



General Certificate of Secondary Education  
2015

**Manufacturing**  
Paper 2  
Assessment Unit 3  
*assessing*  
Manufacturing Technology  
**[GMA32]**



GMA32

**THURSDAY 15 JANUARY, AFTERNOON**

Centre Number

71	
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Candidate Number

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**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 **(g)** and **(h)**.

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

<b>Total Marks</b>	
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- (d) Information and Communication Technology (ICT) is used during the design stage of the balance bike.

State and describe **one** use of ICT in the design stage of a balance bike.

- (i) Type of ICT used:

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

- (ii) Description:

\_\_\_\_\_  
\_\_\_\_\_ [2]

- (e) Modern technology is used throughout the manufacture of the balance bike.

Explain **two** advantages of using such technology for the manufacturer.

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

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

- (f) An adhesive, or glue, is a mixture in a liquid or semi-liquid state that adheres or bonds items together. Adhesives are used to join the handle bars to the forks of the balance bike.

- (i) Name **one** example of an adhesive which could be used to join these two parts together.

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

- (ii) Discuss an advantage of using such an adhesive in the manufacture of the balance bike.

\_\_\_\_\_  
\_\_\_\_\_ [2]

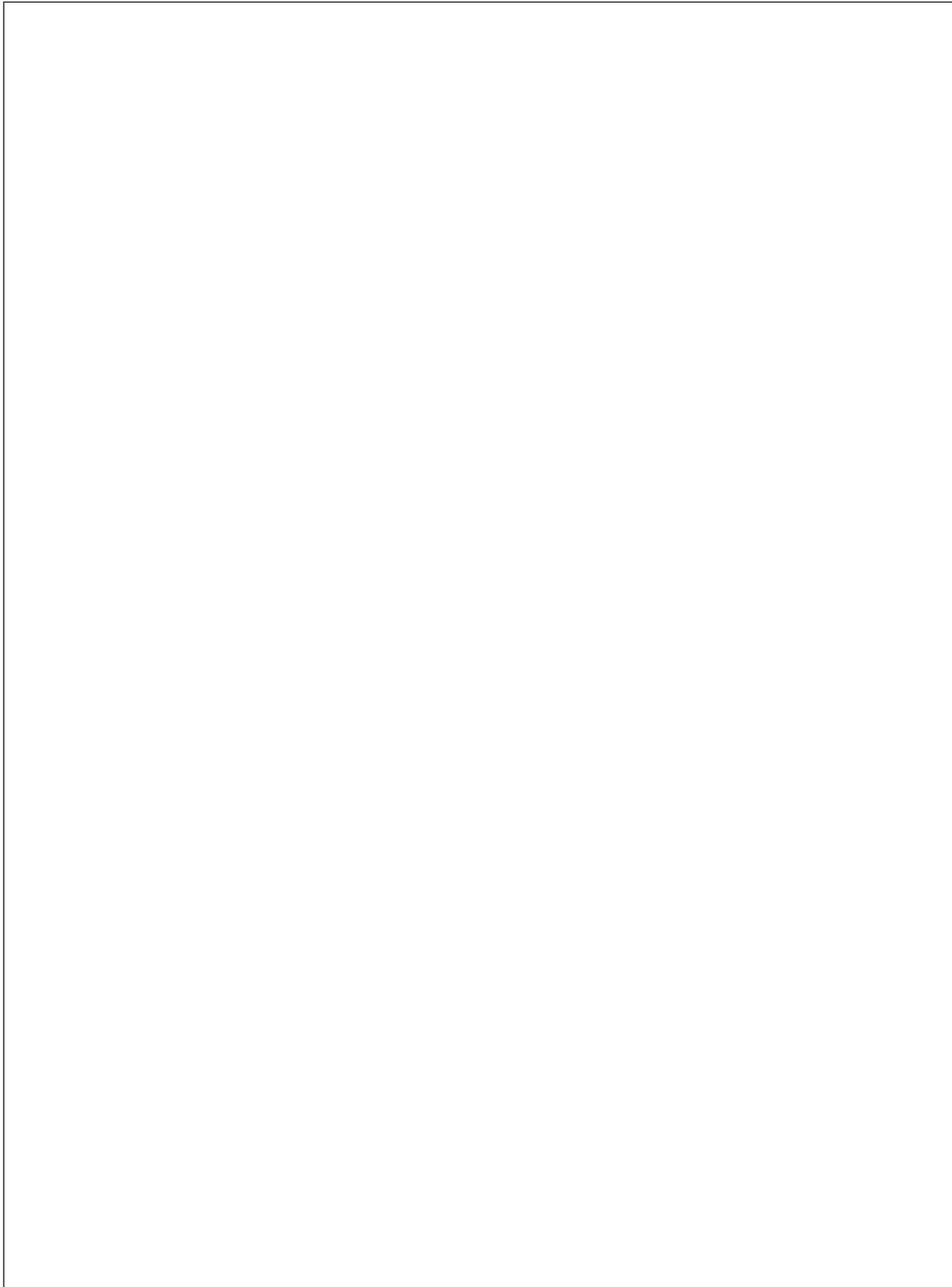
Examiner Only	
Marks	Remark

**(g)** It is necessary that the balance bike can be used by children of different heights and sizes.

In the box below, using annotated sketches and correct terminology, describe how the seat can be adjusted to suit a taller child.

Marks will be awarded for:

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



[10]

