



# Teacher Program Overview + Schedule

## Rollercoaster Science – Year Eight

**Program Duration:** Full Day or Half Day

**Minimum Participants:** 20 Students

### Program Overview:

The Year 8 science curriculum explores the major branches of sciences, investigating them in different scales and unifying them to allow a generalised understanding of scientific phenomena, with one of the major branches comprising study of the physical sciences. Within this unit, students will explore the concept of energy, the different forms in which it appears and the transformations and transfers between systems.

Students will experience a full day or half day excursion in which they will research various types of rides and use their findings to design a feasible ride of their own. They will summarise their findings and present their ride design to the class.

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 in park comply with the foundational laws of physics and how students may replicate their results in their own roller coaster design.

## Program Schedule

### Time

<b>8.45am</b>	<b>Arrival</b>
	Students and teachers to meet staff member at the ticket booths at the front of Warner Bros. Movie World.
<b>9.00am</b>	<b>Education Program</b>
	Program to commence in park at selected attractions (dependant on unit of focus)
<b>9.45am</b>	<b>Program Conclusion</b>
	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 appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems (ACSSU155)
Science as a Human Endeavour	
Nature and development of science	- Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available (ACSHE134)
	- Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE226)
Use and influence of science	- People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE136)
Science Inquiry Skills	
Questioning and predicting	- Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (AC SIS139)
Planning and conducting	- Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed (AC SIS140)
	- Measure and control variables, select equipment appropriate to the task and collect data with accuracy (AC SIS141)

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Processing and analysing data and information	- Summarise data, from students' own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence (AC SIS145)
Evaluating	- Reflect on scientific investigations including evaluating the quality of the data collected, and identifying improvements (AC SIS146)
	- Use scientific knowledge and findings from investigations to evaluate claims based on evidence (AC SIS234)
Communicating	- Communicate ideas, findings and evidence-based solutions to problems using scientific language, and representations, using digital technologies as appropriate (AC SIS148)