



Design Brief

Design, make and evaluate a windmill. It will have a stable upright structure with moving parts.

Key Vocabulary

turbine	The parts of a windmill that move in the wind.
windmill structure	The part that makes the windmill stand up.
axle	The part from which the turbines move.
strong	Something that doesn't break easily.
stable	Something that doesn't topple over.
generate	To produce/make.

Key Skills

- Materials can be joined in different ways for example using glue, tape. Different joins are used for different effects and reasons.
- Some simple mechanical systems can be moved with levers, sliders, wheels and axles.
- The windmill structure must be strong and stable so that the mechanism can work.
- A product (windmill) must be appealing to the person it is being made for. You can do this by carefully decorating the product with different materials e.g. paint, paper, tissue paper

What I Should Already Know

- Materials can be joined in different ways using glue, split pin, tape etc.
- Think of simple design ideas for a product.
- How to use and carry scissors safely.





Key Information

- Windmills may be used to grind grain into flour, to pump water, or to produce electricity.
- A windmill has a number of blades that spin around when wind blows on them. The blades are mounted on a tall tower or building. They are connected to a vertical shaft, or rod.
- People in western Asia built the earliest known windmills more than 1,000 years ago. They used these windmills to grind grain. By the 1800s, however, many people used steam engines rather than wind power to run mills and to do other work.
- Today modern windmills, called wind turbines, produce electricity for many communities. A group of wind turbines working together is called a wind farm.

Links to other Learning

- Geography - Australia
- Art - Sculpture and Form
- Science - materials, forces
- Maths - measures
- D & T - structures and mechanisms all year groups

Key Questions

- Appearance/aesthetics - how will it look? Do I like what I have made? Why or why not?
- Cost - how much will it cost to make?
- Customer - who is it for and why?
- Environment - can it be recycled?
- Size - how big or small is it? Have you sketched your windmill before making it?
- Safety - is it safe to use by everyone? How will you make your windmill stand up?
- Function/purpose - can you say what you are making? How does it work?
- Materials- what will you use to make it and why? Who/what influenced your choices?
- Manufacture - how will you make it? Does it work how it should?

