

Knowledge Organiser for Year 5 – Natural Resources

Big question: How can we preserve natural resources?

National curriculum specification

- To describe and understand key aspects of human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water



Key facts/figures

Electricity	Electricity reaches us through: Power station – pylon – wire – light switch – lightbulb
Power stations	<p>Coal fired (non renewable)</p> <ul style="list-style-type: none"> Coal is brought to the power station, crushed into a powder and burnt in a furnace. Heated water is used to create steam and the steam turns the blades of the turbines. The turbines connect to a generator which creates electricity. The steam is cooled into water in a cooling tower. <p>Combines Cycle Gas Turbine (CCGT) (non renewable)</p> <ul style="list-style-type: none"> Gas is burned in a turbine to heat the air supply. The blades begin to turn. The turbine connects to a generator which creates electricity. The hot gases are used to heat water to create steam and the steam turns the blades of a steam turbine connected to another generator. The steam is cooled back into water in a condenser and used again. <p>Nuclear Power Stations (non renewable)</p> <ul style="list-style-type: none"> Uranium atoms are split into lighter elements in the reactor. This is called nuclear fission and produces lots of heat energy. The heat is used to heat water to create steam and the steam turns the blades of the turbines. The turbines connect to a generator which creates electricity.

	<ul style="list-style-type: none"> • The steam is cooled into water by a condenser and used again. <p>Pumped Storage Power Stations (renewable)</p> <ul style="list-style-type: none"> • Water is stored in a reservoir behind a dam and when the electricity is needed, a pipe called a penstock is opened. • Water flows under great pressure down to a turbine and the water turns the blades of the turbine. • The turbine connects to a generator which creates electricity. • The water is returned to the river and stored in a lower reservoir. • It is pumped back up to the top reservoir at times of low electrical demand (for example, overnight).
Renewable energy	<p>Wind power</p> <ul style="list-style-type: none"> • When the wind blows, the blades turn the main shaft which connects to the gear box. • The gear box increases the speed of rotation to around 1500 rpm (revolutions per minute). • The shaft turns a generator which generates electricity. • The electricity is carried along power lines in the tower. <p>Solar power</p> <ul style="list-style-type: none"> • The Sun shines on solar panels, usually located on the roof of a building or in a field. • Photovoltaic cells (PV cells) inside the panels convert the Sun's energy into electrical energy. • The electricity can either be used or carried along power lines to the National Grid.
Food miles	<p>Benefits of importing food mean we can have a varied diet, supermarkets can negotiate prices so we can buy for cheaper, provides a market for foreign economies, protects us against a poor UK harvest, food is available all year round.</p> <p>However, the further food travels to reach us, the more CO₂ is released into the environment, contributing to climate change.</p>

Key vocabulary (Tier 3)

Climate change	A long term change in weather patterns.
Global warming	A long term rise in temperature of the Earth.
Environment	Everything that makes up our surroundings and affects our ability to live on the Earth.
Pollution	Something introduced to the environment that is dirty, toxic or has a harmful effect.
Renewable energy	Energy made from resources that nature will replace, like wind, water and sunshine. It does not pollute the air or water.
Recycle	The process of turning waste materials into new materials and objects.