COONABARABRAN HIGH SCHOOL
ASSESSMENT NOTIFICATION

Subject: Year 9 Science

Assessment task 1: Student Research Project (SRP)
Rate of Reaction

Weighting: 25%

Date of Notification: 15 Sep 22

Draft due date: 12 Oct 22 – email/share

Due date: 19 Oct 22

Teacher: Miss Moore

THE TASK:

You will complete a Student Research Project (SRP) relating to a **factor** that affects the r**ate of a chemical reaction**.

Choose ONE of the following **factors** that affect reaction rate to test:
- ☐ Temperature
- ☐ Concentration
- ☐ Surfaces Area

You may choose from a list of **Chemical Reactions** provided or negotiate a reaction with your teacher.

YOU WILL BE ASSESSED ON HOW WELL YOU:

- **Demonstrate** ongoing progress of your SRP in handwritten lab notes (recording research, designs and findings).
- **Utilise** your time in class and at home.
- Develop an **inquiry question** and **hypothesis** based on the chemical reaction that interests you and the factor that you are choosing to test.
- **Conduct** preliminary research from at least three reliable secondary sources.
- **Design** a valid and reliable experiment using the **Student Research Project Planning Sheet**
- **Organise** your equipment and resources
- **Safely conduct** your experiment
- **Collect** and **present** reliable data.
- Write a **formal scientific report** (using your lab notes and scaffold) of your findings.

You will be provided with additional information to guide you in approaching the SRP. This includes:

- Student research project planning sheet
- Developing a hypothesis
- Writing a formal scientific report scaffold
- Planning your discussion
- How to assess the validity, reliability, and accuracy of an investigation.
- Guide to APA style bibliography

TIME FRAME:

Two weeks of lesson time will be allocated towards completing your SRP. You will also be expected to complete the background research and your formal scientific report at home.

TO BE SUBMITTED:

- ☐ Your hand-written lab notes
- ☐ A hard copy of your final SRP report using the report scaffold provided or typed using Google Docs or equivalent
    - ○ Font size 12
    - ○ Line spacing of 1.5

Outcomes Assessed
SC5-4WS A student develops a question or hypothesis to be investigated scientifically
SC5-5WS A student produces a plan to investigate identified questions, hypotheses or problems, individually and collaboratively
SC5-6WS A student undertakes first-hand investigations to collect valid and reliable data and information, individually and collaboratively
SC5-7WS A student processes, analyses and evaluates data from first-hand investigations and secondary sources to develop evidence-based arguments and conclusions
SC5-WS A student presents science ideas and evidence for a particular purpose and to a specific audience, using appropriate scientific language, conventions and representations
CW4 Different types of chemical reactions are used to produces a range of products and can occur ar different rates and involve energy transfer.
VA-2

MARKING GUIDELINES   NAME: _____

Three-Point Assessment

0 = The element described is missing.

1 = The element described is present but does not meet the standard described. Completed with guidance.

2 = The element is present and meets the standard but needs some revision or improvement. Completed with some guidance.

3 = The element is present and meets or exceeds the standard and no revision is recommended. Completed independently.

Part 1: Planning Sheet and Lab Notes

Element	0	1	2	3	Described Standards
VA2	**0**	**1**	**2**	**3**	**Lab work and Lab notes**
Engaged with Investigations					Worked ethically and effectively.
Recorded thorough lab notes					Organised and regularly updated the Remote Learning Booklets, neat, own work
Investigation					
4WS	**0**	**1**	**2**	**3**	**Formulates hypotheses that can be investigated scientifically**
Inquiry Question					Relevant to investigation
Hypothesis					A testable statement, written as an 'If, then' statement, includes independent and dependent variables in the hypothesis.
5WS	**0**	**1**	**2**	**3**	**Planning Investigations**
Preliminary Research					Records notes of background information relevant to the SRP. A variety of sources recorded in the currect format
Experimental Design					Aim (relevant), risk assessment included (x3), all equipment listed, identifies suitable measurement devices (accurate/sensitivity).
Method					Reliable (includes repetition) and valid (tests the aim and keeps controlled variables constant).
Method diagram					Clearly labelled diagram of apparatus used.
Variables					Identifies independent, dependent and controlled variables
6WS	**0**	**1**	**2**	**3**	**Conducting Investigations**
Conducting the Investigation					An appropriate method, equipment, and units used. Results reported accurately and honestly. Any improvements to the method were implemented and recorded.
Safety					The investigation was conducted safely and ethically. Risk assessment completed.
7WS	**0**	**1**	**2**	**3**	**Processes, analyses and evaluates data from FHI and secondary sources to develop evidence-based arguments and conclusions**
Tables					Appropriate format used, included correct units, organised, the independent variable in the first column.

Part 2: Data Analysis

7WS	0	1	2	3	Processes, analyses and evaluates data from FHI and secondary sources to develop evidence-based arguments and conclusions
Tables					Appropriate format used, included correct units, organised, the independent variable in the first column.
Graphs					Appropriate graph type chosen, title, axes labelled, x-axis (independent variable or time), y-axis (dependent variable), even increments, data plotted correctly.
Processing Data					Identifies/extracts data from graph/table that supports/refutes hypothesis.
7WS Discussion/ Evaluation	0	1	2	3	**Discussion points in lab book and/or formal discussion in Report**
Analysing Data					Identifies patterns/trends/inconsistencies in data. Identifies ways to improve the quality of data.
Validity and Reliability					Identifies controlled variables, describes how to control variables, and assesses the effects on results. Describes the consistency/inconsistencies in results, identifies ways for improvement. Suggests thoughtful, meaningful and relevant improvements to the planned procedure

Part 3: Formal Report

9WS	0	1	2	3	Communicating – Presents science ideas and evidence in a formal scientific report
Scientific writing					Scientific language, terminology, text types and writing style used throughout, Clear concise language, targeting the appropriate audience. Written using third person passive voice.
Explanations					Presents sustained, logical and cohesive explanations – uses cause and effect statements, Evidence-based arguments
Images					Selects appropriate images, diagrams, tables, graphs that enhance descriptions and explanations of scientific phenomena.
Presentation					Organised with clear subheadings; information in appropriate sections of formal report; sections of report in correct sequence.
TOTAL					**/63**
Comments					