



# Year 6 —Design and Technology—Knowledge Organiser

## Measuring wind

### Wind Power

As the Earth is heated by the Sun, some regions become warmer than others. The air in the warm regions rises. Air from cooler regions rushes in to replace it. This creates air currents - what we know as the wind.

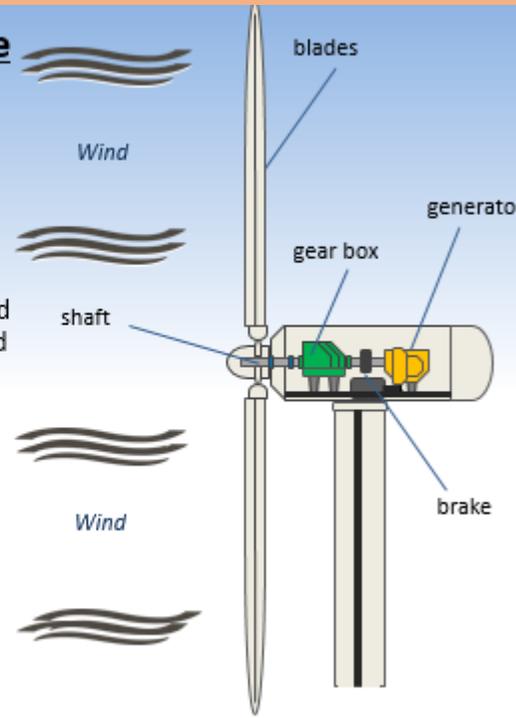
Wind turbines use the wind to make electricity. It is a renewable source of energy as the wind will never run out unlike coal or gas. It also doesn't pollute the environment with gasses. They can be built on land or off the coast where they are called 'Off shore wind farms'. The turning of the blades transfers energy to a generator.

### How Can Wind Make Electricity?

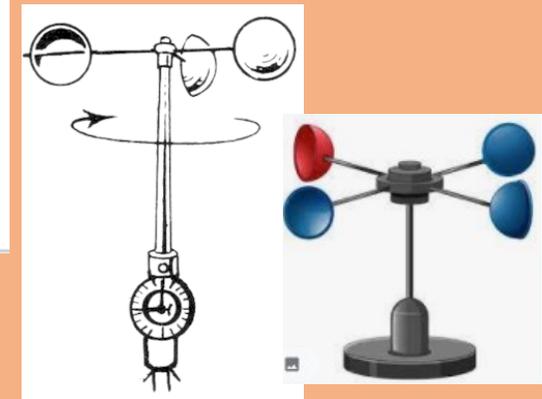
When the wind blows it pushes the blades on the turbine causing them to rotate.

The spinning blades are connected to a shaft which is then connected to a gear box. This gear box helps the blades spin faster.

The gear box is connected to a generator which produces the electricity. The turbines are also fitted with a brake.



Anemometers are tools for measuring wind speed. They have cups that catch the wind. As the wind blows, the cups rotate, making the rod spin. The stronger the wind blows, the faster the rod spins. The anemometer counts the number of rotations, or turns, which is used to calculate wind speed.



The shape of the blades effect how well the wind turbine will work. The blades tend not to be flat, they may have as light angle to help them catch the wind.

### Key Vocabulary

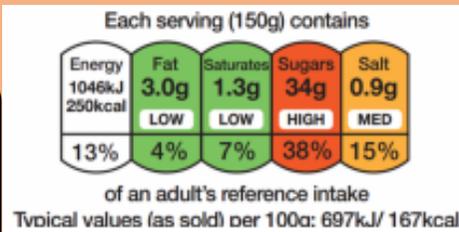
<b>Renewable energy</b>	Energy that will not run out. Usually from sources such as wind and sun.
<b>Resistance</b>	Withstanding or holding back a force.
<b>Rotational movement</b>	Movement that goes round in a circular motion.
<b>Linear movement</b>	Movement in a straight line

<b>Anemometer</b>	In instrument to measure wind.
<b>Aerofoil</b>	A blade with a curved top.
<b>Motor</b>	A device producing motion or action.
<b>Nutrient</b>	Something that provides nourishment for a health body and healthy growth,
<b>Dam</b>	Structure to hold back water.

<b>Fibre</b>	A carbohydrate that the body can not digest.
<b>Flood plain</b>	Built to collect water away from urban areas and farm land.
<b>Weir</b>	A barrier over water that redirects the flow.
<b>Flash Flood</b>	Sudden raising in flood waters with no prior warning.

### Healthy Eating

Nutrition labels feature on most food products and help you make good choices about the nutrient values of the food you are eating.



Many products use a 'Traffic light system' to try and communicate information about food. Green indicates it is a healthier choice for that type of nutrient. Amber means it has average nutrient content and you can eat these most of the time as part of a balanced diet. The Red label indicates that this is an area that is high and whilst it is ok to eat it, you shouldn't eat it all the time

NUTRITIONAL INFORMATION TYPICAL VALUES		
	Per 100g	Per 15g
Energy	1991kJ/475kcal	299kJ/71kcal
Fat	20.0g	3.0g
Of which saturates	1.6g	0.2g
Carbohydrate	63.0g	9.5g
Of which sugars	20.0g	3.0g
Protein	6.8g	1.0g
Salt	0.75g	0.11g

This pack contains 2 servings



Flooding is when land that is usually dry is overtaken by water. There are several different types of flooding. Some flooding is caused by extreme weather. This is often called flash flooding. When there is a sudden increase in the amount of water, the ground can find it hard to absorb it.



Flooding can cause huge damage to land and where people live. That is why flood defences are designed to try and control water in areas where flooding may happen.

Dams—Dams can be built to try and hold back and control water. They are often designed to allow water to pass through them in a controlled way. Hydro power can be created through dams.



### Safe cutting skills

**The Claw Grip**— Hold the item by curling your finger tips onto a claw. Press down and slightly bend fingers so that you cannot see your fingernails.

**The Bridge Hold** — Hold the item with your fingers forming a bridge for the knife to cut underneath.



Diversion canals are channels that are man made to redirect and divert water away from certain areas. Flood planes are large open areas designed to allow water to collect instead of flooding houses and urban areas or damaging farm land.