

Knowledge Organiser Design & Technology Year 3 Autumn

Mechanical Systems - Pneumatic Toys



St Elizabeth's Catholic Primary School
"Love one another as I have loved you"

Exploded-diagram	A diagram which shows all of the parts of a product, including the internal and external parts.
Function	How something works.
Input	Input is the motion used to start a mechanism.
Linkage	Lengths of material (for example, metal or card) that are joined together by pivots, so that the links can move as part of a mechanism.
Mechanism	The parts of an object that move together as part of a machine.
Motion	The movement an object makes when controlled by an input or output (e.g. left, right, up, down).
Net	A 2D flat shape, that can become a 3D shape once assembled.
Output	Output is the motion that happens as a result of starting the input.
Pivot	The central point, pin, or shaft on which a mechanism turns or swings.
Pneumatic system	A mechanism that runs on air or compressed gas.
Thumbnail sketch	Small drawings to get ideas down on paper quickly.

Design → **Make** → **Evaluate**

Knowledge and skills covered in this topic

- ❑ Children will know how pneumatic systems work.
- ❑ Children will know that a mechanism is a system of parts that works together to create motion.
- ❑ Children will know that a pneumatic system can be used as part of a mechanism.
- ❑ Children will know that pneumatic systems force air over a distance to create movement.
- ❑ Children will know that there are three different types of pneumatic systems that can be used to design a toy.
- ❑ Children will know the different types of drawings used in a design to explain ideas such as thumbnail sketches and exploded diagrams.
- ❑ Children will create secure housing for their pneumatic toy.

Prior knowledge

Year 1: Understanding of sliders and mechanisms, knowing how to create sliders for a story book.

Year 2: Understanding the use of levers and pivots for movement. Identifying the role of inputs and outputs in a mechanism.

