



Topic: 'Is the geography of Russia a curse or a blessing?'

Lesson 1 - To know the main physical and human features of Russia		Lesson 2 - To know what the climate of Russia is like	
1	>Russia lies on the two continents of Europe and Asia.	6	Continental climate – climate group that experiences extreme seasonal change.
2	>Russia is around 70 times bigger than the UK with a population of 114.5 million.	7	Permafrost – permanently frozen ground, found in polar and tundra regions.
3	>Kaliningrad is an exclave of Russia.	8	Precipitation – water falling from the sky as rain, hail, sleet or snow .
4	Exclave – part of a country that is cut off from the main part (you have to cross another country to reach it).	9	>Russia experiences a continental climate which is characterised by two main seasons: long, dark, cold winters with brief, often warm summers.
5	>Russia has many physical features which include the Ural Mountains, Caucasus Mountains, Rivers Ob, Volga and Don.	10	>The majority of Russia, particularly the east and north are very cold (average of -2°C or below), the west of Russia is warmer (average of between 2° and 10°C).
		11	>Russia's average annual precipitation is 350mm or below.
Lesson 3 - To know what biomes exist in Russia		Lesson 4 - To know where people live in Russia and why	
12	Biome – a large community (large ecosystem) of plants and animals found in a major habitat such as rainforests, tundra.	20	Population distribution – how spread out people are (evenly or unevenly).
13	Vegetation - the general term for the plant life of a region.	21	Population density – the average number of people living in a place per square kilometre.
14	Adaptation - when a plant or animal has to change to suit the environment.	22	Densely populated – lots of people living in an area.
15	>Russia has 5 main biomes which are tundra, taiga, steppe, temperate forest and mountain forest .	23	Sparsely populated – few people living in an area.
16	>The tundra biome is a cold region where the ground is deeply frozen; only the surface thaws in summer, allowing small plants to grow.	24	>The population distribution of Russia is not evenly spread out.
17	>The taiga is coniferous forest (e.g. trees that have needles instead of leaves) with trees such as larch and pine.	25	>Most of Russia is sparsely populated, especially the north and east whereas the European part of Russia in the west is more densely populated.
18	>The temperate forest has a range of deciduous trees such as oak and ash which lose their leaves in winter and coniferous trees.	26	>The European part of Russia is densely populated due to a warmer climate for growing food, flatter land to build and is near the capital of Moscow and other cities for jobs.
19	>Steppe is a large flat area of treeless grassland.	27	>Northern Russia (e.g. Siberia) is sparsely populated due to a colder climate and mountainous landscape making it harder to grow food and build. There are few cities, communications (e.g. roads) and services (e.g. water, hospitals).

