



Assessment task	
Year level	7
Learning area	Science
Sub-strand	<input type="checkbox"/> Biological Sciences <input type="checkbox"/> Chemical Sciences <input type="checkbox"/> Physical Sciences <input type="checkbox"/> 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	<p>Question to be investigated: Please select the appropriate box</p> <input type="checkbox"/> Provided by the teacher, e.g. How does load carried affect the force of friction? <input type="checkbox"/> Open for students to develop, e.g. How does a 'student selected factor' affect the force of friction? <p>Equipment: Please select the appropriate box</p> <input type="checkbox"/> Provided <input type="checkbox"/> A selection provided to choose from <input type="checkbox"/> Open <p>Any other comments that may inform the reviewer.</p>
Content description	
Content from the Western Australian Curriculum	<p>Science Understanding</p> <p><u>Biological sciences</u></p> <input type="checkbox"/> Classification helps organise the diverse group of organisms <input type="checkbox"/> Interactions between organisms, can be described in terms of food chains and food webs; human activity can affect these interactions <p><u>Chemical sciences</u></p> <input type="checkbox"/> Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques <p><u>Earth and space sciences</u></p> <input type="checkbox"/> Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon <input type="checkbox"/> Some of Earth's resources are renewable but others are non-renewable <input type="checkbox"/> Water is an important resource that cycles through the environment

	<p><u>Physical sciences</u></p> <p><input type="checkbox"/> Change to an object’s motion is caused by unbalanced forces, including Earth’s gravitational attraction, acting on the object</p>
	<p>Science Inquiry Skills</p> <p><u>Questioning and predicting</u></p> <p><input type="checkbox"/> Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge</p> <p><u>Planning and conducting</u></p> <p><input type="checkbox"/> Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed</p> <p><input type="checkbox"/> Measure and control variables, select equipment appropriate to the task and collect data with accuracy</p> <p><u>Processing and analysing data and information</u></p> <p><input type="checkbox"/> 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</p> <p><input type="checkbox"/> Summarise data, from students’ own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence</p> <p><u>Evaluating</u></p> <p><input type="checkbox"/> Reflect on scientific investigations including evaluating the quality of the data collected, and identifying improvements</p> <p><input type="checkbox"/> Use scientific knowledge and findings from investigations to evaluate claims based on evidence</p> <p><u>Communicating</u></p> <p><input type="checkbox"/> Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate</p>
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. <ol style="list-style-type: none"> 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.

Student name: _____

Group members: _____

Investigation title: _____

QUESTIONING AND PREDICTING

State the variables for this investigation.

(4 marks)

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.

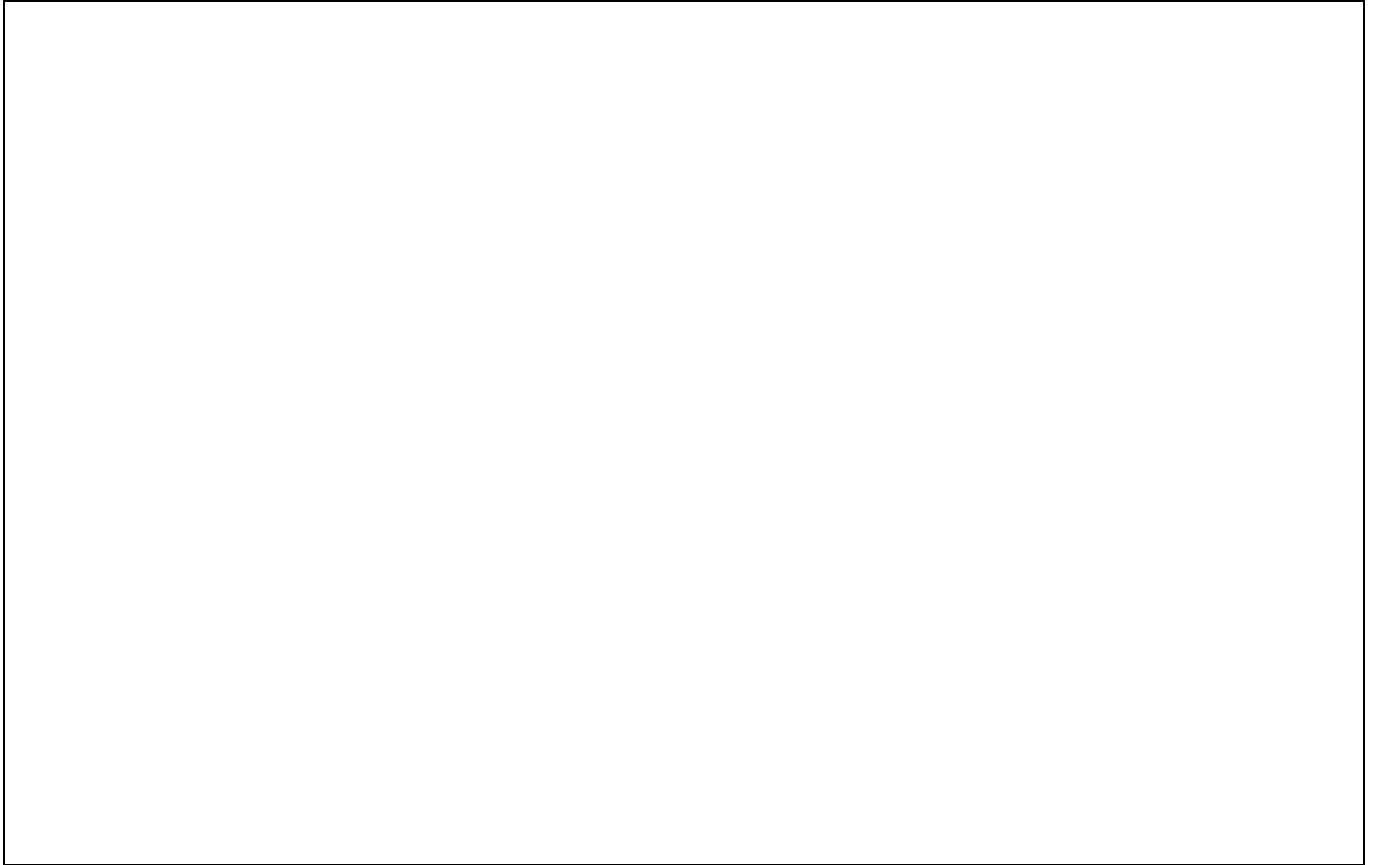
(1 mark)

