

Assessment Task Notification



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| Faculty: Science | Course: Year 10 (Stage 5) | Time allowed: 6 weeks |
| Teacher: Karen Wallwork | | Email: karen.wallwork@det.nsw.edu.au |
| Task number: 1 | Title: Student Research Project | |
| Year: 10 | Due date: Week 9, Term 1 | Weighting: 35% |

Syllabus outcomes assessed:

WS5: produces a plan to investigate identified questions, hypotheses or problems individually and collaboratively

WS7: processes, evaluates and analyses data from first-hand investigation and secondary sources to develop evidence-based arguments and conclusions

WS9: presents science ideas and evidence for a particular purpose to a specific audience using appropriate scientific language, conventions and representations

21st Century and employment related skills:

| | | | |
|-------------------------------------|-------------------------|-------------------------------------|--------------------------------|
| <input checked="" type="checkbox"/> | Communication | <input checked="" type="checkbox"/> | Use of technology |
| <input checked="" type="checkbox"/> | Critical Thinking | <input type="checkbox"/> | Self-reflection and refinement |
| <input type="checkbox"/> | Creativity | <input checked="" type="checkbox"/> | Problem Solving |
| <input checked="" type="checkbox"/> | Collaboration | <input type="checkbox"/> | Initiative and Enterprise |
| <input checked="" type="checkbox"/> | Planning and Organising | <input type="checkbox"/> | Cross-Cultural Understanding |

Task description:

Students are to work through the booklet on 'The Science of Slime' during class time. This will involve research and conducting controlled experiments. They will then independently plan, choose equipment and perform a first-hand scientific investigation to solve a problem of their own choosing. Students will then submit a written report for marking.

Assessment criteria:

You will be assessed on your ability to:

Meet all marking criteria as outlined by the attached marking guidelines.

Method of task submission:

The task is to be typed and printed on A4 paper. It needs to follow the lab report scaffold guidelines. Both the report and the "Science of Slime" booklet are to be submitted together by the due date.

Marking guidelines:

| Grade | Descriptor | Mark |
|-----------------------|-------------------------------|------|
| A | See attached marking criteria | |
| B | | |
| C | | |
| D | | |
| E | | |
| N (Stages 5 and 6) | | |

| Outcome | Grade A Outstanding (5 marks) | Grade B High (4 marks) | Grade C Sound (3 marks) | Grade D Basic (2 marks) | Grade E Limited (1 or 0 marks) |
|---------------------------------------|--|--|---|---|---|
| Appropriate problem for investigation | Clearly and concisely poses an appropriate question that focuses on testing a single variable. | Poses a question that is appropriate and focuses on one variable – expression lacks clarity and precision. | Poses a question that involves more than one variable. | Poses a question that cannot be investigated in this inquiry. | Does not propose a question to investigate |
| | Includes all elements of a valid investigation report: Title, hypothesis, aim, abstract, equipment, diagrams, procedure, results, discussion and conclusion | Includes most of the elements of a valid investigation report: Title, hypothesis, aim, equipment, diagrams, procedure, results, discussion and conclusion | Includes some of the elements of a valid investigation report: Title, hypothesis, aim, equipment, diagrams, procedure, results, discussion and conclusion | Includes one or more elements of a valid investigation report: Title, hypothesis, aim, equipment, diagrams, procedure, results, discussion and conclusion | Includes no real elements of a valid investigation report: Title, hypothesis, aim, equipment, diagrams, procedure, results, discussion and conclusion |
| Report | Hypothesis is a prediction explaining the relationship between two variables The aim is identified and stated with appropriate verbs clearly and concisely | Hypothesis is a prediction describing the relationship between the variables The aim is identified and appropriately stated clearly and concisely | Hypothesis is a statement outlining the experiment and variables The aim is identified and appropriately stated | Hypothesis is a statement outlining the experiment The aim is partially identified and is stated in an unclear manner | No hypothesis has been stated or it is only outlined The aim is erroneous, irrelevant or is not stated |
| | WSS5 /25 Abstract clearly demonstrates research of topic/subject matter from a variety of 2ndry sources. Written material is relevant to the investigation & thoughtfully articulated | Abstract demonstrates research of topic/subject matter from a variety of 2ndry sources. Written material is somewhat relevant to the investigation & presented | Abstract demonstrates research of topic/subject matter from a minimum of 2ndry sources. Written material is slightly relevant to the investigation | Abstract presented is basic in quality, does not demonstrate research from 2ndry sources. Very little relevance to investigation. | Abstract shows little to no evidence of 2ndry source research and/or is not relevant to the investigation. And/or abstract not attempted. |
| Procedure | scientific methodology is thorough with an assessment of the variables and controls | scientific methodology is evident with some assessment of the variables and controls | scientific method is evident with variables and/or controls identified | scientific method described with some variables and/or controls identified | scientific method described |
| | WSS9 /10 evidence of a thoroughly valid procedure has been identified with sequential steps and appropriate choice of equipment. | evidence of highly valid procedure have been identified with sequential steps and appropriate choice of equipment | evidence of a sound procedure have been identified with sequential steps and appropriate choice of equipment | evidence of a basic procedure have been identified with sequential steps, and appropriate choice of equipment | No evidence of a procedure has been identified with sequential steps and appropriate choice of equipment |
| Results | relevant observations over an appropriate number of trials have been made and recorded in an organised, sequential and logical manner using correct units | observations recorded for a number of trials, in an organised, and logical manner using correct units | observations, where appropriate, have been made and recorded, with some evidence of consideration of the appropriate procedure or technology | observations, where appropriate, have been made with little or no evidence of selection of appropriate procedures or technology and are poorly or inappropriately organised | some observations made and/or poorly organised |
| | WSS7 /10 Results are presented in a way that helps others to interpret them. Graphs present and well constructed | Results are presented and meaningful, some inaccuracy is present in graphs and averages | Results and graphs are somewhat organised but not presented in a meaningful way and difficult to interpret | Results and graphs are poorly organised and not presented in a meaningful or clear way. | Some attempt made and/or no results or graphs presented. |
| Discussion and conclusion | only relevant information was selected and its reliability assessed | Information was selected and its reliability assessed | evidence of an understanding of the science content relevant to this investigation | little evidence of understanding of the science content relevant to the investigation | little or no evidence of understanding of the science content relevant to the investigation |

