



Year 5 sum 2	Concept	Subject Skill (Learning Objective)	Subject Knowledge	Pedagogical Content (how you will teach)
Day 1	Investigate	I am learning to use analysis of existing products supported by accurate, factual information to inform my own work	I can explore how fairground rides use mechanical systems to operate	<p>KQ: How do fair grounds work?</p> <p>This term, we have been learning about Nottingham City. <i>What events happen each year in Nottingham? Discuss summer fair and goose fair.</i> Explain that a company have created a chair-o-plane ride for the market square summer fair. They are struggling to get their mechanisms to work and would like the help of Year 5 to design a chair o'plane that is operated through programming.</p> <p>Show a short video of fairground rides. <i>What rides were there? How did they move? How were the different rides able to move?</i> Discuss ideas and feedback</p> <p>Children will annotate an image of fairground rides labelling and describing the functions and mechanisms they have noticed in the video.</p> <p>Discuss the design brief as a class. <i>A company has asked Year 5 for help to develop their chair o'plane ride for the Market Square summer fair.</i></p>
Day 2	design	I am learning to use annotated sketches, cross sectional exploded diagrams and increasingly complex prototypes.	I can design a fair ground ride following a brief.	<p>KQ: Can you design a fair ground ride?</p> <p>Explain that this week, we are going to be learning about how mechanical systems are used to create fairground rides, and how these mechanical systems are controlled/operated.</p> <p>Use the PPT to introduce the 'Chair-o-plane' ride, and to explain how it works. Write the key vocabulary for the key mechanical elements up on display for children.</p> <p>Children to sketch the chair-o-plane, designing the appearance and labelling the different mechanical elements to explain how it will work.</p> <p>Plenary- <i>share your design, how will you chair-o-plane move?</i> Should be fun and engaging etc.</p>
Day 3	Make	I am learning to use complex electrical circuits and components to create functional products, and program computers to control their products	I can make a mechanical product which will be programmed	<p>KQ: Can you make a 'chair-o-plane'?</p> <p>Work together as a class, using the PPT to support to make a model of the chair-o-plane.</p> <p>Plenary- how does it move? How are you going to program your chair-o-plane?</p>
Day 4	Evaluate	<p>I am learning to give reasons supported by evidence for the success of aspects of a product and provide solutions to resolve those parts that could be improved</p> <p>I am learning to test and evaluate products to identify the variants which may affect the function of the product</p>	I can evaluate my mechanisms and overall product against the design brief.	<p>KQ: How do you program a 'chair-o-plane'</p> <p>Using the PPT and crumble kits, work through together as a class to program the chair-o-plane.</p> <p>KQ: Can you test your 'chair-o-plane'?</p> <p>Children to test their chair-o-plane programming.</p> <p>Plenary - <i>Did you programming work? How did your ride move? How could it be improved?</i></p>

Powerpoint, existing product evaluation, exploration sheet, card, split pins, syringes, plastic tubing, balloons, cardboard boxes, evaluation of own work sheet

Vocabulary

Design, product, criteria, purpose, evaluate, sketch, annotate, join, mechanisms, mechanical systems, movement, levers, linkages, pneumatics, hydraulics,

