

2023

Year 11 Integrated Science – Unit 1 Biological & Earth Systems

Task 3: Bacteria Investigation

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| **Assessment Type:** |  | Name: |  |
| Investigation |  |
| **Duration & Conditions:**  See section notes |  | Teacher: |  |
|  |  |  |  |
| **Assessment weighting:**  12.5% of year mark |  | Date: |  |

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# **PART THREE:** Report

Your report should contain the following content:

|  |  |
| --- | --- |
| **Heading** | **Content** |
| Introduction | * Introduces the experiment * Includes basic information about bacteria and how they respond to pH changes |
| Research | * Lists and describes the bacteria that you would expect to find given the source (phone and shoe) |
| Aim | * Clearly states the aim of the experiment |
| Variables | * Identifies the independent, dependent and at least two controlled variables |
| Hypothesis | * States a clear hypothesis with a prediction of how the dependent variable will change with the independent variable |
| Materials | * Lists material used in experiment |
| Method | * Lists the steps performed in the experiment in sufficient detail |
| Safety | * Lists and explains safety considerations for experiment |
| Observations | * Provides general observations on all samples (how they changed with source and how they changed with pH) * Provides detailed observations on at least one petri dish, including observations for each bacteria species |
| Discussion | * Reflects on the general observations and what they indicate (with respect to the aim and the hypothesis) * Identifies the bacteria observed on at least one petri dish |
| Improvements | * Lists and explain at least two possible improvements to the experiment |
| Conclusion | * States and explains whether the experiment supported the hypothesis |
| Referencing | * Provide sources for your research |

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| --- | --- | --- | --- | --- | --- | --- |
| **Introduction** | Provides general information on bacteria | Provides information on bacteria and pH |  |  |  |  |
| **Research** | One example bacteria species given | Additional bacteria species given | Information on bacteria species given | Describes difference between species expected by source |  |  |
| **Aim** | Clearly states aim of experiment |  |  |  |  |  |
| **Variables** | Correctly identifies independent variable | Correctly identifies dependent variable | Correctly identifies one controlled variable | Correctly identifies another controlled variable |  |  |
| **Hypothesis** | Links independent and dependent variables | Includes direction of expected change |  |  |  |  |
| **Materials** | Lists materials used in experiment |  |  |  |  |  |
| **Method** | Method is clearly listed and explained | Method is complete | Sufficient detail to reproduce experiment |  |  |  |
| **Safety** | Identifies safety consideration for experiment | Explains safety risk |  |  |  |  |
| **Observations** | Provides observations on effect of pH | Provides observations on effect of source | Observations for pH and source are detailed, including number of colonies and variety of species | Provides detailed observations on one bacteria species | Provides detailed observations on additional species | Observations are tabulated and communicated clearly |
| **Discussion** | Discusses interpretation of pH observations | Discusses interpretation of source observations | Links pH observations to research | Links source observations to research | Identifies one bacteria species using observations and research | Identifies additional bacteria species using observations and research |
| **Improvements** | States one possible improvement to the experiment | Explains expected impact of improvement | States additional possible improvement to the experiment | Explains expected impact of additional improvement |  |  |
| **Conclusion** | States whether experiment results support hypothesis | Uses data to explain concluding statement |  |  |  |  |
| **Referencing** | Includes reference(s) for research information |  |  |  |  |  |

**Self-Evaluation Table**

Use this table in conjunction with the Judging Standards (see SEQTA or the SCSA website) to assess whether you are on track to achieving your desired grade.