Knowledge organiser: Y8—Is human consumption of resources sustainable?

KEY VOCABULARY	
Sustainable Actions that meet the needs of the present and those of future generations.	**Agricultural Sprawl** the growth in the area of land used for farming , at the expense of natural environments e.g forests
Exhausted Most of the earth's natural resources are renewable but some are exhaustible, meaning that they will eventually run out.	**Arable Farming** Growing crops using machinery and lots of inputs
Water scarcity where the supply of water does not meet the demand so there are shortages.	**Pastoral Farming** Rearing domestic animals often outside in fields, often require feeding indoors in the winter
Agriculture is the art and science of preparing the soil, growing crops and raising livestock.	**Food Miles** the distance food has travelled from farm to plate
Subsistence farming – When a farmer grows crops only with the purpose of feeding his family and does not sell them	**Fossil fuels** A natural fuel formed over millions of years from the remains of dead animals and plants

What are natural resources and why are they vital to human survival

Our spheres provide us with our natural resources, the biosphere provides food, the lithosphere rocks and minerals, and the hydrosphere provides us with all of our water.

A natural resource, is something that occurs naturally, without any help from us, and which we can make use of. Like soil, water, wind, sunlight, coal and oil.

Natural resources are found everywhere but they are not shared equally. For example, all countries get rain, but some get very little, and others get lots.

Water is important not just to drink but we use it in industry and farming.

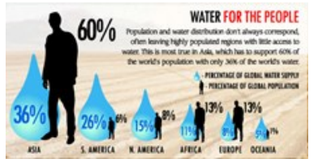
We use rocks not just to build us shelter but for energy too.

Without food humans would not survive, some food we can grow from the ground, other food involves the rearing and raising of animals to be eaten.

How much water do we have access to?

Water is held in stores on the planet and it can be moved between the stores. Water is not evenly distributed around the world.
Water scarcity is when the supply of water doesn't meet the demand. It is caused by:
Population size, poverty, poor infrastructure, lack of rainfall and pollution.

Water scarcity leads to problems such as disease and missed school as children and women have to walk long distances to collect water.



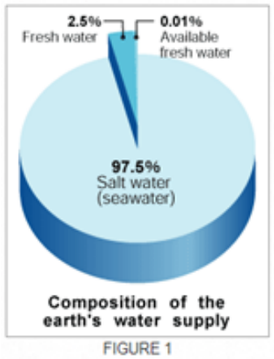


FIGURE 1

How clean is our water?

Increasing amounts of waste and growing use of chemicals in farming have led to higher levels of pollution. In some LICs/NEEs water sources are often used as open sewers or a dumping ground for factory waste. This leads to water borne disease. Our use of water is becoming increasingly unsustainable.

How can we use water more sustainably?

Sustainable approaches to water management focus on the careful management of water resources, reducing waste and also reducing excessive demand.

Water Conservation—this is about reducing waste and unnecessary use.

- Water meters to encourage people to use water wisely
- Preventing water pollution
- Monitoring illegal connections
- Improve public awareness of the importance of saving water
- Water tariffs in places of high demand

Saving water at home

- Collect rain water
- Turn off tap when brushing teeth
- Only wash full loads in washing machine/ dishwasher
- Install low flow shower heads
- Plant drought tolerant plants
- Install a twin flush toilet system to reduce water waste

Water Recycling—this is re-using treated domestic or industrial waste water.

Using Grey water—grey water taken from bathroom sinks, baths, showers . It may contain traces of food, dirt, grease, fat etc, however if used within 24 hrs on a garden it can be a fertiliser for plants.

Grey water is mainly used for irrigation and watering gardens.

Where does our food come from?

There are 4 major types of farming in the UK: pastoral, arable, industrial and organic.

Organic

Growing crops without using fertiliser and pesticides

Commercial Farming – When crop and animal produce is used to earn money and sold in the market for profit.

Industrial farming

Rearing of animals in factory like conditions with little care for animal welfare

Is cattle ranching sustainable?

Cattle ranching in the Chaco, Paraguay

The Chaco is a large, dry forest in South America that stretches across Paraguay, Bolivia and Argentina. It is the second largest forest in the continent (after the Amazon rainforest) and has been home for the Ayoreo, an indigenous (native) tribe that have adapted to live in this forest.

What is happening to the Chaco forest?

- Much of the Chaco is being deforested to make space for cattle ranching. Highest rate of deforestation in the world!
- The Mennonites are a group of Christians who earn a living from cattle ranching.
- This damage to the biosphere has been considerable
- The Ayoreo have struggled to continue to live in the forest. Their culture and way of life is under threat.
- The Mennonites have made a good living from cattle ranching and this has helped Paraguay's economy .
- Paraguay earns a living from the cattle ranching by exporting beef and leather to Europe. 20% of export income comes from beef.
- It remains to be seen what will happen to the remaining forest in the Chaco and whether the Ayoreo will be able to keep their culture alive.

Industrial Fishing

Fish is an important component of a healthy diet. Fish stocks are dwindling fast due to over-fishing on a massive scale; we currently have enough fishing capacity in the world to fish the equivalent of four planet earths! Today, the seas around our coastline are almost completely empty of fish stocks as modern fishing fleets have continued to over fish the seas to the point where there are insufficient fish to continue breeding.

Industrial fishing is the use of large boats and advanced technology to capture large amounts of fish to meet our growing demand for fish.

Bycatch is sometimes known as 'unwanted catch'. It is other species that are unintentionally caught when trying to catch a particular fish species.

Food Miles

All food makes a journey from where it is grown or produced to your plate. How far food has travelled is known as its food miles. We should be aiming for as few miles as possible as each method of transport increases global warming. Choosing foods with fewer food miles helps **reduce pollution** and **protect our planet**.

Regenerative farming

Many farmers, both in the UK and overseas, have started to use 'regenerative farming practices' in order to take better care of their land and the environment. This way of farming avoids disturbing the soil and uses natural predators to remove pests that could destroy crops. This means that no chemicals are used on the land. Although crop yields might not be as high, these farmers are trying to improve the natural environment and lots of crops are usually grown next to each other. This helps to keep more the soil fertile and healthy.

What resources do rocks provide?

Energy sources

Coal, oil and gas a re all extracted from the lithosphere. These are called fossil fuels..

We burn these fuels to generate heat and electricity.

However, when they are burnt they release carbon into the atmosphere which causes global warming.

Building materials & shelter

Road, houses, golf courses, sea defences

Household products

crockery, toothpaste, make up, electrical wiring, cans for food storage.

Example—Hope Quarry, Peak District. 2m tonnes of limestone a year used for cement.

Positive impacts	Negative impacts
Directly employs almost 200 people.	Noise from blasting and lorries could irritate local
Provides cement; a vital resource for building.	Natural habitats might be disturbed or destroyed.
Local businesses provide services to Hope Quarry	Dust from quarrying can affect people's health.

How is Hope Quarry becoming more sustainable?

13000 trees planted since 2003 to make the landscape more natural.

35% of energy used comes from sustainable energy sources, not relying on fossil fuels completely.

Only blast for 100 days a year.

New rail route constructed means 6000 less lorries on the roads.