|  |
| --- |
| **Assessment task** |
| Year level  | 6 |
| Learning area | Science |
| Sub-strand | [ ]  Biological Sciences[ ]  Chemical Sciences[ ]  Physical Sciences[ ]  Earth and Space Sciences |
| Title of task |  |
| Task guidelines |
| Description of task  |  |
| Type of assessment | Summative  |
| Purpose of assessment | This template may be used to assess science understanding and science inquiry skills. |
| Guidance provided by teachers | Question to be investigated: Please select the appropriate box[ ]  Provided by the teacher, e.g. How does load carried affect the force of friction?[ ]  Open for students to develop, e.g. How does a ‘student selected factor’ affect the force of friction?Equipment: Please select the appropriate box[ ]  Provided[ ]  A selection provided to choose from[ ]  OpenAny other comments that may inform the reviewer.  |
| **Content description** |
| Content from the Western Australian Curriculum | **Science Understanding** Biological sciences [ ]  The growth and survival of living things are affected by physical conditions of their environmentChemical sciences [ ]  Changes to materials can be reversible or irreversible Earth and space sciences [ ]  Sudden geological changes and extreme weather events can affect Earth’s surface Physical sciences [ ]  Electrical energy can be transferred and transformed in electrical circuits and can be generated from a range of sources |
|  | **Science Inquiry Skills**Questioning and predicting [ ]  With guidance, pose clarifying questions and make predictions about scientific investigations Planning and conducting[ ]  Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks[ ]  Decide variables to be changed and measured in fair tests, and observe measure and record [data](http://k10outline.scsa.wa.edu.au/home/p-10-curriculum/curriculum-browser/science-v9/overview/glossary/data) with accuracy using [digital technologies](http://k10outline.scsa.wa.edu.au/home/p-10-curriculum/curriculum-browser/science-v9/overview/glossary/digital-technologies) as appropriateProcessing and analysing data and information[ ]  Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate[ ]  Compare data with predictions and use as evidence in developing explanationsEvaluating[ ]  Reflect on and suggest improvements to scientific investigationsCommunicating[ ]  Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts |
| **Task preparation** |
| Prior learning | Teachers should consider the timing and sequencing of the learning area content prior to using the template as a summative task.  |
| Conditions under which the task was conducted | Specify relevant information that may inform the reviewer.1. Time allowed to complete the task.
2. Conditions under which the task was conducted. Where some sections of the template completed as a class, or information provided by the teacher?
 |
| Resources | Investigation template provided |

**Instructions for teacher**

1. The template may be used to teach and/or assess Science Understanding and Science Inquiry Skills.
2. It is suggested that information regarding the conditions under which the task was conducted is provided.
3. Provide clarification if students are unfamiliar with the template or template wording.
4. Consider investigations that allow students to demonstrate the full range of Science Inquiry Skills.
5. Include the completed cover page when/if participating in the moderation process. This informs teachers of the conditions under which the task was conducted.
6. Teachers may choose to use the template in its entirety over a period of time, or sections that are relevant to the assessment opportunity.

**Year 6**

**Fair test investigation template**

Student name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Group members: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Investigation title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**QUESTIONING AND PREDICTING**

State the variables for this investigation.

|  |  |  |
| --- | --- | --- |
| What I will change(Independent variable) | What I will measure(Dependent variable) | What I will keep the same(Controlled variables) |
|  |  |  |

Write the question to be investigated.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |

Write a prediction for the investigation and explain why you think this will happen.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

**PLANNING AND CONDUCTING**

List the equipment required for the investigation.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

Describe the possible safety risks in this investigation.

Suggest how they can be managed or controlled.

|  |  |
| --- | --- |
| Safety risks  | How they can be managed or controlled |
|  |  |

Write the method for this investigation.

Include how the variables will be changed, measured and controlled.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

Draw a labelled diagram or provide a digital representationof the equipment set-up.

|  |
| --- |
|  |

Describe your observations and record your results in an appropriate table.

|  |
| --- |
| Table title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**PROCESSING DATA**

Graph the results of the investigation. Label each of the axes and include appropriate units of measurement.

Graph title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ANALYSING DATA**

Describe the relationships or patterns in the results.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

Explain the relationships or patterns in the results using science ideas.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

**EVALUATING**

Describe how the investigation could be improved.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

|  |
| --- |
| **Marking key**  |
| **Description** | Marks |
| Questioning and predicting  |
| Identifies the variable to be changed (independent variable). | 1 |
| Identifies the variable to be measured (dependent variable). | 1 |
| Identifies at least two (2) controlled variables. | 1–2 |
| **Subtotal** | **4** |
|  |
| Writes a question that can be investigated and is reasonable.  | 1 |
| **Subtotal** | **1** |
|  |
| Writes a prediction that describes a relationship between the dependent variable and the independent variable; and matches the question posed above. | 1–2 |
| Provides a reasonable explanation for choosing this prediction. | 1 |
| **Subtotal** | **3** |
| Planning and conducting |
| Selects the appropriate equipment required to conduct the investigation. | 1–2 |
| **Subtotal** | **2** |
|  |
| Identifies safety risks associated with the investigation. | 1–2 |
| Suggests ways to minimise the risks. | 1–2 |
| **Subtotal** | **4** |
|  |
| Provides a method with a logical sequence of steps. | 1–2 |
| Provides a method which contains sufficient detail to allow replication.Detail includes:* how the independent variable is changed
* how the dependent variable is measured
* how other variables are controlled
* method is easily followed
 | 1111 |
| **Subtotal** | **6** |
|  |
| Draws a clear diagram or provides a digital representation that includes:* equipment shown correctly set up
* correct labels.
 | 11 |
| **Subtotal** | **2** |
|  |  |
| Draws a table that includes: * descriptive title containing dependent and independent variables
* information relevant to the investigation
* appropriate column headings with units of measurement (if applicable)
 | 111 |
| Subtotal | **3** |
| Processing data |
| Graphs results collected from the investigation (if applicable):* provides appropriate graph title
* labels axes correctly
* includes appropriate units of measurement
* plots results correctly
* draws the appropriate type of graph.
 | 11111 |
| Subtotal | **5** |
| Analysing data |  |
| Describes the relationships or patterns in the results. | 1–2 |
| Refers to specific results when describing the relationship. | 1 |
| Compares the results to their prediction.  | 1 |
| Subtotal | **4** |
|  |  |
| Explains the relationships or patterns in the results using science ideas. | 1–2 |
| Subtotal | **2** |
| Evaluating |
| Identifies difficulties experienced when conducting the investigation. May include reference to, but not limited to: quality of the data, correct use of equipment, choice of equipment. | 1–2 |
| Makes suggestions to overcome the difficulties described.  | 1–2 |
| Subtotal | **4** |
| Communicating |
| Communicates using appropriate scientific language and representations. | 1-2 |
| Subtotal | **2** |
| Total | **40** |