Progression of skills and knowledge 'Mechanisms'		Year 1- Moving storybooks	Year 2- Wheels and Axles	Year 4- Pneumatic toys
Skills	Design	-Explaining how to adapt mechanisms, using bridges or guides to control the movement. -Designing a moving story book for a given audience.	-Designing a vehicle that includes wheels, axles and axle holders, that when combined, will allow the wheels to move. -Creating clearly labelled drawings that illustrate movement.	-Designing a toy which uses a pneumatic system. -Developing design criteria from a design brief. -Generating ideas using thumbnail sketches and exploded diagrams. -Learning that different types of drawings are used in design to explain ideas clearly.
	Make	-Following a design to create moving models that use levers and sliders.	-Adapting mechanisms, when: ▪ they do not work as they should. ▪ to fit their vehicle design. ▪ to improve how they work after testing their vehicle.	-Creating a pneumatic system to create a desired motion. -Building secure housing for a pneumatic system. -Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy. -Selecting materials due to their functional and aesthetic characteristics. -Manipulating materials to create different effects by cutting, creasing, folding and weaving.

	Evaluate	-Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed. -Reviewing the success of a product by testing it with its intended audience.	-Testing wheel and axle mechanisms, identifying what stops the wheels from turning, and recognising that a wheel needs an axle in order to move.	-Using the views of others to improve designs. -Testing and modifying the outcome, suggesting improvements. -Understanding the purpose of exploded-diagrams through the eyes of a designer and their client.
Knowledge	Technical	-To know that a mechanism is the parts of an object that move together. -To know that a slider mechanism moves an object from side to side. -To know that a slider mechanism has a slider, slots, guides and an object. -To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.	-To know that wheels need to be round to rotate and move. -To understand that for a wheel to move it must be attached to a rotating axle. -To know that an axle moves within an axle holder which is fixed to the vehicle or toy. -To know that the frame of a vehicle (chassis) needs to be balanced.	-To understand how pneumatic systems work. -To understand that pneumatic systems can be used as part of a mechanism. -To know that pneumatic systems operate by drawing in, releasing and compressing air.
	Additional	-To know that in Design and technology we call a plan a 'design'.	-To know some real-life items that use wheels such as wheelbarrows, hamster wheels and vehicles.	-To understand how sketches, drawings and diagrams can be used to communicate design ideas. -To know that exploded-diagrams are used to show how different parts of a product fit together. -To know that thumbnail sketches are small drawings to get ideas down on paper quickly.