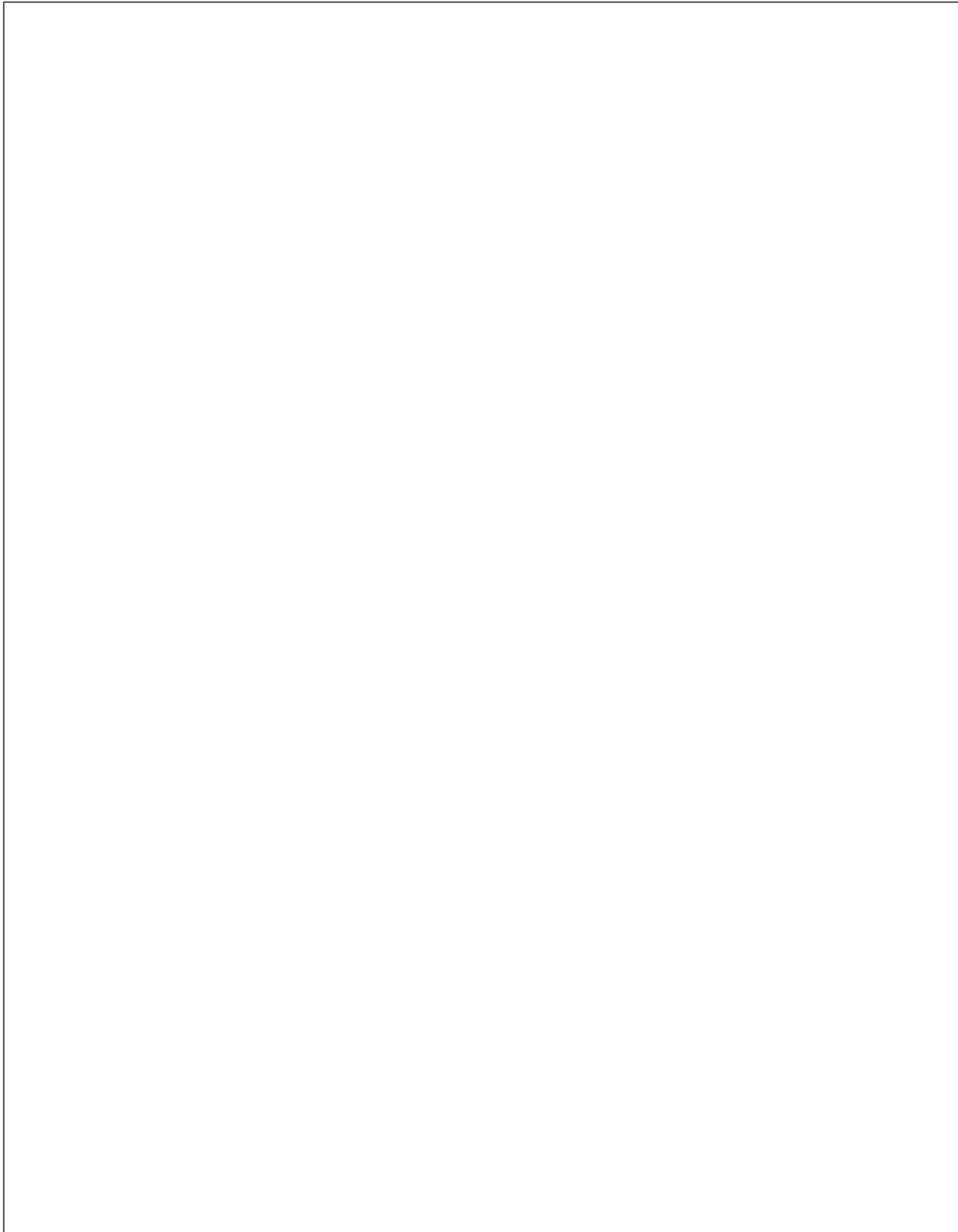
Examiner Only	
Marks	Remark

(h) The balance bike uses pneumatic tyres to provide a smooth and comfortable ride for the child using it. Each wheel is held securely to the balance bike allowing it to rotate without any obstruction.

In the box below, using annotated sketches and correct terminology, describe how either wheel could be held in place allowing it to rotate freely and be removed if necessary.

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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*Rewarding Learning*

