Gymea Technology High School
INSPIRE. LEARN. SUCCEED.

9 Computing Technology

Task 2: Robomaster

Due Date: 5 Jun 2026

Distributed: 8 May 2026

Weighting: 30%

Task Type: Group Project

Syllabus Outcome/s: CT5-DPM-01, CT5-COL-01, CT5-OPL-01, CT5-THI-01

Unit: Building Mechatronic Automated Systems

Task Description

In groups of 2-3, you will need to design and implement an algorithm for the Robomaster EP to complete one of the following tasks (as assigned by your teacher):

- **The Collector**: This robot will need to locate and collect items, transporting them to a marked dropoff location.
- **The Courier**: This robot will need to navigate a pre-determined course by following assigned markers and deliver the items from the dropoff location to the destination location.
- **The Customer:** This robot will need to collect the item that has been delivered by The Courier and transport it to its final destination.

Part A - Group Folio
The folio should contain the following:

1. **Design:**
   a. **Introduction:** Outline the problem definition and each group members' role(s).
   b. **Content:** Describe the functional and nonfunctional requirements of the mechatronic system.
2. **Journal:** A journal of the development of the project solution that accurately illustrates the process of completing the task. It should clearly show modifications made to the code, problems and solutions encountered.
3. **Test Data (Desk Check):** Your group will need to thoroughly test the algorithm developed using a range of test data. It should clearly demonstrate errors or bugs found in the algorithm. You also need to clearly describe the reason for each check you perform.
4. **Evaluation:** An evaluation of the project which involves discussing the areas of success and improvement of your robot in the project.

Part B - Practical

1. **Code -** Your group will need to include code for your Robomaster

Glossary of Key Words

These verbs will provide an understanding of the detail needed to successfully complete this task:

- **Describe:** Provide characteristics and features
- **Evaluate:** Make a judgement based on criteria; determine the value of

Details of Submission

PART A - Group Folio
Submit the scaffold as provided on Classroom.

PART B - Practical
Upload a copy of your code to Classroom

Teacher Feedback and Student Self-Reflection

The task will be returned to students within **14 days** of the due date. Information on how to improve will be provided through written teacher feedback and the marking criteria. Students can clarify or seek further feedback by speaking with their teacher.

Upon return of the task and teacher feedback, students will also be expected to complete the following self-reflection form, to provide them with the opportunity to reflect on the strength of their performance, as well as areas that have been identified to strengthen in future tasks - https://forms.gle/Ck4y1jid49x7sKfq7

How does this link to my learning?

This task will allow students to:

- **CT5-DPM-01** - applies iterative processes to define problems and plan, design, develop and evaluate computing solutions
- **CT5-COL-01** - manages, documents and explains individual and collaborative work practices
- **CT5-OPL-01** - designs, produces and evaluates algorithms and implements them in a general-purpose and/or object-oriented programming language
- **CT5-THI-01** - applies computational, design and systems thinking to the development of computing solutions

Assessment Procedures

Students should be fully aware of the School Assessment Procedures for their year group. These were provided at the beginning of the school year and are available off the school website under the Learning menu for each year group.

Marking Criteria

PART A - Group Folio					
Criteria	**1**	**2**	**3**	**4**	**5**
Design	Identifies ONE design requirement to complete the scenario. Includes a basic statement of the problem and identifies one group member's role.	Provides an outline of the design requirements (functional or nonfunctional) for the mechatronic system to complete. Includes a brief problem definition and an outline of roles for all group members.	Satisfactorily describes the design requirements (functional and/or nonfunctional) of the scenario for the mechatronic system to complete. Includes a clear problem definition and describes the specific responsibilities assigned to each group member.	Thoroughly clarifies the design requirements (both functional and nonfunctional) of the scenario for the mechatronic system to complete. Includes a detailed problem definition and justifies the allocation of roles based on individual member strengths or tasks.	Extensively clarifies the design requirements (both functional and nonfunctional) of the scenario for the mechatronic system to complete. Includes a comprehensive problem definition and provides a sophisticated breakdown of group roles, leadership, and collaborative structure.
Journal	Students incorrectly record the journey of completing and modelling a system. The record is limited and incomplete and is presented inappropriately.	Students provide a basic record of project development that inaccurately illustrates the journey of completing the system. The record contains incomplete lesson by lesson accounts of work completed.	The record contains lesson by lesson accounts of work completed which includes, discussions, evaluations, images and milestones precisely timestamped and is presented appropriately.	The record contains detailed lesson by lesson accounts of work completed which includes, discussions, evaluations, images and milestones precisely timestamped and is presented in a professional manner.	The record contains detailed and accurate lesson by lesson accounts of work completed which includes, discussions, evaluations, images and milestones precisely timestamped and is presented in a professional manner.
Test Data	Test data is limited, providing minimal detail regarding testing conditions, expected outputs, or the underlying purpose of the tests.	Test criteria are identified for system components, including the specific conditions being tested and the anticipated outputs.	Descriptive test criteria are utilised, clearly articulating the testing conditions, the expected results, and a logical justification for why testing is being done.	Descriptive test criteria are utilised, clearly articulating the testing conditions, the expected results, and a logical justification for why each component is being tested.	Comprehensive test criteria are provided, featuring exhaustive testing conditions, precise definitions of successful outputs, and a rigorous rationale for how each test validates system performance.

