white diamond with a red boarder and a black image in the centre . They are used on containers of chemicals (hazardous substances) such as Explosives. These signs have replaced the old European signs which were an orange square with a black boarder and a black image in the centre.

HSE (Health and Safety Executive)

The HSE is a government agency that is responsible for regulation and enforcement of workplace health, safety and welfare, and they research and monitor occupational risks. They have to be notified of larger scale construction projects under CDM (Construction Design Management) regulations and have to be notified if serious accidents and breaches of health and safety law occur. The HSE issue improvement and prohibition notices, publicise health and safety workplace regulations, and instigates prosecution which can lead to fines and or imprisonment.

Section 3 - Practice Questions

1. What is a hazard? Choose the most accurate answer.

- A. A hazard is the likelihood that a hazard will actually cause harm or damage.
- B. A hazard stops accidents from happening.
- C. Hazards rarely exist and can cause harm.
- D. A hazard is something that can cause harm or damage.

2. What is a green safety sign with a white image in the centre?

- A. A safe condition sign.
- B. This type of sign no longer is being produced.
- C. A warning sign.
- D. A mandatory sign.

3. COSHH safety signs are found where? Choose the best answer.

- A. On walls of buildings.
- B. On specialist clothing of construction workers.
- C. Food labelling.
- D. Product containers containing chemicals.

4. Do larger scale construction projects have to be notified to the HSE.

- A. True.
- B. False.

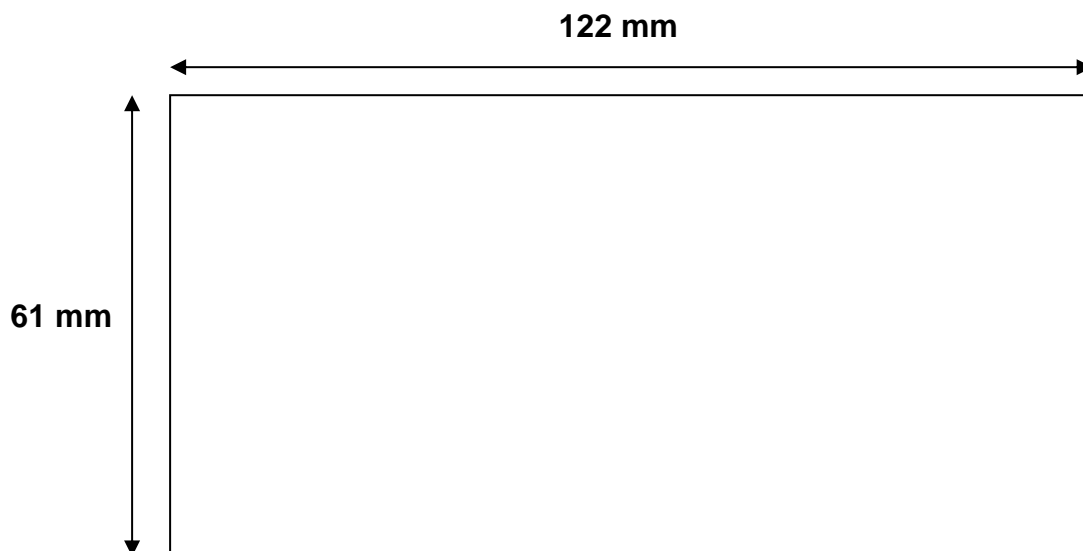
Answers - Section 1

1. Complete the cutting list for the cupboard using the dimensions shown below.

Item	Qty	Length	Width	Thickness	Material
Sides	2	500 mm	276 mm	18 mm	MDF
Top	1	264 mm	276 mm	18 mm	MDF
Base	1	264 mm	276 mm	18 mm	MDF
Plinth	1	264 mm	100 mm	18 mm	MDF
Back	1	500 mm	300 mm	6 mm	MDF
Door	1	400 mm	300 mm	18 mm	MDF
Shelf	1	262 mm	250 mm	18 mm	MDF

2. A sheet of MDF measures 2440 mm (8ft) long x 1220 mm (4ft) wide.

Draw the outline of a sheet of MDF below using a scale of 1:20



What is the surface area of a sheet of MDF?

$$2.44 \text{ m} \times 1.22 \text{ m} = \underline{2.977 \text{ m}^2}$$

Answer

$$\underline{2.977 \text{ m}^2}$$

What is the perimeter of a sheet of MDF?

$$2.44 \text{ m} + 1.22 \text{ m} + 2.44 \text{ m} + 1.22 \text{ m} = \underline{7.32 \text{ m}}$$

$$2.44 + 1.22 \text{ m} \times 2 = \underline{7.32 \text{ m}}$$

Answer

$$\underline{7.32 \text{ m}}$$

3. Based on this information which components will need drilling? **Sides and back**

Which size screws will you use? **4 x 45 mm (18 mm x 2.5 = 45 mm)**

3.5 x 16 mm (6 mm x 2.5 = 15 mm)

What size holes do you need? **4.5 or 5 mm**

4 or 4.5 mm

Why will you need to countersink the holes? **To allow the head of the screw to sit flush with the surface.**

4. Which is the most common type of cupboard sold?

Standard base

Which is the least common cupboard sold?

Corner full height

How many sink base cupboards were sold?

42

What is the difference between the corner wall

cupboards sold and corner full height cupboards sold? **18 (32 Corner wall, 14 Corner full height, 32 – 14 = 18)**

Answers - Section 2

1. Which housing joint is most commonly used to join a door lining together?
 - A. Through housing joints.
 - B. **Tongued housing joints.**
 - C. Mortise and tenon joints.
 - D. Dowel joints.

2. Which tools do you think should most likely be used to make halving joints?
 - A. **Square, chisel, mallet, and tenon saw.**
 - B. Mallet, chisel, square, and hammer.
 - C. Square, chisel, mallet, and hand saw.
 - D. Square, tenon saw, mallet, and a rasp/file.

3. What can be used to fix the housing joint together most effectively?
 - A. **Glue and wood screws.**
 - B. Glue and panel pins.
 - C. Glue and wedges.
 - D. Glue.

4. What is a combination square used for ?
 - A. To measure all angles.
 - B. To make sure you have two sides on a corner.
 - C. **To mark 45 and 90 degree angles .**
 - D. To mark the wood.

Answers - Section 3

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- A. True.
- B. False.