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

(3 marks)

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

(2 marks)



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

(3 marks)

Table title: _____

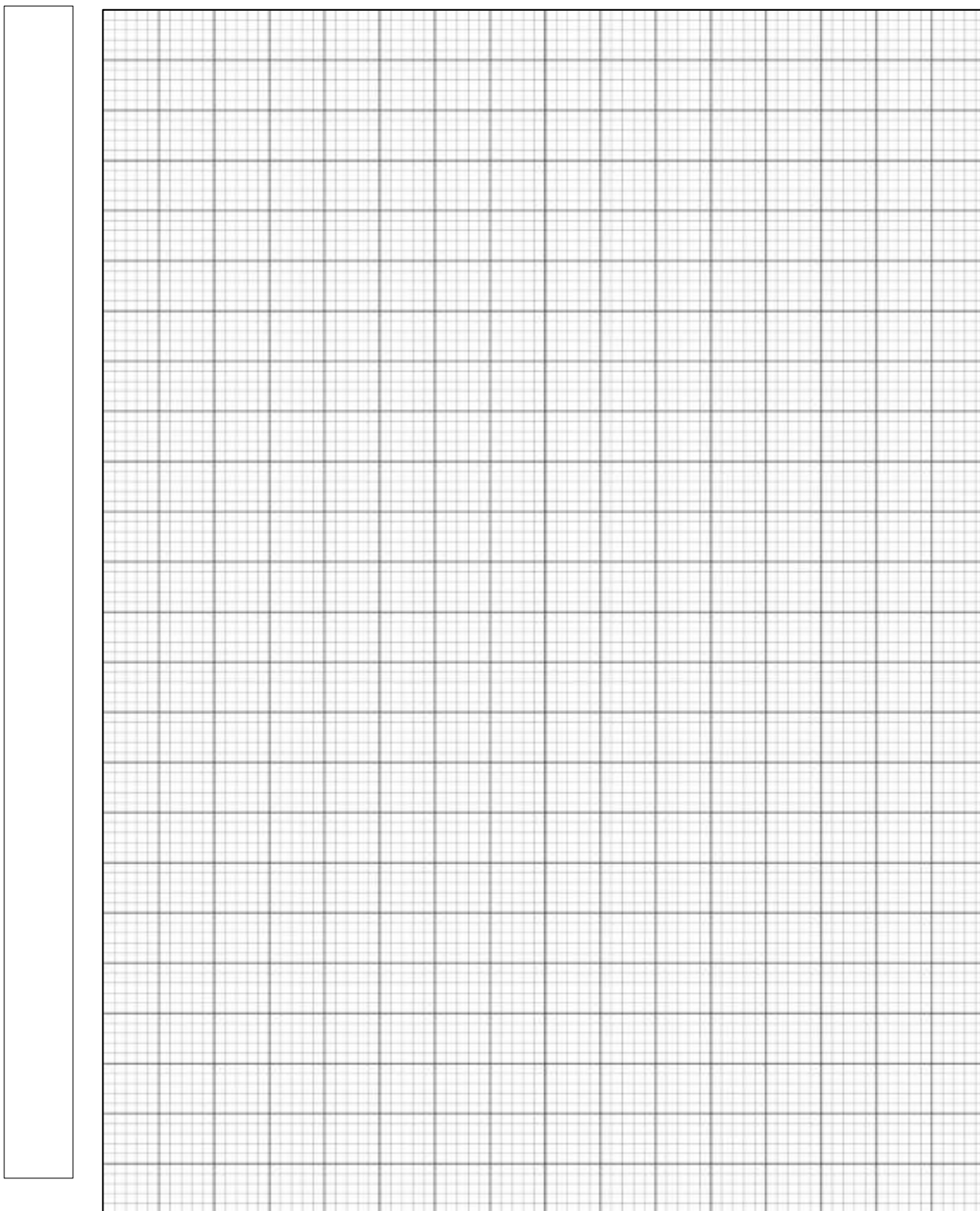


PROCESSING DATA

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

(5 marks)

Graph title: _____



ANALYSING DATA

Outline the relationships or patterns in the results.

(1 mark)

Explain the relationships or patterns in the results using relevant science concepts.

(2 marks)

Write a conclusion for this investigation. Support your conclusion using data from the investigation.

(3 marks)

EVALUATING

State the difficulties experienced when conducting this investigation and describe how the difficulties experienced could be overcome.

(4 marks)

Difficulties experienced.	Possible solutions.

Marking key	
Description	Marks
Questioning and predicting	
Identifies the variable to be changed.	1
Identifies the variable to be measured.	1
Identifies at least two (2) relevant controlled variables.	1–2
Subtotal	4
Questioning and predicting	
Writes a question that can be investigated and is reasonable.	1
Subtotal	1
Questioning and predicting	
Writes a prediction for the investigation that describes a relationship between the dependent variable and the independent variable; and matches the question posed.	1
Provides an explanation for the prediction.	1
Explanation based on relevant science concepts.	1
Subtotal	3
Planning and conducting	
Selects the appropriate equipment required to conduct the investigation.	1
Provides detail e.g. Size of glassware, quantity etc.	1
Subtotal	2
Planning and conducting	
Identifies safety risks and/or ethical issues associated with the investigation.	1–2
Suggests ways to minimise the risks.	1–2
Subtotal	4
Planning and conducting	
Provides a method that contains sufficient detail to allow replication. Detail includes:	
