



## ROLLERCOASTER PHYSICS

Take charge of your own K'Nex rollercoaster in a session which explores the physics behind a rollercoaster. This 45 minute session is designed so that your students will conduct an experiment to explore the variables which might affect a rollercoaster ride. G-force and energy types are also covered. Real rollercoaster parts are also used in this session to bring the activity to life. Great for KS2 physics and to learn about how rollercoasters work!

### EDUCATIONAL / LEARNING OBJECTIVES:

- To explore gravity, friction and air resistance through experiments
- To understand how forces affect the rides
- To recognise the link between gravity and energy
- To work scientifically through an investigation

### BY THE END OF THE SESSION (Depending on age of students):

- Through our coaster experiment, children will understand that the height of a drop affects the ride speed and begin to discuss why this is. They will learn about balanced / unbalanced forces and cover the term kinetic and potential energy.
- They will link the activity to the rides in the Park and understand the importance of forces when designing a rollercoaster ride.



### LINKS TO THE NATIONAL CURRICULUM:

Working scientifically through an investigation to explore forces.

Yr 5 Forces - explain that objects fall towards Earth due to gravity. Identify the effect of air resistance and friction. Know the work of Isaac Newton.

### ADDITIONAL INFORMATION:

This is an structured investigation in our Lab, led by the Education Team. We will discuss forces, linking them continuously to the rides in the Park whilst students conduct an experiment to see how different variables affect whether the coaster carriage can complete the loop. Children will note down their findings which can be taken back to class.

Group leaders can then link the session to the rides when out in the Park.

[education@paultons.co.uk](mailto:education@paultons.co.uk)

[@paultonseducate](https://twitter.com/paultonseducate)