



Motto:
"Not for self but for others"

Aspley State High School Science Department

Subject: Year 11 Physics **Due Date :** 16th September, 2009.
Context: Amusement Park Physics
Category: Extended Response Task **Time:** Approximately 2 weeks following field trip.
Instrument No.: 3

Teacher: Mr Sparks

Name: _____

Other group members:

Checkpoints:

1. 28/08/09 Data collected
2. 04/09/09 Initial calculations completed.
3. 09/09/09 Draft reports submitted

Results

KCU	IP	EC

The Task:

You are required to use data collected on your visit to Dreamworld together with information gained from a number of other sources to prepare a detailed report of the physics involved in two of the following rides. If at all possible you should confirm or otherwise refute claims made by Dreamworld about these rides:-

One of these

Cyclone
Giant Drop
Tower of Terror

And one of these

Motorcoaster
Reef Diver
The Claw

In each report you should:

- Identify the claims made by Dreamworld about the ride.
- Identify the key Physics concepts that combine to generate the "experience" of the ride.
- Explain your methods employed to validate/refute these claims.
- Address any discrepancies/errors in your measurements and calculations.
- Compare and cross reference your results with the claims made by Dreamworld.

The combined length of your two reports should be between 800 & 1000 words

Details of these rides are available on Dreamworld's website

<http://www.dreamworld.com.au/dw/dreamweb.nsf>

ACKNOWLEDGEMENTS OF ASSISTANCE:

I have cited sources accurately from	YES	NO
Print resources		
Electronic/Technological resources		
Human Resources		
I have acknowledged help from others		

Except as acknowledged above, I declare this work to be my own.

Signature

Date

Year 11 Physics – Extended Response Task Criteria Sheet.

Criterion	Reference	Level of Achievement				
		A	B	C	D	E
Knowledge and Conceptual Understanding	KCU1 Recognition and reproduction of Principles and theories.	The student is able to appropriately select, reproduce and interpret principles and theories in complex and challenging situations.	The student is able to appropriately select, reproduce and interpret principles and theories in complex or challenging situations	The student is able to appropriately select, reproduce and interpret principles and theories in simple situations.	The student is able to reproduce some principles and theories in simple situations.	The student can reproduce isolated facts.
	KCU2 Identification of, and linking of, concepts.	The student is able to compare and explain complex concepts, processes and phenomena with respect to Amusement Park rides.	The student is able to compare and explain concepts, processes and phenomena with respect to Amusement Park rides.	The student is able to explain simple processes and phenomena with respect to Amusement Park rides.	The student is able to describe simple processes and phenomena with respect to Amusement Park rides.	The student is able to recognise simple isolated phenomena with respect to Amusement Park rides
	KCU3 Application of Algorithms	The student is able to link and apply algorithms, concepts, principles theories and schema to explain complex and challenging applications of Physics to the Amusement Park setting.	The student is able to link and apply algorithms, concepts, principles theories and schema to explain complex or challenging applications of Physics to the Amusement Park setting.	The student is able to apply algorithms, concepts, principles theories and schema to explain simple applications of Physics to the Amusement Park setting.	The student is able to apply algorithms, concepts, principles theories and schema.	The student is able to apply given algorithms in simple situations.
	KCU OVERALL RESULT					

Criterion	Reference	Level of Achievement				
		A	B	C	D	E
Investigative Processes	IP1 Managing the research task.	The student manages the research task appropriately, adheres to all check dates and submits the final report by the due date.			The student does not meet the submission times for check dates and/or the final report is submitted after the due date.	
	IP2 Data Collection	The student has appropriately selected and used technology and equipment to gather record and process valid data.	The student has appropriately selected and used technology and equipment to gather record and process data	The student has appropriately selected and used technology and equipment to gather and record data	The student has appropriately used technology and equipment to gather and record data	The student has gathered data.
	IP2 Referencing	The student has accurately referenced and acknowledged all sources used in the report. The report contains a complete and accurate bibliography.			The student has made an attempt to reference some sources.	The student has presented information without referencing.
	IP3 Relationships in data and information.	The student has systematically analysed primary and secondary data to identify relationships between patterns, trends, errors and anomalies.	The student has analysed primary and secondary data to identify patterns, trends, errors and anomalies	The student has analysed primary and secondary data to identify obvious patterns, trends, errors and anomalies	The student has identified obvious patterns and errors.	The student has recorded data.
	IP OVERALL RESULT					

Criterion	Reference	Level of Achievement				
		A	B	C	D	E
Evaluating and Concluding	EC1 Analysis and comparison.	The student has demonstrated the ability to analyse and evaluate complex scientific interrelationships.	The student has demonstrated the ability to analyse complex scientific interrelationships.	The student has demonstrated the ability to describe scientific interrelationships.	The student has demonstrated the ability to describe simple scientific interrelationships.	The student has demonstrated the ability to describe obvious scientific interrelationships.
	EC2 Evaluation	The student is able to appropriately justify their conclusions and/or recommendations.	The student is able to explain some conclusions and/or recommendations.	The student is able to suggest some conclusions and/or recommendations.	The student has identified some conclusions.	The student has provided some statements about outcomes.
	EC3 Communication	The student has used discrimination in the selection, use and presentation of scientific data and ideas making the report accessible to its intended audience.	The student has selected, used and presented scientific data and ideas making the report accessible to its intended audience.	The student has used a variety of formats to present the data.	The student has used a limited range of formats to give the data meaning.	The student has provided data in one format only.
	EC OVERALL RESULT					