

Y3— Mechanisms—Pneumatic Toys



What I already know:

- design purposeful, functional, appealing products for themselves and other users based on design criteria.
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.
- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.
- explore and evaluate a range of existing products.
- evaluate their ideas and products against design criteria Technical knowledge.
- build structures, exploring how they can be made stronger, stiffer and more stable.
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Vocabulary

Exploded diagram—A diagram which shows off 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 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.

Net—A 2D flat shape that can become a 3D shape once assembled.

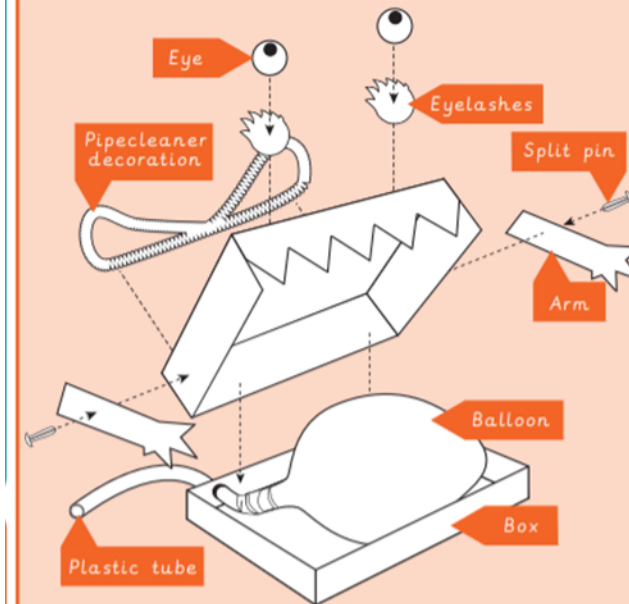
Output—Output is the motion that happens as a result of starting the input.

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.

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



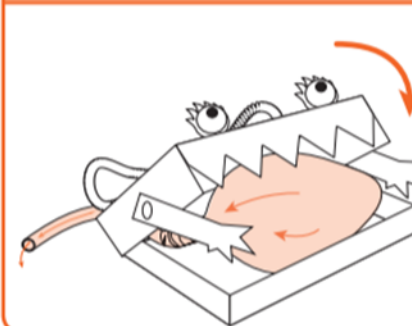
You will need:



What I will know:

- I will understand that mechanics are a system of parts that work together to create motions.
- I will understand that pneumatic systems can be used as part of a mechanism and they can be used in a variety of objects.
- I will understand that pneumatic systems force air over a distance to create movement.
- I will be able to develop design criteria from a design brief using thumbnail sketches and exploded diagrams.
- I will be able to design and make a pneumatic toy using recycled household objects.
- I will understand the different types of drawings to support my design.
- I will create a pneumatic system to create a desired motion in a secure housing.
- I will know how to use these various components to make a functional and appealing pneumatic toy.

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



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

