Mechanisms/Mechanical Systems 2024-2025

	Evaluate	Project/Make	Skills	Knowledge
Nursery				
Reception	Explore moving vehicles through play. Build vehicles with moving wheels using construction kits.	A vehicle-themed book cover with moving wheels for our writing.	Design and make a 2D vehicle. Able to cut around a circle template for the wheels. Attach cardboard wheels using a split pin (with support).	Have some understanding about how wheels move. Know that moving parts can be incorporated into a design. Know and use technical language including: attach, join, template, vehicle, wheel, axle. Understand the importance of using equipment safely.
Y1	Explore different examples and explain how the sliders and levers work.	Moving dinosaur as part of learning around fossils	Design and make moving dinosaur using a slider. Able to attach a split pin. Use suitable finishing technique such as felt-tips, paint, collage	Understand that different mechanisms produce different types of movement. Know that mechanisms can move in a straight line forwards and backwards, round and round or in a curve. Build upon taught technical language and know words including: mechanism, slider, lever, pivot, slot, bridge/guide. Know how to work safely.
Y2	Examine different toy vehicles. Name parts and investigate how they are put together to make a moving	Design a buggy to race with.	Draw an example of a wheeled vehicle, labelling the main parts. Fix wheels using taught technique. Able to mark out, hold, cut and join materials and components correctly.	Understand how wheels work and how wheels and axles are positioned. Understand that wheels and axles can be attached in two different ways, fixed and freely moving. Choose a suitable box for their design from a variety of different shaped boxes. Consider size and thickness of wheels. Build upon taught technical language and know words including: axle, axle holder, chassis, friction, dowel, fixed, free, assemble. Know how to work safely.
Y3	Examine familiar objects that use air to make them work.	Make a toy for a child	Plan by making an annotated sketch.	Understand and use pneumatic mechanisms. Build upon taught technical language and know words including:

			Accurate marking out and cutting.	components, fixing, attaching, pneumatic system, process, input/output movement, inflate, deflate. Know about the work of James Dyson.
Y4				
Y5	Examine how cams can be used to produce movement.	Make a toy for a child.	Plan by making an exploded diagram. Develop measuring, marking, cutting, shaping and joining skills. Able to use a bench hook and G-clamp to secure the dowling while cutting. Able to measure accurately the cam/follower to ensure the mechanism works smoothly.	Know how to work safely and follow a safe method of using equipment and resources. Understand that mechanical systems have an input, process and an output. Understand how cams can be used to produce different types of movement and change the direction of movement. Build upon taught technical language and know words including: cam, peg cam, pear-shaped cam, follower, axle, shaft, crank, handle, housing, framework, oscillating motion, reciprocating motion, rotary motion, cam, snail cam, off-centre. Learn about computer aided manufacture.
Y6				