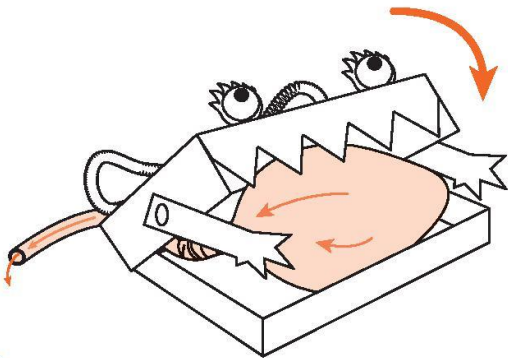


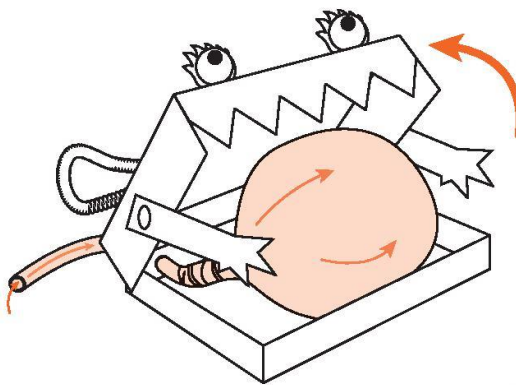
## Mechanical systems - Pneumatic toys

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.

When air exits the balloon, the monster's mouth closes.

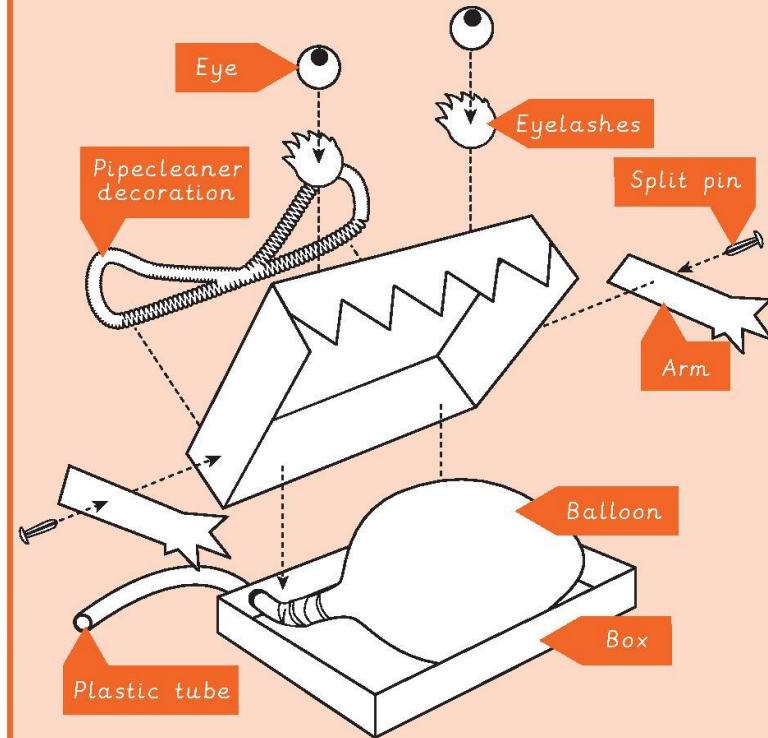


When air enters the balloon, the monster's mouth opens.

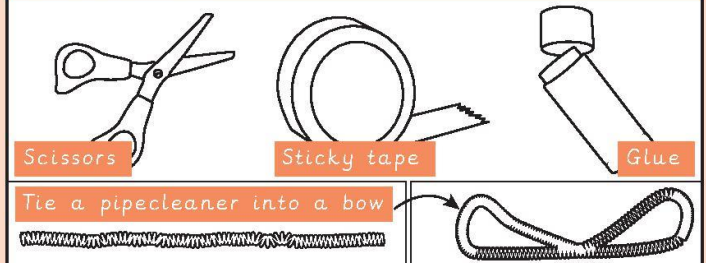


## Key facts

Exploded-diagrams allow us to see how a product is put together and the different components inside.



You will need:



Sessions and Key Learning

Session	Key Learning	Activity
1	<p>Exploring pneumatic systems</p> <p>Does water have power?</p> <p>What causes waves?</p> <p>How is most electricity made?</p>	<p>Introducing key vocabulary</p> <p>Exploring pneumatic systems through experiments with tubing and syringes</p> <p>CH: What happens when a tyre is pumped up?</p>
2	<p>Designing a pneumatic toy</p> <p>What are our key components?</p> <p>What will move on our toy?</p> <p>What will our inputs and outputs be?</p>	<p>Vocabulary matching in pairs</p> <p>Share STEM video link and discuss share ideas</p> <p>Complete initial thumbnail sketches</p>
3	<p>Designing a pneumatic toy</p> <p>What is its purpose?</p> <p>What pneumatic systems will you use?</p>	<p>Review thumbnail sketches</p> <p>Exploded diagram for idea</p> <p>Detail materials to be used</p>
4	<p>Creating a pneumatic system</p> <p>How will your design work?</p>	<p>Present ideas to class – act like a professional.</p> <p>Building casing and pneumatic system</p>
5	<p>Creating a pneumatic system</p> <p>Which ones work best and why?</p>	<p>Experiment, amend and review</p> <p>Complete moving model</p> <p>Peer assessment</p>
6	<p>Decorating our pneumatic toy</p>	<p>Complete design and share with Year 1/2</p>