



Rewarding Learning

General Certificate of Secondary Education  
2016

Centre Number

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Candidate Number

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## Manufacturing

Paper 2  
Assessment Unit 3  
assessing  
Manufacturing Technology



GMA32

[GMA32]

**MONDAY 27 JUNE, AFTERNOON**

**TIME**

1 hour.

**INSTRUCTIONS TO CANDIDATES**

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.

Answer **all** parts of the one question in this paper.

The paper should be answered in relation to the Pre-Release Material.

You will be provided with a new copy of the Pre-Release Material.

You should **not** bring any of the material previously issued, or any notes made into this examination.

For Examiner's use only	
Question Number	Marks
(a)	
(b)	
(c)	
(d)	
(e)	
(f)	
(g)	

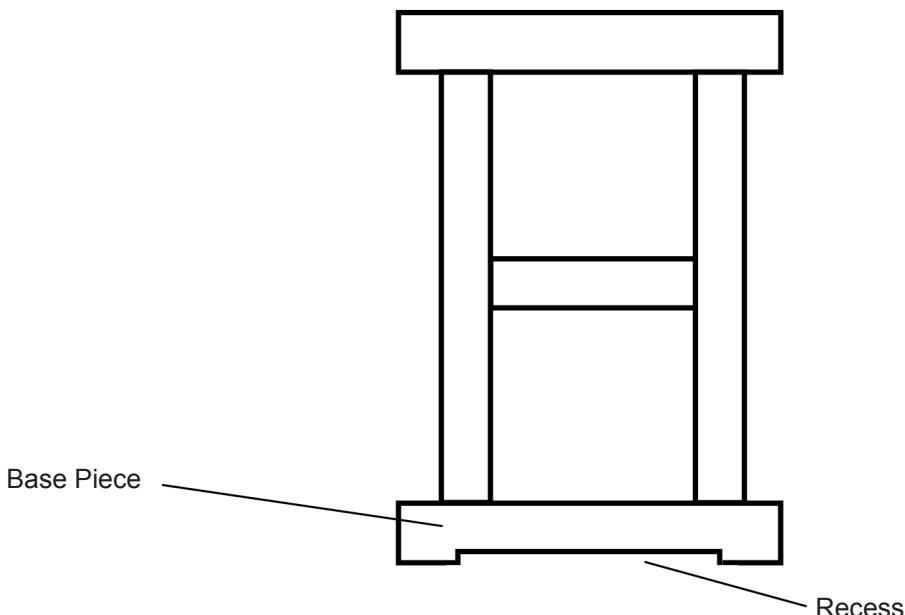
Total Marks	
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1 (a) The pre-release material shows a wooden workbench. Identify **two** aspects of this workbench that are different to the workbench used in your school manufacturing workshop.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

(b) **Fig. 1** is a drawing of the end frame of the workbench shown in the pre-release material.



**Fig. 1**

(i) Outline, giving **two** reasons, why the end frame of this workbench uses a base piece as shown in **Fig. 1**.

1. \_\_\_\_\_

[1]

2. \_\_\_\_\_

[1]

(ii) Each base piece is recessed as shown in **Fig. 1**. Using **two** discussion points describe why this recess has been included in the design of the base pieces.

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[4]

(c) In the assembly of the workbench an adhesive was used.

(i) Name **one** suitable adhesive that could be used.

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[1]

(ii) In addition to the adhesive what other joining method could be used?

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[1]

(d) CAD is used in the design of the workbench and CAM is used in its production.

(i) Identify **two** benefits of using CAD in the design of the workbench.

1. \_\_\_\_\_

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[1]

2. \_\_\_\_\_

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[1]

(ii) Prior to the use of CAM, the workbench was manufactured by traditional methods. Identify **two** possible challenges that the company may have experienced when introducing CAM.

1. \_\_\_\_\_

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[1]

2. \_\_\_\_\_

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[1]

Examiner Only	
Marks	Remark

(e) (i) The surface of the workbench has a varnish applied to it. Why would varnish be more suitable than an oil finish for the workbench?

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[2]

(ii) The manufacturer applies the varnish using an automated spraying facility. Discuss **one** reason why a manufacturer might use an automated spraying facility to apply the varnish.

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[2]

(iii) It is important that manufacturing companies comply with Health and Safety legislation to ensure that their employees are safe. The production of the workbench requires the use of a computer controlled router.

List **two** Health and Safety rules that operators should follow when using this machine.