**General Certificate of Secondary Education  
2015**

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**Manufacturing**  
Pre-Release Material  
EXAMINATION COPY  
Paper 2  
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Manufacturing Technology  
**[GMA32]**



GMA32

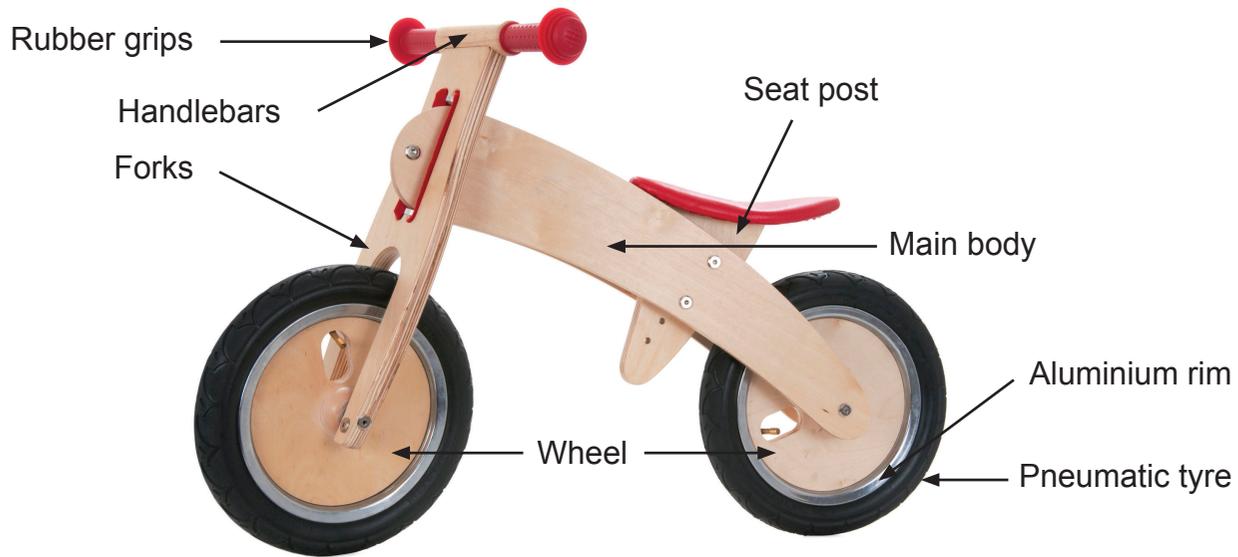
**JANUARY 2015 AND SUMMER 2015**

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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.