## Investigation 4: Moderator comments

| Personal engagement | Exploration | Analysis | Evaluation | Communication | Total |
|---|---|---|---|---|---|
| x/2 | x/6 | x/6 | x/6 | x/4 | x/24 |
| 2 | 5 | 5 | 4 | 3 | 19 |

**Personal engagement**

| Mark | Descriptor |
|---|---|
| 2 | • The justification given for choosing the research question and/or the topic under investigation demonstrates **personal significance, interest or curiosity**. 2<br>• There is evidence of **personal input and initiative** in the designing, implementation or presentation of the investigation. 2 |

| | Moderator's comment |
|---|---|
| **Moderator's award**<br>2 | The purpose is clear and the candidate justifies the choice of the research question. There is evidence of considerable personal input in the design and the implementation of the investigation. |

**Exploration**

| Mark | Descriptor |
|---|---|
| 3–4 | • The methodology of the investigation is mainly appropriate to address the research question but has limitations since it takes into consideration only some of the significant factors that may influence the relevance, reliability and sufficiency of the collected data. 3 |
| 5–6 | • The topic of the investigation is identified and a relevant and fully focused research question is clearly described. 5<br>• The background information provided for the investigation is entirely appropriate and relevant and enhances the understanding of the context of the investigation. 5<br>• The report shows evidence of full awareness of the significant **safety**, ethical or environmental issues that are **relevant to the methodology of the investigation**. 6 |

| | Moderator's comment |
|---|---|
| **Moderator's award**<br>5 | The research question is reasonably focused and relevant background information is provided.<br><br>The methodology is appropriate but it probably would not effectively determine the glucose concentrations that the student is after and there is no attempt to establish the levels of starch at the start of the experiment. |

**Analysis**

| Mark | Descriptor |
|---|---|
| 3–4 | • The processed data is interpreted so that a broadly valid but incomplete or limited conclusion to the research question can be deduced. 4 |
| 5–6 | • The report includes sufficient relevant quantitative and qualitative raw data that could support a detailed and valid conclusion to the research question. 5<br>• Appropriate and sufficient data processing is carried out with **the accuracy** required to enable a conclusion to the research question to be drawn that is fully **consistent** with the experimental data. 5<br>• The report shows evidence of full and appropriate consideration of the impact of measurement uncertainty on the analysis. 5 |

**Moderator's comment**

| | |
|---|---|
| **Moderator's award**<br>5 | The report includes sufficient relevant data (both quantitative and qualitative) except for the measurement of the initial glucose content where more samples ought to have been taken. It is a shame the calibration curve was not extended to include the experimental data in its range. The candidate's interpretation is a logical one given the evidence available (significant decomposition of the fruit). |

**Evaluation**

| Mark | Descriptor |
|---|---|
| 3–4 | • A conclusion is **described** which is relevant to the research question and supported by the data presented. 4<br>• A conclusion is described which makes some relevant comparison to the accepted scientific context. 4 |
| 5–6 | • Strengths and weaknesses of the investigation, such as limitations of the data and sources of error, are **discussed** and provide evidence of a clear understanding of the **methodological issues** involved in establishing the conclusion. 5<br>• The student has **discussed** realistic and relevant suggestions for the improvement and extension of the investigation. 5 |

**Moderator's comment**

| | |
|---|---|
| **Moderator's award**<br>4 | Despite an experiment that did not turn out as expected, there is very good evidence of insightful and reflective approach resulting in a reasonably sound conclusion. The main weakness comes in the initial assumption that the test will detect glucose production only. |

**Communication**

| Mark | Descriptor |
|---|---|
| 3–4 | • The report is well structured and clear: the necessary information on focus, process and outcomes is present and presented in a coherent way. 4 |

- The report is relevant and concise thereby facilitating a ready understanding of the focus, process and outcomes of the investigation. 3
- The use of subject-specific terminology and conventions is appropriate and correct. Any errors do not hamper understanding. 3

| | **Moderator's comment** |
|---|---|
| **Moderator's award**<br>3 | The report is well structured providing the necessary information. It could be a more concise (there is a bit of repetition). The terminology is appropriate with a few errors and the conventions are correctly applied in tables and graphs. |