

Y8 Environmental Issue: Essential Knowledge Sheet

Environmental issues	Environmental issues are harmful effects of human activity on the environment. e.g. air pollution, climate change and oil spills	
Rubbish / waste	Rubbish is what people throw away because they no longer need it or want it. It includes everything from a crisp packet to a broken toy.	
Problems with waste	Things that we no longer want ends up buried in landfill	
Types of energy:		
	Advantage	Disadvantage
Coal	Reliable, cheap and plentiful	Produces carbon dioxide, contributes to climate change, non-renewable
Oil	Established fuel source, efficient, non-weather dependent	Can lead to oil spills, produces green house gasses, non-renewable
wind	No carbon dioxide emission, plentiful in the UK, renewable	Requires wind, can be noisy
Nuclear	Very reliable, can produce lots of energy,	Expensive, difficult getting rid of waste
Hydro electric power	Sustainable, can be used night or day, renewable	Requires large dams to be built, expensive
Solar	Cheap, no green house gas emissions, renewable	Not suitable everywhere and at night

Recycling	Recycling is the process of converting waste materials into new materials and objects
Landfill	The disposal of waste material by burying it
Incineration	The destruction of waste material by burning it.
Sources of plastic pollution	Litter, plastic fibres in clothing, food packaging, household waste.
Solutions to plastic waste	Recycling, plastic bag tax, coffee cup recycling, compostable plastics, avoid single use plastics
Waste management hierarchy	Ranks waste management options according to what is best for the environment. It gives top priority to preventing waste in the first place e.g. reduce then reuse then recycle
Sustainable	Good for the environment, good for local people and long lasting
Global carbon footprint	The total amount of greenhouse gases produced to directly and indirectly support human activities
Ways of reducing our global footprint	Compost all food waste, solar panels, showers instead of baths, water butts, draft excluders, turning lights off when not using a room, switching devices off at the plug
Food miles	The distance which a food item is transported during the journey from producer to consumer.

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Case study: Food production in Mexico	
Avocado	The tropical evergreen tree that bears the avocado fruit, native to Mexico and grown elsewhere
Advantages of avocado production in Mexico	Disadvantages of avocado production in Mexico
Approximately 30,000 people are employed in Tancitaro producing avocados.	Illegal avocado plantations often cut down ancient pine forests in the area to make room. This led to soil erosion and many habitats being destroyed.
Avocados are worth around £1.2 billion each year to the Mexican economy.	The boom in avocado prices has meant organised criminals have got involved with illegal avocado production
Avocados are called 'green gold' because they earn more profit per acre than any other crop	Large amounts of wood is needed to pack the avocados for transit, this has led to large areas of local pine forest being cut down to provide shipping crates for the avocados.

Climate change	Climate change describes a change in the average conditions – such as temperature and rainfall – in a region over a long period of time.
Fossil fuel combustion	The burning of a natural fossil fuel e.g. coal, gas or oil
Greenhouse gasses	Gasses such as carbon dioxide and methane that contribute to climate change
Causes of climate change:	<ol style="list-style-type: none"> 1. Burning fossil fuels 2. Agriculture (farming) 3. Deforestation 4. Pastoral farming (animals e.g. cows) 5. Arable farming (crops) e.g. paddy fields 6. Melting of permafrost releasing methane
Solutions to climate change:	Move towards electric vehicles, renewable energy e.g. solar, International agreements e.g. The Paris Accord 2015.



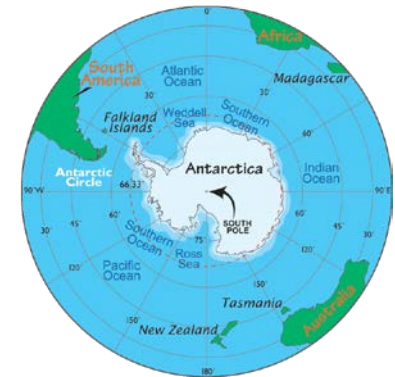
Consequences of climate change

Y8 Fragile Earth – Essential Knowledge Sheet

Fragile Environment	A fragile environment is something that is a delicate and precious part of our world. An environment can be built or natural.
Built Environment	A built environment is an environment that has been created by humans. Parks, buildings, roads, schools and houses are all a part of built environments.

Fragile Environments – Antarctica

Antarctica	<ul style="list-style-type: none"> Is the world's 5th largest continent Located in the southern hemisphere It is a cold desert receiving less than 250mm of precipitation per year. It has no permanent residents.
Antarctic Treaty, 1959	<p>Main points of the Treaty include:</p> <ul style="list-style-type: none"> Freedom of science No military activity (including nuclear testing) No fixed population
Stakeholder	<p>A group or individual who has a vested interest in someone or something.</p> <p>Examples include: environmentalists, scientists, tourism companies, mining companies.</p>
Food Chain	<p>Shows the direct links between producers and consumers in the form of a straight line.</p> <p>Producers receive their energy from photosynthesis.</p> <p>E.g. Phytoplankton (producer) → Krill (consumer) → Fish (c) → Penguin (c) → Leopard seal (c) → Orca whale (c)</p>



Fragile Environments – Africa

Desert (The Sahel)	Tropical rainforest	The Savanna
In this climatic zone there is more evaporation than precipitation. Some parts of this area only receive as little as 0.83mm per year! The temperatures can reach up to 58°C	This climate has 180mm of rainfall every month! The temperature remains consistently warm all year round.	This climate zone has monthly mean temperatures of 18° It has a wet season and a dry season. They tend to have grasslands as opposed to jungle.

