Fairground : Design and Technology : Year 6

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To look at a range of existing fairground rides and investigate how they move.	Children to explore and discuss different fairground rides they have been on. They will think about how they move, what are the components that join them together and the mechanisms that make them work by labelling different pictures of fairground rides.	• Can children identify the moving parts of a rotating ride/ object? • Are children able to create a detailed diagram of their chosen ride/object? • Can children go some way to explaining how they think a ride/object is powered and/or built?	• Slides • Fairground Lesson 1 Video • Picture Cards • Worksheet 1A/1B/1C • Variety of objects with rotating parts (FSD? activity only) • Large sheets of paper (FSD? activity only) • Optional - screwdrivers
Lesson 2	To investigate ways of using electrical motors to create rotating parts.	Children explore how pulleys and belts can create rotational movements using a motor. They will then investigate how the configuration of different-sized pulleys and the way the belt around them is placed can affect the movement created. Alternatively, the children can experiment with the different ways a motor can be programmed to create appropriate speeds, directions and even pulses of movement.	• Do children understand how pulley and belt systems can be used to transfer movement? • Can children describe how an electrical circuit with a motor can be used to create rotating parts? • Can children manipulate their pulleys to create different movements?	• Slides • Challenge Cards A/B • Wires, motors, switches, etc. for electrical circuits • Elastic bands, cotton reels, dowelling, card, etc. • Challenge Card C (FSD? activity only) • Laptops/tablet with coding software (FSD? activity only) • Programming kits with motors (FSD? activity only)
Lesson 3	To create prototype models to investigate stable frameworks.	Children to explore and investigate creating a framework for different fairground rides in preparation for designing and making their own fairground ride. They will work through various challenges to learn different skills that will help with constructing their fairground ride.	• Can children describe ways of strengthening and reinforcing structures? • Can children suggest ways in which ideas for frameworks could be developed to ideas for their own fairground ride designs? • Can children use a variety of materials and components accurately?	• Slides • Worksheet 3A/3B/3C • Card, dowelling, string, paper, straws, etc. • Glue, scissors, rulers, etc. • Ride Cards (FSD? activity only) • Cameras/tablets to record (FSD? activity only)
Lesson 4	To be able to design a fairground ride with a rotating part.	In this lesson the children will use their previous research and learning from the prototype lesson to inform their designs for a rotating fairground ride. They will need to think about the making process as well as the materials and tools they will need. Alternatively the children can use CAD software to plan the shape and design of their ride.	• Can children make a decision about what kind of ride they will make? • Can children design an appropriate electrical circuit for their ride? • Can children describe the process they will need to go through to successfully complete their product?	• Slides • Worksheet 4A/4B • Optional: Photos of the children's prototypes from previous lesson • Laptops (FSD? activity only)
Lesson 5	To be able to make a fairground ride following a design.	This lesson challenges your class to create their electrical rotating fairground rides using their planned design. The children will use the methods they experimented with in lesson three to create a stable structure for their ride which has moving parts and a hidden electrical circuit.	• Can children follow a design to create a fairground ride with a rotating part? • Can children work accurately and safely with a variety of tools, materials and electrical components? • Can children identify ways of improving their fairground rides to create a finished product of a high quality?	• Slides • Completed designs from lesson 4 • Appropriate components for electrical circuits • Card, dowelling, straws, string, elastic bands, cotton reels, empty boxes, etc. • Scissors, craft knives, glue, tape, etc.
Lesson 6	To be able to evaluate a finished product.	Once children have finished their fairground ride, this lesson challenges your class to reflect and evaluate their creations. Children will be asked a series of questions designed to support them in their evaluations.	• Can children evaluate a finished product fairly? • Can children suggest ways they could improve their product if they were to make it again? • Can children recognise ways in which they have been successful?	• Slides • Completed fairground ride models • Worksheet 6A/6B • Worksheet 6C (FSD? activity only)

NB: 'FSD? activity only' refers to the alternative 'Fancy Something Different...?' activity within the lesson plan