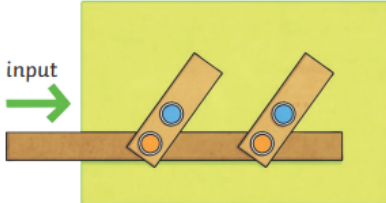


Linkages and Levers

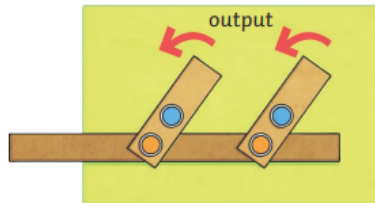
Exploring Mechanical Systems

Many **mechanisms** take one type of **input motion**, and **output** it as a different type of **motion**.
In lever and linkage **mechanisms**:

Input - The movement of the main lever by the user.

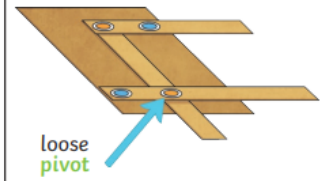


Output - The movement that is made by the smaller levers.



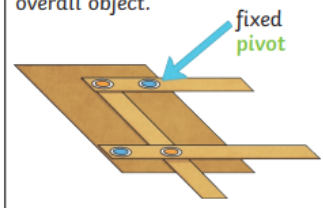
Loose Pivot

Joins the levers together.



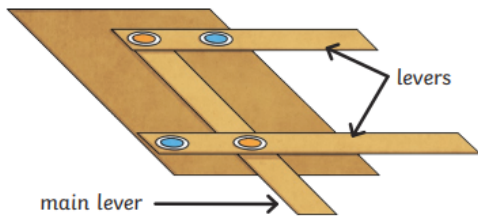
Fixed Pivot

Joins the levers to the overall object.



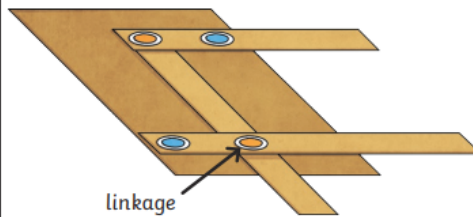
Lever

The simplest type of **mechanism**. A lever is a stiff bar which moves around a **pivot**.



Linkage

The part of the **mechanism** used to join one or more levers to produce the type of movement required.



Key Vocabulary

mechanism/mechanical systems	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.

Types of Motion in Mechanical Systems

rotary motion	Turning round in a circle, e.g. a wheel.
linear motion	Moving in a straight line, e.g. paper trimmer.
reciprocating motion	Moving forwards and backwards in a straight line, e.g. cutting with a saw.
oscillating motion	Swinging from side to side in an arc, e.g. a pendulum in a clock.

The Design Process

Design Brief	Design Criteria	Generating Ideas	Prototype	Make the Product	Evaluation																
<p>A planning document that explains what the project is, how it will be achieved and the time frame that it needs to be made in.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Design Brief</p> <p>Setting the scene We are the recycling unit of Rankin City Council. We want to help you get the most out of your recycling service by highlighting what the items that can be recycled for containers get overboard.</p> <p>Defining the project To help promote recycling, we would like you to design a recycling poster to help encourage recycling and explain what items from the home can be recycled, what they can be recycled in and the benefits of recycling. The poster will be used at getting facilities involved in recycling. The project will be completed within 5 lessons.</p> </div>	<p>Tells you what a product must do to be successful.</p> <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Priority</th> <th>Design Criteria</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	Priority	Design Criteria							<p>Exploring different products and thinking about how they could be adapted. Creating an annotated sketch of your idea.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>THE LAST NEW RECYCLE all of these items from your KITCHEN</p> </div>	<p>The first example of what the real thing will look like. It is used for testing, development and evaluation.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>THE LAST NEW RECYCLE all of these items from your KITCHEN</p> </div>	<p>Using the annotated sketches and prototypes to help create your product.</p> <div style="text-align: center; margin-top: 10px;"> </div>	<p>Checking that the product meets the design criteria and has achieved its purpose.</p> <table border="1" style="margin-top: 10px;"> <thead> <tr> <th>Design criteria</th> <th>Evaluation</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	Design criteria	Evaluation						
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