

9.9P Wave Energy Project

Task

To design a wave energy project that utilises the knowledge of waves to make a useful device for life.

This device could harness wave energy and convert it into other useful forms or use the energy to make life more comfortable or appealing.

It must use at least one of these forms of energy:

Heat

Sound

Light

The task will involve

- Research
- Design planning and drafts
- Some experimental tests and measurements
- Final design and implementation
- Written report on its success and further improvements.

Possible Projects:

Heating Devices

1. Fast Cooling System- This system would enable liquids to be cooled quickly without refrigeration
2. Mechanical Heat generator- By use of kinetic energy an surface area, melt ice quickly

Sound Devices

3. Unique musical device - It can change volume and pitch to make musical sounds.
4. Sound magnifier - for those hard of hearing this device will enhance their listening experience.

Light Devices

5. Light show - this event will fascinate many with a host of colours and shapes
6. Light transmitter - this device will transport light from point A to B. obstacles are not an issue.

Assessment of Report

- Short Research of possibilities
- Drawings of Design and modifications
- Explanation of function with diagrams
- Equipment used
- Safety Identified.
- Test Results and problems encountered.
- Reflections:
 - o Was it successful?
 - o What issues did you encounter?
 - o How did you overcome some of these and further improvements that can be made.

Criteria for Marking Sheet

Elements:

Knowledge: Energy concepts and processes identified and applied to the project

Investigation: Plan Investigations. Design. Conduct tests. Identify problems. Draw conclusions

Communication: Explaining function and Uses Clear diagrams used in planning and reports.

Reflection: Reflect on ideas, learning and adjustments for better outcomes.

Criteria	A	B	C	D
Knowledge:	Comprehensive Knowledge and appropriate application of the Physics concepts learnt to the chosen task.	Knowledge with some appropriate application of Physics concepts to chosen task.	Shows some Knowledge and application to the task	Limited Knowledge and application of the task and Physics involved.
Design, Test and Modify Construction:	Detailed evidence of materials, planning and progression in designs.	Evidence of some materials, planning and progression in designs.	Materials and Designs presented	Some design effort
	Results show thorough and fair testing	Results show fair testing	Some Testing done	
	Applied test results well to complete an effective and efficient product.	Completed an effective, working product.	Completed a product that works to some level	Completed a product
Communication of test results, modification and function	Explains accurately and clearly how their design works, using correct scientific language and detailed diagrams. Test results clearly displayed. Modifications clearly explained.	Explains clearly their design and uses correct scientific language and clear diagrams to illustrate. Test results evident Modifications explained.	Explains their design. Uses diagrams and scientific language. Evidence of Modifications	Explanation and diagrams attempted.
Reflection	Insightful answers to effectiveness of product and adjustments required for a more effective device..	Good answers to effectiveness and limitations of product. Some thought to adjustments	Answers show some reflection of limitations and adjustments	Limited or no reflection.

