Year 4 Design and Technology: Moving Toys Knowledge Organiser

Unit Vocabulary –

user	a person who uses something
purpose	the reason why something is done or created
design features	characteristics that meet an intended user and purpose
design brief	a document or set of instructions that outline what the purpose of the project is and what is required
design criteria	The precise goals that a project must achieve in order to be successful.
functional properties	how something works
aesthetic properties	how something looks
compression	Something that is squashed such as air in a tube
components	a part that when put together makes a product
input	the trigger that makes a system do what it is supposed to do
process	the part of a system that receives a signal from the input components and then tells the output components what to do
output	the part of the system that does the work
inflate	fill something with air or gas to swell up
deflate	The air or gas is removed and the object shrinks
assemble	to fit together separate components
finish	to complete the manufacture or decoration of a product by giving it an attractive appearance

Key Learning: Pneumatic Systems

Mechanical systems make things move.

Mechanical systems can also be called **Mechanisms**. In all mechanisms, there is an **input** and **output**.

(**Output**) The force of the air causes the rocket to shoot into the sky.

(**Input**) Stand on the step, (**pressure**) it's full of air. The air flows through the tube.

Pneumatic systems are mechanisms which uses air or gas . Pneumatics are used in many everyday products such as air pumps and pneumatic drills.

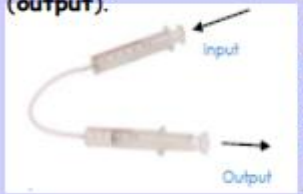
Air pump

Pneumatic drill

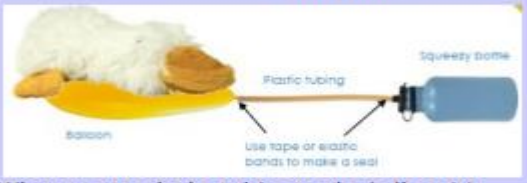
Technical Knowledge and Understanding:

Pneumatic components:

(**Input**) The air inside the **syringe** moves through the **tubing** and **inflates** the balloon (**output**).



When you press the **syringe** all the way in (**input**) the trapped (**compressed**) air inside the tube causes the second **syringe** to move all the way out (**output**).



When we attach the **tubing** to the balloon it's important to use tape to make a **seal** and make it **air-tight** so no air will escape.

What are the different types of movement?

Linear, rotary, oscillating and reciprocating