1. \_\_\_\_\_

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[1]

2. \_\_\_\_\_

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[1]

Examiner Only	
Marks	Remark

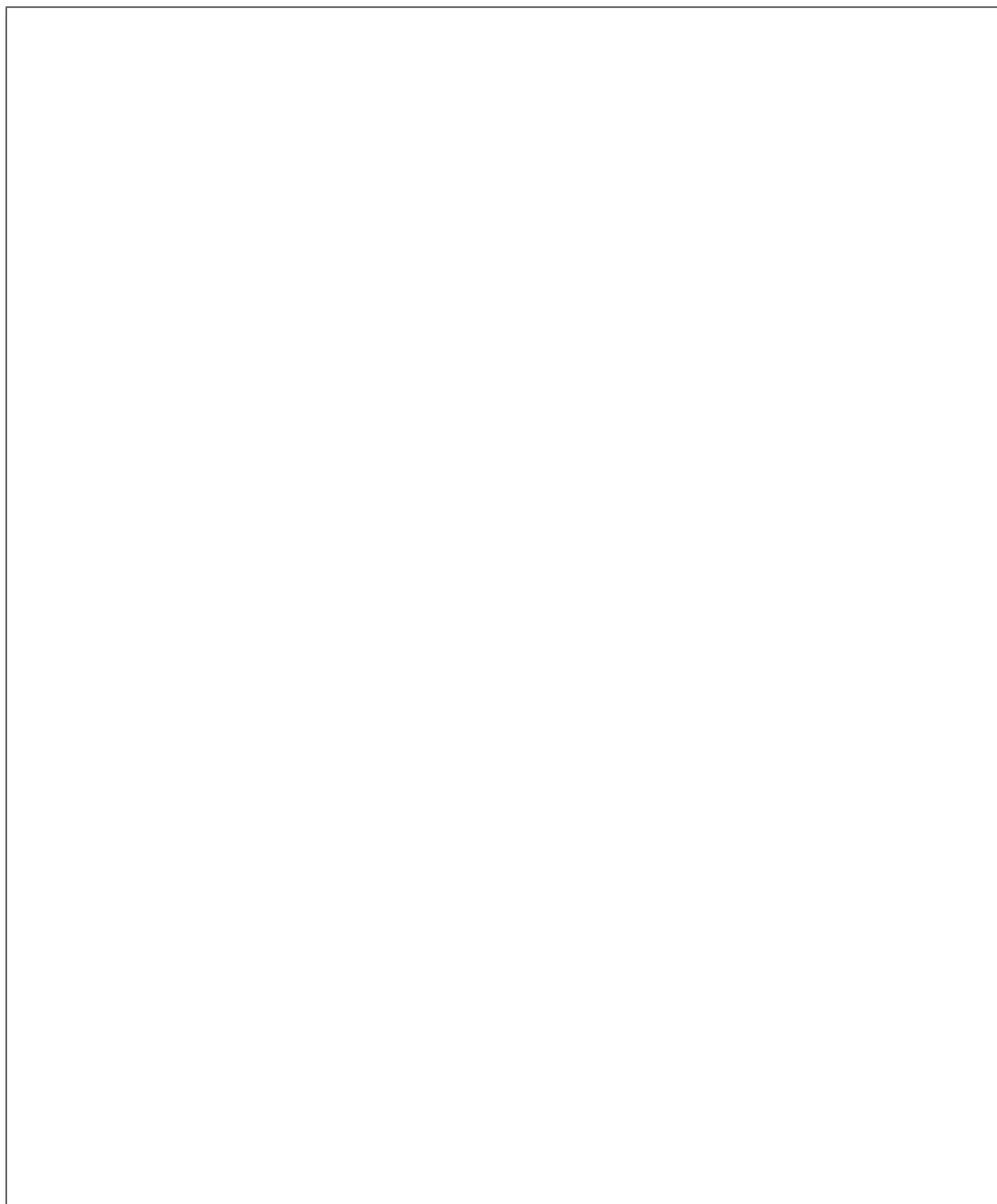
(f) The workbench is a durable piece of equipment for woodworkers and DIY enthusiasts.

In the box below, using annotated sketches and appropriate terminology, show and describe how:

- the drawer is fitted to the workbench
- it will close flush with the work top
- it will remain attached to the bench when opened.

Marks will be awarded for:

- detail contained in sketches [4]
- quality of sketches [3]
- detailed notes [3]



[10]

Examiner Only	
Marks	Remark

(g) Identify and discuss **five** key areas of the design, development and manufacture of the workbench shown in the pre-release material.

**Quality of written communication will be assessed in this question.**

<b>Examiner Only</b>	
<b>Marks</b>	<b>Remark</b>

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**THIS IS THE END OF THE QUESTION PAPER**

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2016

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**Manufacturing**  
**Pre-Release Material**  
**EXAMINATION COPY**

Paper 2  
Assessment Unit 3  
*assessing*  
Manufacturing Technology



GMA32

**[GMA32]**

**MONDAY 27 JUNE, AFTERNOON**

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You must use **this** clean copy of the Pre-Release Material in the examination and **not** your own annotated copy.

## Manufacturing Technology Pre-Release Material

Answer **all** parts of the question

The image below shows a wooden workbench.



© Steve Gorton / Thinkstock

### Description

A robust wooden workbench designed for use by carpenters/joiners or woodworkers and DIY enthusiasts. The surface finish is a hard-wearing varnish that protects the hardwood surface from damage and wear and tear.

### Features include:

- Manufactured using a hardwood.
- Heavy duty vice.
- Sunken trough allowing the storage of tools and easy disposal of shavings and chippings.
- Peg holes to enable variable work positioning.
- A large shelf underneath the worktop.
- Large tool and accessory storage drawer.
- Worktop dimensions (LWH) 1400 mm × 500 mm × 86 mm.
- Overall dimensions including vice (LWH) 1520 mm × 620 mm × 855 mm.

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