Assessment task

Year level	7
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 and/or formative
Purpose of assessment	This template may be used to assess science understanding and science inquiry skills
Guidance provided by teachers	Question to be investigated ☐ 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 ☐ Provided ☐ A selection provided to choose from ☐ Open Any other comments that may inform the reviewer

Content description

Content from the Western Australian Curriculum	**Science understanding** Biological sciences ☐ Classification helps organise the diverse group of organisms ☐ Interactions between organisms, can be described in terms of food chains and food webs; human activity can affect these interactions Chemical sciences ☐ Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques Earth and space sciences ☐ Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon ☐ Some of Earth's resources are renewable but others are non-renewable ☐ Water is an important resource that cycles through the environment Physical sciences ☐ Change to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object

	Science inquiry skills Questioning and predicting • Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge Planning and conducting • Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed • Measure and control variables, select equipment appropriate to the task and collect data with accuracy Processing and analysing data and information • Construct and use a range of representations, including graphs, keys and models to represent and analyse patterns or relationships in data using digital technologies as appropriate • Summarise data, from students' own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence Evaluating • Reflect on scientific investigations including evaluating the quality of the data collected, and identifying improvements • Use scientific knowledge and findings from investigations to evaluate claims based on evidence Communicating • Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate
Task preparation	
Prior learning	
Conditions under which the task was conducted	Specify relevant information that may inform the reviewer: 1. Time allowed 2. Conditions under which the task was conducted
Resources	Investigation template, provided

Instructions for teacher

1. This template may be used to teach and/or assess science understanding and inquiry skills.
2. Teachers are required to write a description of the conditions under which the task was conducted. In the description, indicate any parts of the task that were completed as part of whole-class and/or group discussions.
3. Teachers may 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.

Investigation template

Student name: _____

Group members: _____

Task 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 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 and suggest 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 of the equipment set-up.

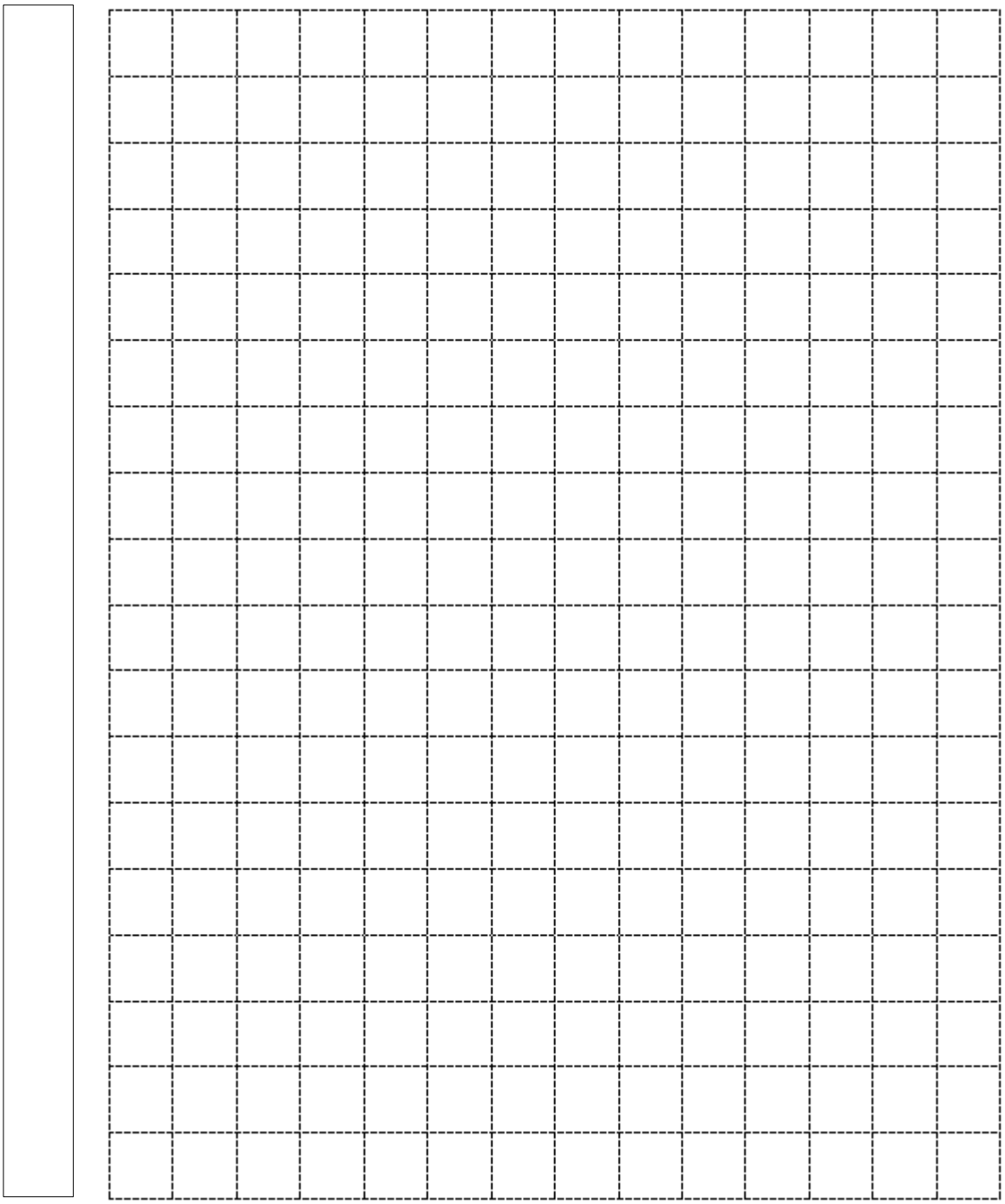
Describe your observations and record your results in a table.

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	
Correctly identifies the variable to be changed (independent variable).	1
Correctly identifies the variable to be measured (dependent variable).	1
Correctly identifies at least two 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 • plans for repeat trials/replicates.	1–4
Subtotal	**6**
Draws a clear diagram that includes: • equipment shown correctly set up • correct labels.	1–2
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)	1–3
Subtotal	**3**

Processing data	
Graphs data collected from the investigation (if applicable): • provides appropriate graph title • labels axes correctly • includes appropriate units of measurement • plots data correctly • draws the appropriate type of graph.	1–5
Subtotal	**5**
Analysing data	
Describes relationships or trends in the results.	1–2
Refers to specific data when describing relationships or trends.	1
Compares the results to their prediction.	1
Subtotal	**4**
Explains the relationships or trends 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, including ways to improve the quality of the data.	1–2
Subtotal	**4**
Total	**40**