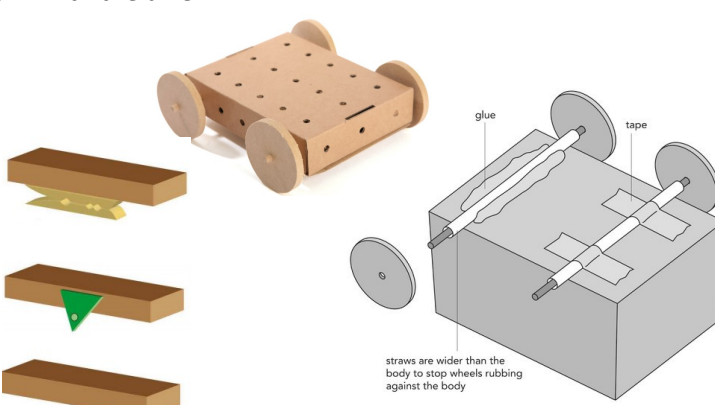
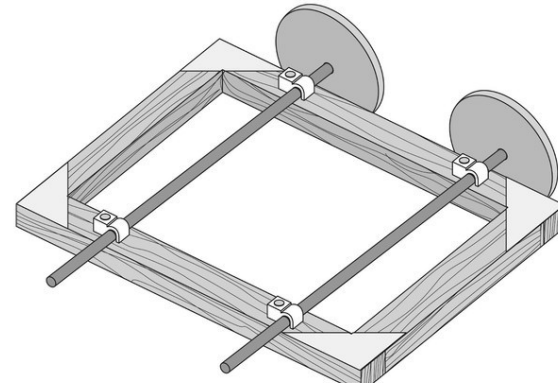




Year 2 Mechanisms (wheels and axles)

**Prior Learning:** Sliders and levers in Year 1. Explored moving vehicles through play. Gained some experience of designing, making and evaluating products for a specified user and purpose. Developed some cutting, joining and finishing skills with card.

Facts	Vocabulary
<p><b>1. Fixed and free axles</b></p> <div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p align="center"><b>Fixed axle.</b></p> <p>The axle is fixed to the body and the wheels are free to turn on the axle.</p> </div> <div style="width: 45%;"> <p align="center"><b>Free axle.</b></p> <p>The wheels are fixed to the axle and the axle turns in a bigger tube called the bearing.</p> </div> </div> <ul style="list-style-type: none"> <li>The bearing is the hollow tube that the axle goes through. The bearing must be bigger than the axle so that the axle can turn easily.</li> </ul>	<ol style="list-style-type: none"> <li>Axle— a rod that enables a wheel to rotate. The wheel can rotate freely on the axle or be fixed to, and turn with, the axle.</li> <li>Axle holder—the component through which an axle fits and rotates.</li> <li>Chassis—the frame or base on which a vehicle is built.</li> <li>Friction—resistance which is encountered when two things rub together.</li> <li>Dowel—wooden rods used for making axles to hold wheels.</li> </ol>
<p><b>2. Examples of two different ways to fix wheels</b></p> <p>Free axle—The pictures shows you different ways to fix the bearings onto the body. The axle rotates freely and the wheels turn with the axle.</p>  <p>Fixed axle—The next picture shows you the other way to let the wheels turn. This time the axle remains fixed and the wheels turn on the axle. The axle is fastened to a wooden body with cable clips.</p> 	<p><b>Youtube:</b>  <a href="https://www.youtube.com/watch?v=XIZYPFDJTJM">https://www.youtube.com/watch?v=XIZYPFDJTJM</a> - Understanding wheels and axles.</p>  <p><b>Real world wheels and axles</b></p>  <p><b>Bee-Bots</b></p> <p>Bee-Bots are a programmable toy that are an example of wheels turning on a fixed axle. The axle is inside the bottom of the Bee-Bot and the wheels are free to turn through the bottom.</p> <p>Wheels can move by either:</p> <ul style="list-style-type: none"> <li>* Pulling them,</li> <li>* Pushing them,</li> <li>* Adding a motor (like a car).</li> </ul> <p><b>Job opportunities</b></p> <ul style="list-style-type: none"> <li>* Mechanical engineer</li> <li>* Mechanical designer</li> <li>* Auto mechanic</li> <li>* Auto designer</li> </ul>