



General Certificate of Secondary Education  
2015

Centre Number

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Candidate Number

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# Manufacturing

Paper 2

Assessment Unit 3

*assessing*

Manufacturing Technology



GMA32

[GMA32]

FRIDAY 19 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.

## INFORMATION FOR CANDIDATES

The total mark for this paper is 40.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each part question.

Quality of written communication is assessed in **(h)** and **(i)**.

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

Total Marks	
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Examiner Only	
Marks	Remark

**1 (a)** CIM is used in the production and distribution of the balance bike.

**(i)** What do the letters CIM stand for?

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[1]

(ii) Discuss **one** advantage of using CIM for the production or distribution of the balance bike.

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[2]

**(b)** Plywood is extensively used in the production of the balance bike.

(i) Identify **one advantage** and **one disadvantage** of using plywood instead of MDF, of the same thickness, to manufacture the wooden parts of the balance bike.

Advantage: \_\_\_\_\_

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

Disadvantage: \_\_\_\_\_

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

(ii) In what form is plywood supplied to the company who manufacture the balance bikes?

Form: \_\_\_\_\_ [1]

**(c)** Quality assurance is an important factor for manufacturers and consumers. Balance bikes are therefore sold with a British Standards label attached.

Describe **one** advantage selling balance bikes with British Standards labels attached has for the manufacturer.

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[2]



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[1]

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[1]

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[1]

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[1]

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[1]

