



General Certificate of Secondary Education  
2009–2010

Centre Number

71

Candidate Number

**Science: Single Award (Modular)**

Staying Alive  
Module 1  
Foundation Tier

[GSC11]



**WEDNESDAY 24 FEBRUARY 2010, MORNING**

**TIME**

45 minutes.

**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 seven** questions.

**INFORMATION FOR CANDIDATES**

The total mark for this paper is 45.  
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

For Examiner's use only

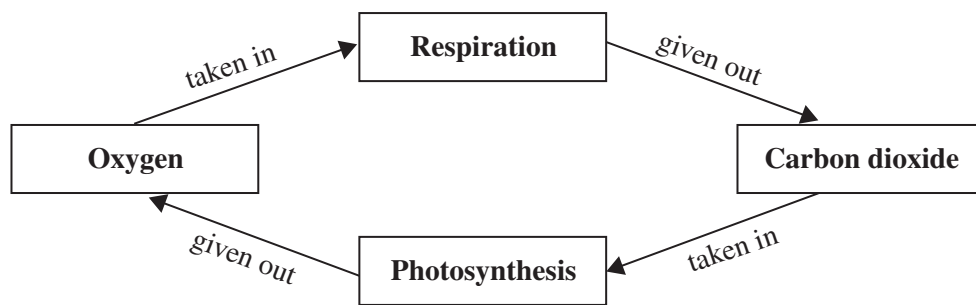
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	

**Total Marks**

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- 2 (a) The diagram below shows the gases taken in and given out during the processes of photosynthesis and respiration.



Use the **diagram** and **your knowledge** to answer parts (i) to (iii) below.

- (i) Name the gas which is used in the process of respiration.

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

- (ii) Complete the sentences below.

Plants and animals give out carbon dioxide during a process called

\_\_\_\_\_. Photosynthesis uses carbon dioxide and is only carried out by green \_\_\_\_\_.

[2]

- (iii) Apart from carbon dioxide, name **one** other substance used in photosynthesis.

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

- (b) State why humans would starve if there was no photosynthesis.

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

Examiner Only

Marks Remark



3 (a) The box below shows nine genotypes.

Pp : BB : rR : Bb : bB : Rr pp : RR : pP
---

(i) How many of these genotypes are homozygous?

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

(ii) How many of these genotypes have **two** recessive alleles (genes)?

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

(b) Brown eyes are dominant to blue eyes.

**Circle** the genotype below which will give blue eyes.

**BB : bb : Bb** [1]

(c) List the following structures in order of size, starting with the smallest.

**gene : sperm : chromosome : nucleus**

Smallest \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Largest \_\_\_\_\_

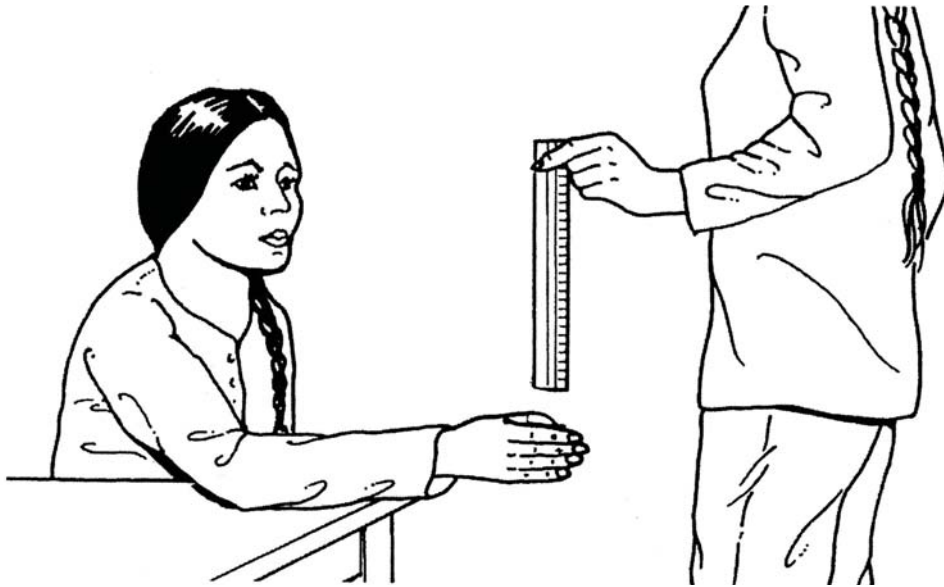
[2]

Examiner Only	
Marks	Remark

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**(Questions continue overleaf)**

4 Two pupils are testing the speed of reactions.



© Science at Work – Body Maintenance by L Mooney & A Rivers, published by Longmans, 1992, ISBN 0582078245

The girl sitting has to catch the ruler as quickly as she can.

(a) (i) Name the type of reaction involved.

Choose from:

**sensory : reflex : voluntary**

\_\_\_\_\_

[1]

(ii) Name the main sense organ involved in this reaction.

\_\_\_\_\_

[1]

(iii) What role do the arm muscles play in this reaction?

Choose from:

**senses : effector : control**

\_\_\_\_\_

[1]

Examiner Only	
Marks	Remark



(b) The table below shows the results of the girl catching the ruler eight times.

