



Teacher Program Overview + Schedule

Newton's Rollercoaster's – Year Ten

Program Duration: Full Day or Half Day

Minimum Participants: 20 Students

Program Overview:

The Year 10 science curriculum explores the major branches of sciences, investigating them in different scales and unifying them to allow a generalised understanding of scientific phenomena. Within Year 10 science, one of the major branches is the study of the physical sciences. Within this unit, students will explore the concept of energy conservation and how energy is transferred and transformed within a system. Students also explore the relationship between mass, acceleration and force and apply these relationships to explain and justify a change in motion to an object with reference to Newtonian forces, and careful consideration and reference to the Australian Curriculum, Year 10 science students who partake in this physics program will experience Newtonian forces, laws of motion in the application of the thrill rides offered at Warner Bros. Movie World.

Students will collect evidence in the form of personal observations and the systematic collection and recording of various types of data such as acceleration and height to determine whether the thrill rides offered at Warner Bros. Movie World comply with the foundational laws of physics.

Program Schedule

Time

8.45am	Arrival
	Students and teachers to meet staff member at the ticket booths at the front of Warner Bros. Movie World.
9.00am	Education Program
	Program to commence in park at selected attractions (dependant on unit of focus)
9.45am	Program Conclusion
	At the conclusion of this session, students will be free to enjoy the park for the rest of the day, at the teacher's discretion.

Alignment with the Australian Curriculum:

SCIENCE

Science Understanding	
Physical Sciences	- Energy conservation in a system can be explained by describing energy transfers and transformations (ACSSU190)
	- The motion of objects can be described and predicted using the laws of physics (ACSSU229)
Science as a Human Endeavour	
Use and influence of science	- People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities (ACSHE194)
	- Values and needs of contemporary society can influence the focus of scientific research (ACSHE230)
Science Inquiry Skills	
Questioning and predicting	- Formulate questions or hypotheses that can be investigated scientifically (AC SIS198)
Planning and conducting	- Plan, select and use appropriate investigation types, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods (AC SIS199)

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	- Select and use appropriate equipment, including digital technologies, to collect and record data systematically and accurately (AC SIS200)
Processing and analysing data and information	- Use knowledge of scientific concepts to draw conclusions that are consistent with evidence (AC SIS204)
Evaluating	- Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data (AC SIS205)
	- Critically analyse the validity of information in primary and secondary sources, and evaluate the approaches used to solve problems (AC SIS206)
Communicating	- Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations (AC SIS208)