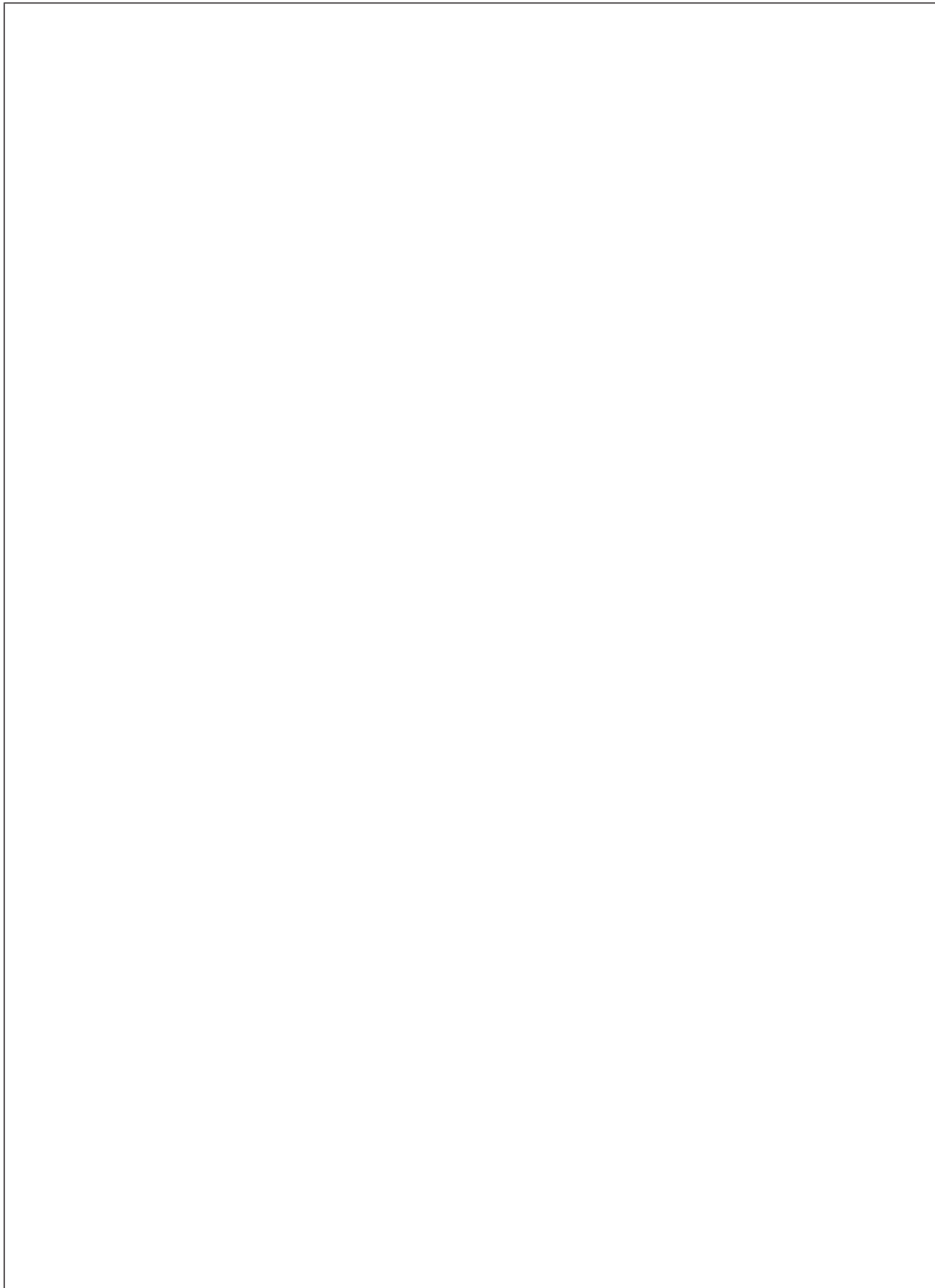
9652

- (h) The aluminium wheels are manufactured by the process of press forming.

In the box below, using annotated sketches and correct terminology, describe how the process of press forming is carried out.

Marks will be awarded for

- Detail contained in sketches [4]
- Quality of sketches [3]
- Detailed notes [3]



[10]

Examiner Only	
Marks	Remark

- (i) The balance bike has an ergonomically designed seat for comfort. The seat is attached to a seat post and the height can be adjusted. The seat has a plastic covering with foam inside for extra cushioning and comfort.

In the box below, using annotated sketches and correct terminology, describe in detail how the balance bike seat would be constructed and how it would be attached to the seat post.

Marks will be awarded for:

- Detail contained in sketches [4]
- Quality of sketches [3]
- Detailed notes [3]

[10]

Examiner Only	
Marks	Remark

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

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2015

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**Manufacturing**  
Pre-Release Material  
EXAMINATION COPY  
Paper 2  
Assessment Unit 3  
*assessing*  
Manufacturing Technology  
**[GMA32]**



GMA32

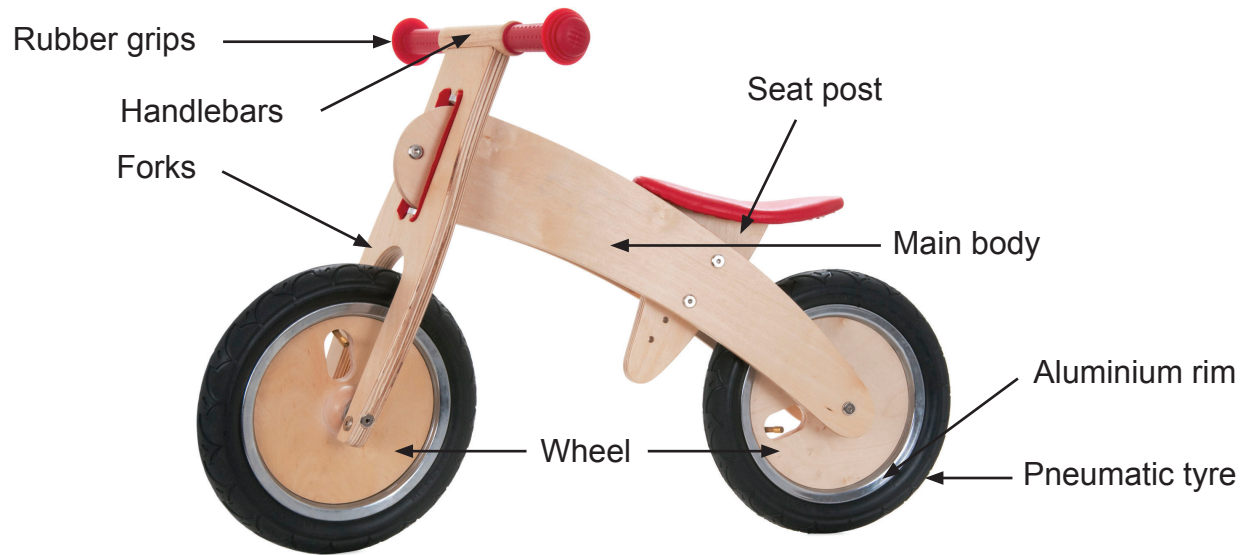
**JANUARY 2015 AND SUMMER 2015**

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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

The image below shows a “Balance bike for toddlers”.



© Thinkstock

### Description

This product is designed to improve a child's balance and help them to quickly learn the skills required to ride a bike. By using a balance bike they can gain confidence in holding the handlebars while pushing the bike forward with their feet. The seat can be raised and lowered and there is a simple mechanism that allows for steering.

### Features include:

- Made from solid marine grade birch plywood
- Aluminium rims with pneumatic tyres
- Easy access tyre valves
- Adjustable seat height
- Embroidered seat covers that can be gender specific or neutral
- Fittings and steering assembly enable a smooth ride
- Moulded rubber handlebar grips for comfort.