

**Year
4**

Design and Technology

Making a model wind turbine

Our Changing Planet

Key learning

Carry out research about wind turbines.

Investigate effective wind turbine designs evaluating shape, size and material.

Design a scaled wind turbine
Use cross-sectional diagrams.

Use design sketches to build a scaled model of a wind turbine.

Evaluate and improve the scaled model.

Plan and present findings of the project

Investigate how gears work.

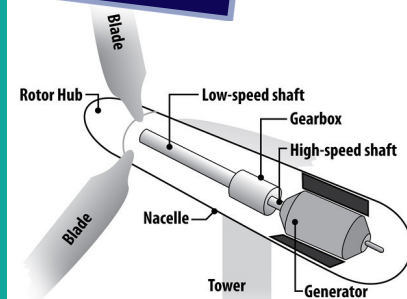
Design Brief

Research, plan and make a scaled model of a wind turbine. Present your model to Tameside Council and explain how wind turbines work.



Researching Existing Products

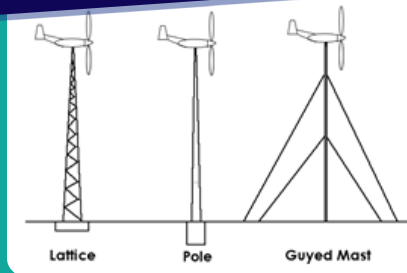
Wind turbine diagram



A picture of a wind farm



Types of wind turbine towers



Key skills and related vocabulary:

Turbine - A turbine is a type of engine that can extract energy from sources like air, steam and water

Wind farm - A grouping of wind turbines in an area.

Rotor - The part of a turbine that turns

Blades - The blades are attached to the rotor and catch the air

Nacelle - The housing at the top of a turbine that holds all the components

Gearbox - Contains the gears

Gear - Wheels with teeth that slot together

Generator - Converts energy from the turning rotor to electrical energy

Tower - The structure that holds the nacelle

Foundation - The base that is in the ground. It carries the weight of the whole turbine

Cross-sectional diagram - A cross section diagram is what you would see if you could take a 'knife' and cut through the object and see what the new surface/profile looks like.

Health and Safety

- Tie back long hair
- Roll up your sleeves
- Walk safely and calmly around the classroom
- Keep your work and floor area clear
- Follow all instructions
- Use any tools as instructed by an adult