MTP – DT – Autumn 2

Topic	How does a Ferris wheel work? (DT Kapow Mechanisms fairground)				
N.C Learning Objectives	• Design purposeful, functional, appealing products for themselves and other users based on design criteria • Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology • Select from and use a range of tools and equipment to perform practical tasks • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics • Explore and evaluate a range of existing products • Evaluate their own ideas and products against a design criteria • Build structures exploring how they can be made stronger, stiffer, and more stable • Explore and use mechanisms in their products				
Vocabulary	**Ferris wheel** A ride at a fairground which carries passengers around a large vertical wheel.	**Stable** Object does not easily topple over	**Strong** Something that is not easily broken e.g. wood, brick, building	**Mechanism** The parts of an object that move together as part of a machine	**Axle** A long straight piece of material which connects to a rotating component e.g. the wheels of a car
Did you know?	The first Ferris wheel to be built was called the Chicago wheel, in 1893 over 100 years ago! It was over 80 meters tall.	Bricks are made from clay. They are stiff and strong.	Wood comes from tress. It is strong and flexible.	Metal comes from ore, that is mined underground. It is strong and hard.	
	LEARNING OBJECTIVE	**STICKY KNOWLEDGE FACT**	**CORE LEARNING**		
Lesson 1	To explore wheel mechanisms and design a wheel	The features of a ferris wheel are an axle, wheel, base and pod's.	Children recap how wheels work, evaluate existing big wheels and create a design for their own fairground wheel		

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Lesson 2	To select appropriate materials	Materials have different properties. When designing structures, you have to consider the materials suitability for the purpose e.g. are they strong, rigid or flexible?	Through exploration and experimentation, children work out the most suitable materials and techniques for creating their wheels
Lesson 3	To build and test a moving wheel	The shape and the material used to build a structure is important as this determines the structures strength and stability.	Using their knowledge of structures, children build their frames and wheels before assembling their fairground rides, adapting their designs as necessary
Lesson 4	To make and evaluate a structure with rotating wheel	An evaluation is used to review the good and bad points about something and think about how to improve it.	Taking care that their Ferris wheels can still rotate freely, children add their pods and final decorative touches
Outcome	Build a Ferris wheel		