THE RIVERS SECONDARY COLLEGE
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Assessment Task Notification

RICHMOND RIVER HIGH CAMPUS

Task Number	5	**Task Name**	Final Engineering Report
Course	iSTEM 200-hour	**Faculty**	TAS
Teacher	Mrs Hodgman	**Head Teacher**	Ms Godden
Issue date	Term 3 Week 1	**Due date**	Monday 10th November 2025
Focus (Topic)	Major Project	**Task Weighting**	25%

Context

Engineers and designers must communicate their work clearly, accurately, and persuasively to stakeholders. One of the most critical forms of communication in STEM industries is the engineering report — a structured document that documents the design process, technical decisions, data, and outcomes of a real-world project.

In this task, you will compile a professional-quality engineering report that documents the entire journey of your sustainable transport design solution. This includes your design thinking, planning, modelling, prototyping, testing, evaluation, and reflections on sustainability and impact.

The report must reflect authentic STEM practices and include well-organised visuals, data interpretation, and links to real-world applications and careers.

Task Summary:

You will submit a comprehensive Final Engineering Report that communicates the full design process of your sustainable transport project. The report will:

- Showcase your understanding of sustainable transport principles
- Explain the problem you investigated and how your design addresses it
- Include sketches, CAD screenshots, and photos of your prototype
- Present data from testing and explain its relevance
- Analyse the sustainability, usability, and impact of your design
- Reflect on your learning and potential career connections

You must use the engineering report structure taught during class, including headings, tables, figures, and appendices where relevant.

Assessment Components:

Your Final Engineering Report must include:

1. **Title Page and Contents**
    - Student name(s), project title, date, and class
    - Numbered sections and logical layout
2. **Executive Summary**
    - Summary of the whole report (purpose, major points, outline conclusions, make recommendations)
    - Allows the reader to understand what is in the whole report without having to read it
3. **Introduction**
    - Project overview and background context
    - Identification of user need and problem statement
4. **Research Summary**
    - Summary of key research findings
    - Reference to sustainable transport frameworks and relevant examples
5. **Design Process Documentation**
    - Brainstorming, concept development, and initial sketches
    - CAD screenshots with annotations
    - Summary of prototyping steps and iterations
6. **Testing and Data Analysis**
    - Testing methodology and results
    - Charts or tables of performance data
    - Efficiency, usability, or sustainability evaluation
7. **Reflection and Future Improvements**
    - Evaluation of project strengths and limitations
    - Suggestions for further development
    - Reflection on project challenges and learning
8. **Sustainability & Societal Impact**
    - Link to sustainability hierarchy and real-world needs
    - Explanation of how the design benefits users, the environment, or the community
9. **Conclusion & Career Pathways**
    - Summary of outcomes and personal achievements
    - Discussion of STEM careers linked to the project
10. **Appendices (if required)**
    - Additional sketches, interview notes, testing records, stakeholder feedback, etc.

Outcomes Assessed:

- **ST5-1:** Designs and develops creative, innovative, and enterprising solutions
- **ST5-2:** Demonstrates critical thinking, creativity, problem solving, and engineering design skills
- **ST5-3:** Applies engineering design processes to address real-world STEM-based problems
- **ST5-4:** Works independently and collaboratively to produce practical solutions
- **ST5-5:** Analyses a range of contexts and applies STEM principles and processes
- **ST5-6:** Selects and safely uses a range of technologies
- **ST5-7:** Applies project management strategies
- **ST5-8:** Uses techniques and technologies to communicate design solutions
- **ST5-9:** Collects and interprets data using appropriate mathematical and statistical methods
- **ST5-10:** Evaluates the impact of STEM on society and describes pathways into employment

Criteria	5 – High Achievement	4 – Commendable	3 – Sound	2 – Basic	1 – Limited
1. Design Process Communication *(ST5-1, ST5-3, ST5-4, ST5-7)*	Thorough, well-documented process with clear milestones, decision-making, and use of design thinking.	Clear documentation of process with some reflection and iteration.	Key steps of process described; some gaps in clarity or depth.	Basic process described with minimal detail or evidence.	Limited or unclear documentation of the process.
2. Visual Communication (Sketches, CAD, Photos) *(ST5-2, ST5-6, ST5-8)*	Excellent, well-labelled visuals; includes sketches, CAD, prototype photos; visuals enhance understanding.	Good range of visuals included; most are clearly labelled and relevant.	Visuals included but may lack clarity, detail, or completeness.	Few visuals included or poorly labelled.	Minimal or no visual communication.
3. Data Collection & Evaluation *(ST5-5, ST5-9)*	Relevant testing conducted; data is well-organised and analysed to support design decisions and improvements.	Testing and data collection included; basic evaluation provided.	Some testing/data included; analysis may lack depth.	Very limited testing; minimal or unclear data analysis.	No testing or evaluation of results evident.
4. Sustainability & Impact Analysis *(ST5-5, ST5-10)*	Clear and thoughtful analysis of environmental, user and community impact; strong alignment to sustainability hierarchies.	Links to sustainability made; some discussion of user or societal impact.	Sustainability briefly mentioned; relevance to transport hierarchy unclear.	Superficial sustainability reference; limited relevance or application.	No clear sustainability consideration present.
5. Reflection & Presentation *(ST5-2, ST5-8, ST5-10)*	Reflection is insightful, identifies growth and challenges; report is polished, well-organised and professionally presented.	Reflection and formatting are effective; report is generally well-organised.	Basic reflection included; formatting is functional but inconsistent.	Limited reflection or poorly structured report.	Report is disorganised, minimal reflection evident.

Total: ____ /25