Evaluation	Evaluation is incomplete and/or lists some areas of success or for improvement	Evaluation identifies some areas of success and/or areas for improvement	Evaluation outlines areas of success and areas for improvement based on predetermined functional and non-functional requirements	Evaluation describes areas of success and areas for improvement based on predetermined functional and non-functional requirements	Evaluation is detailed, objective and explains areas of success and improvement based on predetermined functional and non-functional requirements
					Part A TOTAL / 20
PART B - Practical					
Criteria	**0-3**	**4-9**	**10-14**	**15-17**	**18-20**
Coding and Problem Solving	Shows a limited understanding of coding concepts. The code is mostly incorrect or incomplete, with little evidence of problem solving. Attempts to address the task, but the solution does not work or is unclear.	Uses simple coding features, like basic variables or commands. Solves some parts of the problem, but may miss important steps. The solution is partly correct but not well-organised or connected.	Uses key coding features such as loops and functions. Follows a clear plan to build code that works for most of the task. The solution is organised and mostly correct, showing some understanding of both coding syntax and problem solving.	Applies advanced coding techniques, such as error handling or modular code (eg functions). Organises code effectively using valid syntax and solution provided solves nearly all parts of the problem.	Uses creative, complex coding solutions, combining different features (e.g. advanced functions, reusable code). Fully solves the problem, improves the code based on feedback, and clearly explains their choices. The solution is highly efficient, accurate, and easy to understand.
					Part B TOTAL / 20
					OVERALL TOTAL / 40

Literacy Criteria

Literacy Outcomes	Elementary achievement You have:	Limited achievement You have:	Satisfactory achievement You have:	High achievement You have:	Outstanding achievement You have:
	0	0.25	0.5	0.75	1
Vocabulary *Uses technical vocabulary to explain concepts and/or range of precise and appropriate words for effect*	Very limited response. Few content words used.	Only simple words are used.	Some precise and technical words are used.	Sustained use of precise and technical words.	Sustained, consistent and fluent use of precise and technical words.
Punctuation *Use of correct and appropriate sentence and other punctuation for effect, and to aid in reading of the text*	No evidence of correct sentence punctuation.	Sentence punctuation is correctly used in at least one place - *one sentence is punctuated correctly.*	Some correct sentence level punctuation (at least 50%). May attempt other punctuation where it is required.	Mostly correct sentence level punctuation (80%) and at least two correct examples of other punctuation.	Writing contains accurate use of all applicable punctuation.
Sentences & Cohesion *The intentional construction of a variety of sentences to match purpose and audience, and the control of multiple sentence threads across the whole text.*	No clear evidence of sentences: a list of words OR text fragments.	At least one sentence is used correctly. Some meaning can be construed from the text.	Some correct formation of sentences. Mainly uses simple and compound sentences, but may attempt more complex structures.	Most sentences are correct. Range of sentence types and connectives are evident, but with varied effectiveness.	All sentences are correct, effective and controlled, and include a range of sentence types and connectives (complex sentences and other sophisticated structures)
Paragraphs *Paragraphs are used to effectively structure information and partition events and ideas*	No correct use of paragraphing; may be a block of text or random breaks.	Ideas are separated; paragraphs may contain some unrelated ideas.	At least ONE paragraph is well structured and develops an idea	Writing is organised into paragraphs that assist the reader to digest chunks of the text, but may not be linked or executed effectively.	All components of the paragraphs are evident and paragraphing is consistent and well-developed across the whole text.
Text Structure *Uses features of the appropriate text type*	No evidence of the structural features of the appropriate text type. *No attempt to write in the appropriate text type and/or response is off task.*	Minimal evidence of the structural features - *1 component evident* - of the appropriate text type.	Some evidence of the structural features - *2 components evident* - of the appropriate text type.	Substantial evidence of the structural features - *all components evident but there may be some lapses* - of the appropriate text type.	Coherent and controlled use of **all** the appropriate structural features of the text type.
	Level of response is well below syllabus expectation	Level of response is below syllabus expectation	Level of response is equivalent to syllabus expectation	Level of response is above syllabus expectation	Level of response is well above syllabus expectation

Literacy Total / 5