

Stage 5 - 2023

SCIENCE

Ms Nielsen/Ms Eagles



Task Number: 3

Notification Date: 14 /8/23

Weight: 30%

Due Date: 8/9/2023 (to teacher by 3:20pm)

OUTCOMES ASSESSED

SC5-4WS develops questions or hypotheses to be investigated scientifically.

SC5-5WS produces a plan to investigate identified questions, hypotheses or problems, individually and collaboratively

SC5-6WS undertakes first-hand investigations to collect valid and reliable data and information, individually and collaboratively.

SC5-7WS processes, analyses and evaluates data from first-hand investigations and secondary sources to develop evidence-based arguments and conclusions.

SC5-8WS applies scientific understanding and critical thinking skills to suggest possible solutions to identified problems.

SC5-9WS present science ideas and evidence for a particular purpose and to a specific audience, using appropriate scientific language, conventions and representations.

SC5-10PW applies models, theories and laws to explain situations involving energy, force and motion

TASK DESCRIPTION

The task:

NESA requires each Stage 5 Science student to undertake an individual project. In this task you will be required to ***independently plan and conduct a practical investigation*** on the unit of “Moving Things”. Please discuss your choice of investigation topic with your teacher BEFORE you begin.

You are required to keep a logbook that details what you did. You are encouraged to use photos and/or video to help document your project. After carrying out your research you will create a poster on your investigation to present your investigation in a visual format. You will need to hand in your logbook and visual presentation when you have completed your investigation.

There are four steps to complete this task

- **Part 1:** Project plan (in logbook)
- **Part 2:** Conduct your experiment (Logbook – show modifications to plan and reasons, research and raw data (record all results in your log book)
- **Part 3:** Analyse your results (in logbook – calculation of averages, draft graphs, identify and explain trends, explain mistakes and errors in results and how you reduced them, etc)
- **Part 4:** Present investigation on a poster.

Teacher's signature: _____ (Ms Nielsen)

_____ (MS Eagles)

Head Teacher's signature _____ (Miss Nott)

Deputy Principal's signature: _____ (Mrs Lawrence)

Assessment Presentation Guidelines

- Part 1: Project plan (in logbook)
- Part 2: Doing your experiment (Logbook – show modifications to plan and reasons, research and raw data (record all results in your logbook)
- Part 3: Analysis of results (in logbook – calculation of averages, draft graphs, identify and explain trends, explain mistakes and errors in results and how you reduced them, etc)
- Part 4: Experiment report presented on a poster.
- If a computer problem occurs the assessment must still be submitted on the due date. It must be provided on USB drive or via email.
- Assessments must be your own work
- Assessments must include a bibliography
- Plagiarism will result in a zero award. Plagiarism is the process of copying other people's work and not acknowledging them. Examples of plagiarism include slabs of information off the net, copied into an assessment and copying the work of others

Part 1 – Background research and designing your experiment (Logbook)

Plan your experiment in your logbook (use the marking scheme as a guide to what to put in your plan). You will be given **one period of class time** to work on your project plan, but most of your planning will need to be done at home. **You must get your plan approved by your teacher before doing your experiment.**

When you hand in your plan, you will also need to provide your teacher with a list of the science equipment you will need for your experiments. Be as specific as possible (eg. if you need beakers say what size you'll need and how many). Hand this in on a separate sheet of paper that has your name on it. You will have to provide equipment such as balls, straws, balloons, nails, lollies, etc.

Part 2 – Performing your experiment (logbook)

You will carry out your experiment during class time. You must be prepared to carry out your experiment during the 2 periods specified by your teacher. If you need extra time doing your experiment you must arrange this with your teacher.

Collect qualitative and quantitative observations when you carry out your experiment. Record your data and observations in your logbook. Also note any changes you make to your method in your logbook. Record your results in a table.

Refer to the marking scheme to guide you on what you need to do in this step.

Part 3 – Analysing results and evaluating your experiment (logbook)

Analyse your data and evaluate your experiment, eg. calculate averages, graph it, identify trends, etc. Show all working out in your logbook.

Identify mistakes and errors in your data and evaluate the validity of your conclusions.

Connect your results to information you found in your research to generate plausible inferences that explain your results.

Use the marking scheme as a guide of what to do in this step.

Using a logbook

Your logbook is like a diary of your project. Record all ideas, thoughts, research notes, sketches, results, drafts, changes to method and reasons, etc. in your logbook.
Put the date on each entry.

Why use a logbook?

It keeps all your work together so you have everything you will need to write your final report.
It shows the process you used to solve the problem. It shows the details of your work that will not fit onto a poster.

What should I use for a logbook?

- A 48 page exercise book, or
- Staple together a bundle of A4 paper, or
- Use a plastic sleeve or folder (if you use this option, ensure it is organised when you hand it in)

Part 4 – Presenting information in an experimental report (Poster or digital visual representation)

Select appropriate information and using appropriate software, present it on a poster. Use your logbook entries from Steps 1, 2 and 3 to write a report that is structured using the formal scientific report format (Introduction, Aim, Hypothesis, Equipment list, Risk Assessment (*Safety Considerations*), Method, Results, Discussion, Conclusion and Bibliography).

The graph(s) in your final report must be created using Microsoft Excel.

Guidelines for presenting your visual representation

The following points provide important information on how to set up your poster:

- Use as few words as possible and remember that your logbook must have the details recorded.
- The raw data belongs in your logbook.
- Results should be presented as graphs, charts and photos.
- As a rule of thumb you should be able to stand 1 metre away from your poster and be able to understand what is being presented, so don't have the writing too small.
- Your presentation or display should be a maximum of 1.2 m wide and 1.5 m high.
- It is important to display clearly without too much clutter.

INDEPENDENCE IN COMPLETING TASK

This assessment task is supposed to be a reflection of your own understanding. We understand that you may need help with some questions to give it your best shot. Please fill in the log below anytime you have help from a parent, another student or a teacher/aid.

[illegible]