Try	1	2	3	4	5	6	7	8
Time taken/0.1 s	15	15	12	11	9			6

(i) Complete the table by suggesting times for try 6 and try 7. Write your answers in the table. [1]

(ii) Describe the difference in time taken between try 1 and try 8 and suggest a reason for this.

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

(c) Name the two parts that make up the Central Nervous System (CNS).

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

Examiner Only	
Marks	Remark



(c) Given below are issues these parents will have to consider and explanations of what they mean.

Use lines to match each issue with its explanation.  
One explanation will not be used.

<b>Issue</b>	<b>Explanation</b>
Financial	The cost involved in raising a child with an inherited disease
Ethical	Whether something is right or wrong
	How something affects individuals and all of society

[2]

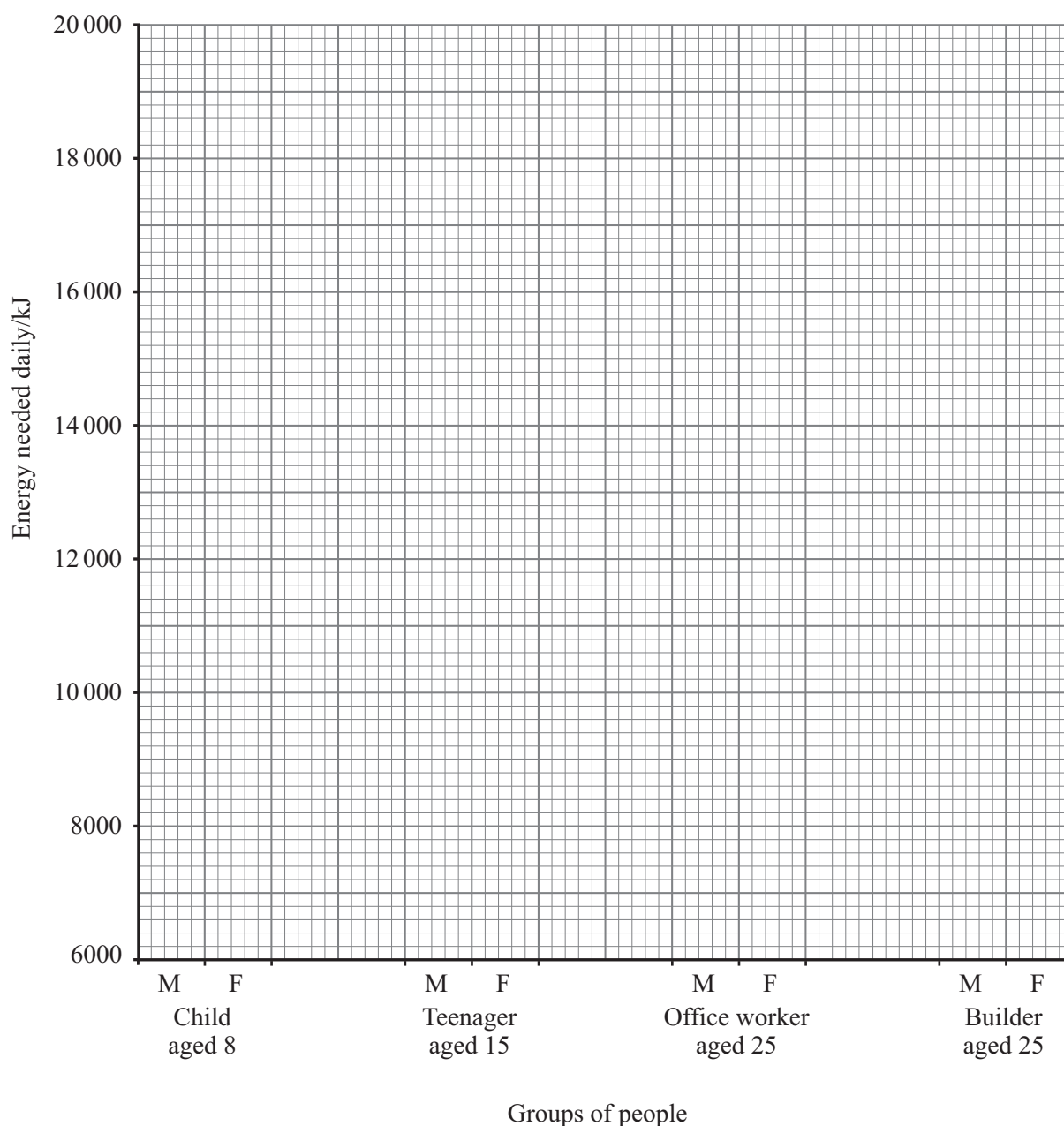
Examiner Only	
Marks	Remark

- 6 (a) The table below shows the daily amount of energy needed by different groups of people.

Groups of people	Energy needed daily/kJ	
	Male	Female
Child aged 8	8800	8800
Teenager aged 15	12 600	9600
Office worker aged 25	11 600	9500
Builder aged 25	20 000	12 600

Examiner Only	
Marks	Remark

- (i) Draw a **bar chart** of these energy needs on the grid below. [2]









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