

Workshop	Science of Rollercoasters – Secondary Edition
Recommended Year Groups	7-10
Subject	Science (Physics), Design and Technology
Workshop Description	<p>Discover and investigate what energy transfers occur during a rollercoaster cycle. Discussion on the forces involved including gravity, friction, air resistance and centripetal force during a loop-the-loop. Pupils will work in groups to design and build their own LEGO® model Rollercoaster.</p> <p>The science covered within this workshop can be tailored to suit the age and prior learning of your students.</p>
Duration	45 minutes
Equipment	LEGO track (including loops) and 2x2 bricks and 2x2 plates
Capacity	30 students
Lesson Aims and Objectives	<ul style="list-style-type: none"> <li>✓ Identify the effects of gravity, air resistance, friction and centripetal forces</li> <li>✓ Understand how gravitational potential energy stores are transferred to kinetic energy stores and others that then dissipate</li> <li>✓ Identify and solve their own design problems and understand how to reformulate problems given to them</li> <li>✓ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>✓ Critique, evaluate and test their ideas and products</li> </ul>

