

**What we should be able to do and/or know by the end of the unit:**

Identify some features that would appeal to the client and create a suitable design.  
 Explain how their design appeals to the client.  
 Make stable structures, which will eventually support the turbine, out of card, tape and glue.  
 Make functioning turbines and axles that are assembled into the main supporting structure.  
 Say what is good about their windmill and what they could do better.

**What we are going to learn (Los)**

- To include individual preferences and requirements in my design.
- To design a net for a structure.
- To make a stable structure.
- To assemble the components of my structure.
- To evaluate my project and adapt my design.

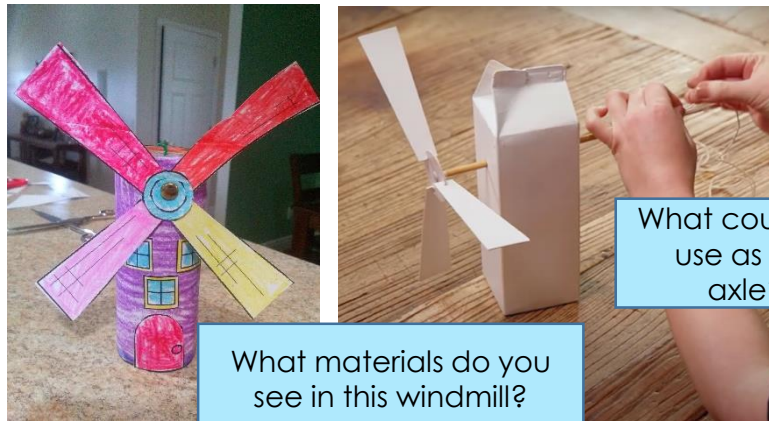
**Designing a Windmill**

**Key vocabulary**

<b>windmill</b>	A machine that uses wind to create energy and power.
<b>structure</b>	a building or other object constructed from several parts.
<b>axle</b>	A pin or shaft that holds the rotating piece in place but allows it to move.
<b>net</b>	A 2D design of an object that will be built in up into a 3D form.
<b>template</b>	The planning and 2D images of a 3D structure.
<b>model</b>	The 3D structure once it's been built in a smaller version.
<b>unstable</b>	Something that's easy to break or fall apart.
<b>stable</b>	Something that will not break or fall apart.



Old and New windmills. What can you see that's different?



What materials do you see in this windmill?

What could we use as the axle?

**Key skills or knowledge**

<b>Design</b>	<ul style="list-style-type: none"> <li>• Learning the importance of a clear design criteria; Including creativity and requirements in a design.</li> </ul>
<b>Make</b>	<ul style="list-style-type: none"> <li>• Making stable structures from card, tape and glue.</li> <li>• Learning how to turn 2D nets into 3D structures.</li> <li>• Following instructions to cut and assemble the supporting structure of a windmill.</li> <li>• building turbines and axles which are built into into a main supporting structure.</li> </ul>
<b>Evaluate</b>	<ul style="list-style-type: none"> <li>• Evaluating a windmill according to the design criteria.</li> <li>• Testing whether the structure is strong and stable and finding ways to fix it if not.</li> </ul>