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|----------|---|--|--|--|---|
| WSS9 /15 | extensive and correct use of precise scientific terms | correct use of precise scientific terms | correct use of scientific terms | scientific terms used | Little use of scientific terms |
| | communication is convincing through clear, consistent and meaningful use of language, appropriate to the purpose and audience | communication is clear & consistent and language used is appropriate to the purpose and audience | use of language is adequate to communicate elements of the investigation to the appropriate audience | Communication of the elements of the investigation is basic and limited. | use of language poorly communicates investigation |

WSS5 = /25; WSS7 = /10 WSS9 = /25

Total /60 marks

Comments/feedback:



Year 10 Student Research Project Assessment Task

Date Set: Issued Week 4, Term 1, 2024

Date Due: Week 9, Term 1, 2024

Syllabus Outcomes:

- WS5:** produces a plan to investigate identified questions, hypotheses or problems individually and collaboratively.
- WS7:** processes, evaluates and analyses data from first-hand investigation and secondary sources to develop evidence-based arguments and conclusions.
- WS9:** presents science ideas and evidence for a particular purpose to a specific audience using appropriate scientific language, conventions and representations.

The student research project is a **mandatory** component of Science in Stages 4 and 5. The student research project promotes student inquiry, independent research and links the skills of working scientifically to the context of student's interests.

The content strands Years 7-10 state the requirement for students to engage in research projects.

All students are required to undertake at least one substantial research project during Stage 4 and Stage 5:

- at least one project will involve hands-on practical investigation.
- at least one Stage 5 project will be an individual task.

Assessment Task:

You have been working through a booklet on “The Science of Slime”, researching and conducting controlled experiments in class and presenting your work as a scientific report. In this first assessment task, you must independently plan, choose equipment and perform a first-hand scientific investigation to solve a problem of your choosing and then submit the written report for marking.

You will have 6 weeks to complete your experiment (suggested to start right away).

The task has been set to see how well you can: -

- Develop an inquiry question;
- Design an experiment to answer your inquiry question;
- Research and produce background information on the subject matter;
- Formulate an aim and a hypothesis;
- Include a control in your experiment;
- Make your experiment fair by controlling variables & identify the dependent and independent variables;
- Write a clear, procedure (including all materials) that allows others to follow;
- Carry out an experiment and organise your results using table and/graphs;
- Write a discussion - Interpret your results with an analysis of the data collected; and
- Communicate your ideas and information clearly in a written report.

NOTE: *Not permitted:* experiments using animals; explosive and/or flammable materials.

Criteria For Marking:

You will be assessed on:

- Meeting all marking criteria as outlined by the attached marking guidelines.

Further Information:

- This assessment task will be addressing the above 3 outcomes which will be used in your half yearly reports.
- This is a compulsory assessment task mandated by the NESAs.

NOTE: YOU MUST SUBMIT THE “SCIENCE OF SLIME” AND MARKING CRITERIA WITH YOUR ASSESSMENT TASK