
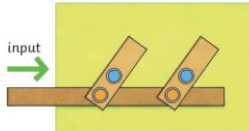
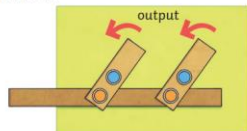
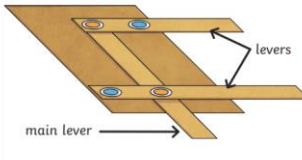
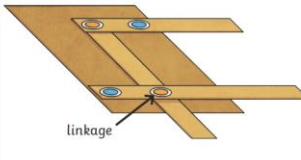
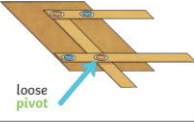
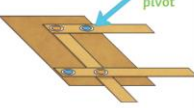
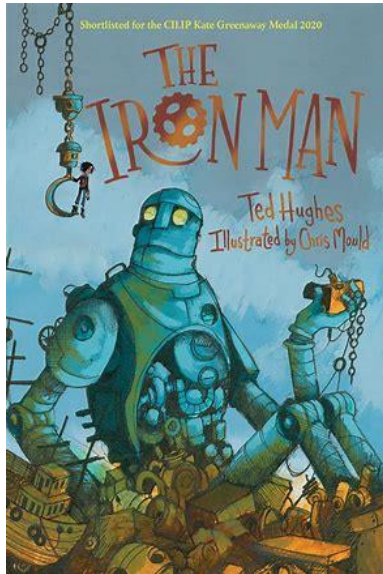




Key Facts	Styles	
<p>Lots of objects use air to help them move. For example, a sliding whistle, a bicycle pump, a beach ball, an arm band.</p> <p>Pneumatic systems are systems that use air pressure to make things move or work properly. Lots of machinery in factories use pneumatics too.</p> <div><div></div><div><h3>A pneumatic drill</h3><p>Pneumatic drills use air pressure to push the chisel down while a spring pushes it back up. This repeats very quickly and is strong enough to cut through rock and pavements.</p></div></div>	<div><div><div><h4>Exploring Mechanical Systems</h4><p>Many mechanisms take one type of <b>input motion</b>, and <b>output</b> it as a different type of <b>motion</b>. In lever and linkage mechanisms:</p><div><div><p>Input - The movement of the main lever by the user.</p></div><div><p>Output - The movement that is made by the smaller levers.</p></div></div></div><div><div><h4>Lever</h4><p>The simplest type of mechanism. A lever is a stiff bar which moves around a <b>pivot</b>.</p></div><div><h4>Linkage</h4><p>The part of the mechanism used to join one or more levers to produce the type of movement required.</p></div></div></div><div><div><h4>Loose Pivot</h4><p>Joins the levers together.</p></div><div><h4>Fixed Pivot</h4><p>Joins the levers to the overall object.</p></div></div></div>	
Key Learning:	Prior Learning:	Books for support/ Enrichment Opportunities:
<p><b>Designing</b></p> <ul style="list-style-type: none"><li>• Generate realistic ideas and design criteria through discussion, focusing on the needs of the user.</li><li>• Use annotated sketches and prototypes to develop, model and communicate ideas.</li></ul> <p><b>Making</b></p> <ul style="list-style-type: none"><li>• Order the main stages of making.</li><li>• Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.</li><li>• Select from and use finishing techniques suitable for the product.</li></ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"><li>• Investigate and analyse books and, where available, other products with lever and linkage mechanisms.</li><li>• Evaluate our own products and ideas against criteria and user needs, as we design and make.</li></ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"><li>• Understand and use lever and linkage mechanisms and pneumatic systems.</li><li>• Distinguish between fixed and loose pivots.</li></ul>	<ul style="list-style-type: none"><li>• Explored and used mechanisms such as flaps, sliders and levers.</li><li>• Gained experience of basic cutting, joining and finishing techniques with paper and card.</li></ul>	<div><p>Shortlisted for the CHIP Kate Greenaway Medal 2020</p></div>

Subject Specific Vocabulary	
Key word	Definition
Mechanism / mechanical system	Something that uses related components which act together to create a movement
Motion	Movement from one place to another
Pivot	To turn on a central point
Rotary motion	Turning around in a circle eg a wheel
Linear motion	Moving in a straight line, eg paper trimmer
Reciprocated motion	Moving forwards and backwards in a straight line, eg cutting with a saw.
Oscillating motion	Swinging from side to side in an arc, eg pendulum in a clock
Pneumatics	Systems that use air pressure to make things move or work properly