



*Rewarding Learning*

**General Certificate of Secondary Education**

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**Biology**

**Unit 3 Practical Skills**

**Booklet A**

**Foundation Tier**

**[GBL31]**

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**Assessment**

**MARK  
SCHEME**

## General Marking Instructions

The main purpose of the mark scheme is to ensure that each question is marked accurately, consistently and fairly.

Mark schemes are not intended to be totally prescriptive. No mark scheme can cover all the responses which students may produce. In the event of unanticipated answers, teachers and lecturers are expected to use their professional judgement to assess the validity of answers.

### Mark Scheme Annotation

- The use of a solidus (/) denotes alternative answers which can be awarded within the same question (or marking point in a question worth more than one mark).
- The use of a semi-colon (;) denotes separate marking points. These are particularly relevant when separating the different marking points in a question worth more than one mark.
- Part of an answer within brackets indicates that this part is not essential to gain credit – the bracketed section is usually to set context or for the purpose of completeness.
- Some answers are shown as 'Any **two** from' (or any number between two and six). This means that any two (or other specified number) answers from the bullet-pointed list can be credited in this question or question part.

### Marking Calculations

Full marks are normally awarded for the correct answer – irrespective of whether working out has been shown (even when asked to show working out.) The principle of 'error carried forward' (ECF) usually applies in that if a student makes a mistake in the first part of a three-mark, three-stage calculation then the final two marks can be awarded if the second and third stage processes are carried out correctly. The same principle applies to a mistake at any stage in a calculation.

### Marking QWC question

See guidance in the mark scheme at the QWC question and also the section in the subject-specific guidance.

**Task 1: Investigating factor(s) needed for photosynthesis.**

- |   |     |
|---|-----|
| <b>1 (a)</b> (Accurate representation of) leaf drawn; [1]<br>Card drawn in correct position; correctly labelled [2]         | [3] |
| <b>(b)</b> Area of leaf covered: Yellow – Brown;<br>Area of leaf not covered: Blue – Black;                                 | [2] |
| <b>(c)</b> To destarch/remove starch/to ensure no starch present;<br>so any starch present is made during the investigation | [2] |
| <b>(d)</b> • to kill the leaf;<br>• to soften the leaf;<br>• to test for starch   | [3] |
| <b>(e)</b> Chlorophyll;   | [1] |
| <b>(f)</b> Light;   | [1] |
| <b>(g)</b> No light;<br>No photosynthesis took place;<br>No starch produced;  | [3] |

**AVAILABLE  
MARKS**

15

**Task 2: Estimating the energy content of crisps.**

- 1 (a) Final temperature – initial temperature;  
= correct answer [1]
- (b) Temperature; [1]  
°C [1] [2]
- (c) 25;  
× temperature difference × 4.2;  
= answer [3]
- (d) Temperature; [1]
- (e) To ensure the heat is evenly distributed through the water; [1]
- (f) Repeat; calculate the average; [2]
- (g) Appropriate scale; [1]
- (h) Energy content of crisps/J; [2]
- (i) Accurate bars drawn; ([-1] for each bar incorrectly plotted) [2]

**Total**

**AVAILABLE  
MARKS**

15

**30**