

THEME PARK MECHANICS

Session Brief | KS4

(1 Hour)

How do our rides work? Gain an insight into the theme park world and take an inside look at some of our biggest rides. Put mechanics theory into context of our engineering department at Drayton Manor and how they look after and maintains some of the UK's best rides and rollercoasters.

Session Content - Mechanics

- Kinetic & potential energy on rollercoasters and rides.
- G forces (only in physics focused sessions).
- Rollercoaster: chain lift mechanism, planetary gearing in reduction gear boxes, safety features.
- Rollercoaster: friction brakes & fail safe pneumatic RAM vs eddy-current magnetic brakes.
- Rollercoaster wheels: how do they work?
- Safety Harnesses.
- How rides are controlled by PLC systems.
- Apocalypse operation: winch drum with counter weight, hydraulic RAMs.
- Air race operation: slew rings and pinion gears.
- Centrifugal and centripetal forces (only in physics focused sessions).

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