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Fragile Environments – The Sahel

Physical / natural features	ANIMALS: The region has abundant wildlife including gazelle, cheetah, African wild dogs, lions & giraffe
	CLIMATE: The climate is typically hot, sunny, dry and somewhat windy all year long. It can reach up to 42°C.
	CLIMATE: The Sahel receives a low and unreliable amount of precipitation annually. The entire Sahel region generally receives between 100 mm and 600 mm of rain yearly. Droughts are frequent.
Human features	Most of the people in the Sahel have been semi-nomads, farming and raising livestock.



Endangered Animals:

<p><u>Reasons for animal endangerment:</u></p> <ul style="list-style-type: none"> • Poaching • Population growth • Demand for ivory • Poverty • Palm oil • Habitat loss 	<p><u>Bonobo Monkey:</u></p> <p>Bonobo monkeys can only be found south of the Congo River in the Democratic Republic of Congo (DRC). They are killed due to the destruction of their habitats. They spend more time in trees than any other monkey species and build their nest there.</p>	<p><u>Elephants:</u></p> <p>Elephants are the largest living land mammal in the world. They usually travel in groups. They are poached for their tusks, meat and skin. They live in the savanna region.</p>
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Fragile Environments – Australia

Location	Essential Knowledge	
The Outback	<p>Climate change and drought are having a significant impact in the region Agriculture is over abstracting water exacerbating the problem</p> <p>Average temperature = 35°C Average PPT= 150mm per year Flora (plants) = Stuart's Desert Pea, Kangaroo Paws Fauna (animals): kangaroo, saltwater crocodile & dingo</p>	
The Daintree Tropical Rainforest	<p>Deforestation for farms and private residences are the main threat. Feral animals and invasive species are putting native species at risk.</p> <p>Average temperature = 26°C Average precipitation = 2,000mm Flora (plants): Many of the plants are poisonous like the idiot fruit Fauna (animals): Estuarine Crocodile and musk rat</p>	
Uluru	<p>Tourism on a large scale, climbing the rock, polluting the local water supplies and erosion are the main environmental problems.</p> <p>Average temperature = 35°C Average precipitation = 308mm annually Flora (plants): There are over 416 species of native plants in Uluru-Kata Tjuta National Park alone. Fauna (animals): Spinifex hopping mouse, wallaby, red kangaroo.</p>	
The Great Barrier Reef	<p>Climate change causing the bleaching of coral, water pollution runoff and overfishing are the main threats here.</p> <p>Average temperature = 24-33°C in summer and 14-26°C in the winter Average precipitation = 2010 mm Flora (plants): seaweeds and grasses Fauna (animals): dolphins, sharks, including 1400 coral reef species</p>	



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Fragile Environments – Australia

Climate	The long-term weather conditions over a period of time. Temperatures and precipitation levels are a large part of this.
Flora –	Vegetation (plants)
Fauna –	Wildlife (animals)
Adaptation –	A change in an plant / animals physical or behavioural characteristics over time in order to survive.

Animals' species in Australia

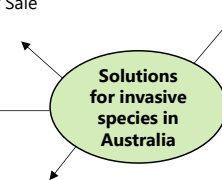
Invasive	Feral	Pests
Species has a tendency to spread their range into new areas or plague their range.	Defined as animals for domestic purposes (i.e. pets, recreational use – such as hunting – or beasts of burden) which have gone wild .	Animals which have a direct effect on human standard of living or the environment/ecosystems in areas where they are present, have a high rate of reproduction and are difficult to control .
Examples of animals		
Cane toad – over 200 million in Northern Queensland alone. Kill native species with their bufotoxin.	Camels – introduced to help farm in the Outback and some escaped.	Rabbits – estimated 200 million living in Australia!

In 2010 the Australian government endorsed a control plan, the Australian Feral **Camel** Management Project.

This either:

- Culled camels and sold them for meat
- Sent them to the Middle East for Sale

Camel farming – using their milk to sell for a profit but it's very expensive.



Crown of Thorns Starfish – eating too much coral and depleting it.

Diver's injecting with white vinegar to kill them.

Boom in numbers due to fertiliser runoff from farms along the coast.

Cane toads are arguably Australia's most well-known invasive species. Estimates put their numbers at 1.6 billion!

Locals are encouraged to join "musters" which go out capture the toads and kill them, other methods are food aversion techniques where larger mammals are trained to avoid eating them.