<ul style="list-style-type: none"> • logical sequence of steps 	1
<ul style="list-style-type: none"> • contains sufficient detail to allow replication/repetition <ul style="list-style-type: none"> ▪ clearly identifies how variables will be managed to ensure the investigation is fair 	1-3
<ul style="list-style-type: none"> ▪ data collection <ul style="list-style-type: none"> ○ appropriate method of data collection ○ appropriate sample size 	1-2
<ul style="list-style-type: none"> ▪ processing of data 	1
Subtotal	7
Planning and conducting	
Draws a clear diagram or provides a digital representation that includes:	
<ul style="list-style-type: none"> • equipment correctly set up 	1
<ul style="list-style-type: none"> • correct labels 	1
Subtotal	2
Planning and conducting	

Draws a table that includes:	
<ul style="list-style-type: none"> descriptive title containing dependent and independent variables appropriate column headings with units of measurement (if applicable) data accurately recorded. 	1
	1
	1
Subtotal	3
Processing data	
Graphs results collected from the investigation (if applicable):	
<ul style="list-style-type: none"> provides appropriate graph title labels axes correctly with appropriate units (if applicable) appropriate scale plots results correctly draws the appropriate type of graph. 	1
	1
	1
	1
	1
Subtotal	5
Analysing data	
Outlines relationships or patterns in results.	1
Subtotal	1
Provides an explanation of the relationships or patterns in the results.	1
Explanation based on relevant science concepts.	1
Subtotal	2
States a relevant conclusion.	1
Supports the conclusion using data from the investigation.	1
Compares the results to their prediction.	1
Subtotal	3
Evaluating	
Identifies relevant 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
Describes how the difficulties can be overcome.	1-2
Subtotal	4
Communicating	
Communicates using appropriate scientific language, conventions and representations.	1-2
Subtotal	2
Total	43