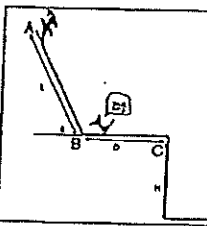



	YEAR 11 2AB PHYSICS 2011 MOVEMENT RESEARCH PROJECT	Student names

The Y11 physics movement research project requires you or your group to select a topic related to Movement as outlined in the Year 11 2AB physics program and conduct an experiment. This research project involves using the physics of movement to create an experiment. Objects such as: Parachutes, Hovercrafts, Yachts, Ships, Ice, Catapults, Skates and Ramps, shUttles, baLLs, RockEts & Scooters can be used in the research project.



Each research group must:	
1	Design a movement experiment
2	State a hypothesis
3	Conduct a movement experiment and collect data
4	Derive a predictive formula
5	Analyse the data to test the hypothesis.



The assessment information is given below:

Sequence		Marks	Date	Term	Week
Step 1	Handout marking Guide		7/3	T1	4
Step 2	Project outline due date	10	28/3	T1	9
Step 3	Project written report due date	40	29/6	T2	7
Step 4	Project oral presentation (starts)	50	TBA	T2 ?	7

2%
10%
3% } *CHANGED*

The wisdom of experience should not be ignored! So read on.

- It is strongly suggested that you do not wait till the last minute to conduct your experiment. Time is crucial and you will need this time to complete a good scientific written report and a well prepared oral presentation.
- Previous Y11 students have concluded that it is best to perform an early trial run of the experiment to ensure that:
 - you can conduct the experiment successfully, and
 - you can obtain satisfactory results that can be graphed.
- It is preferred that students conduct the research projects in pairs or by themselves!
- If you are unable to conduct & achieve a satisfactory result for your experiment you must:

a) See your physics teacher to discuss the issue/s. Suggested changes may lead to an improved result. If a successful outcome is not imminent then a topic change may be required.
b) If a research topic change is required (after the teacher discussion) the last date to effect a change is:
- If the project topic is changed (with approval from your teacher) you do not have to submit a new project outline. Marks allocated for your original project outline stand. It would then be best to conduct trials immediately.
- Marks are allocated for original and relevant projects.
- The report is to be stapled in the top left hand corner (not in plastic sleeves or presentation folders).
- Some of the equipment required for the project may be borrowed from the laboratory technicians in the science learning area. Ask politely when requesting equipment and you must sign for it and you are responsible for the equipment!

T1 week 10 Fri 04 April

THE RESEARCH PROJECT: WRITTEN OUTLINE		
The project outline is worth 10 marks. This report outline should be between 1 to 2 pages in length (font 12). The report outline should include:		
1	An experiment statement of the aim(s) and hypothesis	2 marks
2	A list of materials and equipment (NB: use dot points)	2 marks
3	An outline of your experimental method/procedure which shall include diagrams or sketches (NB: use numbered points)	4 marks
4	A possible results graph for your data with an explanation of what you expect the trend to be	2 marks

THE RESEARCH PROJECT: WRITTEN REPORT

The project written report is the scientific document of what was decided, what was done, what aspects were changed, what did not work, what the results are and the discussion. The mark allocated for the research project written report is 40 marks. The following are the basic steps:

1. Design the investigation, set up the experiment, conduct some trials and make observations. Redesign the experiment if necessary, and conduct the final investigation.
2. Analyse the data, generate a predictive formula and write a report using the assessment guide.

The following sections are the most significant

Presentation: This report must be printed on A4 paper with a font of 12. Printing the report in colour is not required. Marks will be deducted for poor presentation.

Method: This is a process where a documented experimental procedure can be repeated to obtain a similar result. Each step in the method should be numbered. The experimental method should be clear and refer to diagrams, sketches or photographs. If any apparatus is built or made, the method of construction should not be included in the experimental method (ie. Separate into parts A & B).

The experimental method which was included in your outline will be similar, but different, to your final experimental method. The final procedure must include diagrams or sketches.

If you have completed your method ask yourself this question "Could another student from a different group complete the experiment by following your method?" If the answer is no, then you will need to modify your method.

Results: The results that you obtain must be collated and graphed. From these results a predictive formula must be derived.

Discussion: The results must be interpreted. Trends or lack of any trends must be identified and explained. The predictive formula should be discussed. The predictive formula should also be tested.

The marking outline is attached to this document. The following tips and checklist are aimed to help you score highly on your report.

PLEASE NOTE:

Do not leave it to the last weekend to complete the experiment. Making up data to suit the experiment may result in a significantly reduced mark!

Things will go wrong and time will be needed to rectify and repeat the experiments. Sufficient time has been allocated for the completion of this major assessment.

The report will be assessed according to the attached marking key. The report must use the following mandatory headings in your report.