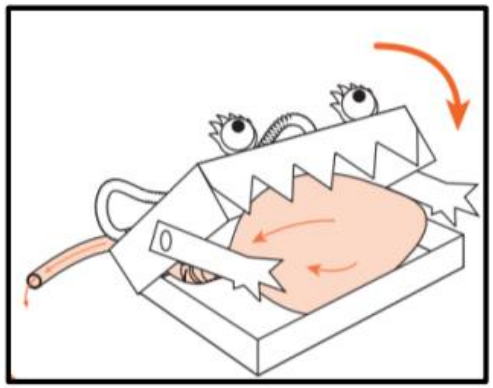
Mexborough St Johns DT Knowledge Organiser: Mechanisms- Pneumatics Y3

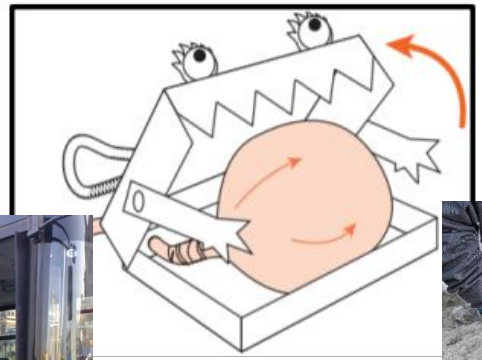
Types of Mechanisms:

Pneumatics

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



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



Vocab:

Mechanism: A device used to create movement in a product.

Pneumatic system: A mechanism that runs on air or compressed gas.

Pressure: A continuous physical force exerted against something.

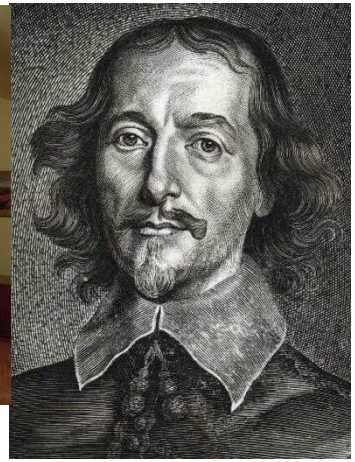
Inflate: To fill with air or gas.

Deflate: To let air or gas out.

Input: The motion used to start the mechanism.

Output: The motion that happens as a result of starting the input.

Syringe: A tube with a nozzle and piston for sucking in and blowing out air or water.



Key Skills and Knowledge:

- Mechanisms create movement, so you need to decide where you want the movement to happen by using what happens in the story
- All things are designed with specific purpose and audience.
- Use levers and pivots to create opening and closing of jaws.
- Trial and error will determine how much pressure is required to operate.
- Joints need to be secure to prevent breakages and tearing.
- Strong materials are needed for the outer shell to withstand the force from pressure.
- Designs and prototypes need to be evaluated and adapted based on need.

Mentionable Mechanisms and People:

The origins of pneumatics date back to Ancient Greece with a mathematician named Hero of Alexandria wrote about his inventions using steam and wind. In the 1600s, German born Otto Von Guericke further developed the idea with the vacuum pump.

Pneumatics are no longer just used for small machines. Now they are used in large scale machines as well such as the doors and adjustable floor of buses, the pneumatic drill and pipe organs.