Lesson 5 - To understand what life is like in the Arctic		Lesson 6 - To understand the impact the physical geography has on Russia	
28	Hypothermia – the condition of having an abnormally (typically dangerously) low body temperature.	33	Polar Night – where the night time lasts for more than 24 hours that occurs in the places north of the Arctic Circle or south of the Antarctic Circle.
29	Frostbite – an injury to body tissue caused by exposure to extreme cold, typically affecting the nose, fingers or toes.	34	Midnight Sun – occurs in the summer months in places north of the Arctic Circle or south of the Antarctic Circle, when the sun remains visible at the local midnight.
30	<i>>Oymyakon in Russia is the coldest inhabited place on earth with winter temperatures average -56°C to -60°C, but summer temperatures can reach 30°C</i>	35	<i>>Russia's physical geography has many advantages and disadvantages.</i>
31	<i>>Oymyakon has a population of 500 people and they face many challenges due to the extreme cold, e.g. exposed skin can freeze in 5-10 minutes, permafrost makes growing crops and plumbing difficult.</i>	36	<i>>Advantages include Russia having a range of natural resources (e.g. coal, iron ore, copper); Russia is a vast country (including mountain ranges) which can offer protection from invasion; Russia produces 20% of the world's natural gas.</i>
32	<i>>In the winter, daylight only lasts for 3 hours, but in summer months they receive up to 21 hours of daylight.</i>	37	<i>>Disadvantages include the climate – Russia experiences long, dark, cold winters and precipitation is low; Russia has few ocean ports that are free of ice all year round; the East part of Russia is a very volcanic region.</i>
Lesson 7 - To understand why Europe is reliant on gas from Russia		Lesson 8 - To understand why Russia wants to control Crimea	
38	Export – Raw materials, goods and services sold to another country.	44	Gross Domestic Product (GDP) – the total value of the goods and services produced in a country.
39	Economy – the wealth and resources of a country in terms of the goods that are produced and consumed there.	45	<i>>Russia considers anyone who speaks Russian as an 'ethnic Russian' and this puts them under their protection.</i>
40	<i>>Russia is the world's largest exporter of both oil (12.7% of the total) and natural gas (20.4%).</i>	46	<i>>Russia is not developed as well as some of its neighbours which can be partially links to access to water and therefore ports.</i>
41	<i>>These exports of oil and gas account for over 60% of Russia's income.</i>	47	<i>>Russia has 23,000 miles of coastline, but has no significant warm water, ice free ports with direct access to an ocean.</i>
42	<i>>The European Union imports 40.2% of its natural gas from Russia.</i>	48	<i>>Sevastopol is the largest city in Crimea and a major port on the Black Sea.</i>
43	<i>>European countries rely on Russia for their gas supply, for example Belarus and Finland (75% of their gas); Poland and Austria (50-75%); France, Germany and Italy (20-49%) .</i>		
Lesson 9 - To understand the impacts of global warming on Russia			
49	Global warming – increases in the earth's average temperature over time.		
50	<i>>The amount of sea ice in the Arctic has decreased over time.</i>		
51	<i>>There are many disadvantages of the melting sea ice for Russia and for the rest of the world e.g. sea level rise, loss of habitats & biodiversity.</i>		
52	<i>>Melting sea ice could provide advantages for Russia include allowing a longer shipping season along the northern sea route reducing journey times and making potential oil fields in the Arctic more accessible.</i>		
53	<i>>Global warming will lead to thawing of permafrost in Siberia which can provide opportunities for Russia in agriculture but will also mean that large amounts of methane will be released (a greenhouse gas) worsening the effects of global warming.</i>		



Topic: 'Could palm oil lead to the end of the Orangutan?'

Lesson 1 - To Know what Tropical Rainforests are like		Lesson 2 - To Understand why rainforests have such high levels of biodiversity	
1	Biome - a large community (large ecosystem) of plants and animals found in a major habitat such as rainforests, tundra etc.	4	> <i>Tropical rainforest vegetation has distractive layers: tallest emergent trees, canopy, under canopy, shrub layer and then the forest floor.</i>
2	Biodiversity - the variety of plant and animal life in a particular habitat. > <i>Tropical rainforests are the most biodiverse biomes in the world with over 8,000 species of birds.</i>	5	Nutrient cycle - how nutrients travel from soil, to plants and animals then back into the soil through decomposition in a never-ending cycle.
3	> <i>Tropical rainforest biomes are located in the tropics as it is hot and wet.</i>	6	> <i>The climate in a tropical rainforest has an average temperature of 25°C, a small temperature range of 2/3 degrees & high rainfall of over 2,000mm a year.</i>
Lesson 3 - To understand why the Tropical rainforests are important		Lesson 4 - To know why tropical rainforests are under threat	
7	> <i>24% of Indonesia's rainforest is already gone. This is the home of Orangutans.</i>	11	Palm oil - edible vegetable oil made from the fruit of oil palms. The oil is used in food, beauty products and as biofuel.
8	Deforestation - The chopping down and removal of trees to clear an area of forest for logging, farming, mining and settlements.	12	> <i>Orangutans only live in Indonesia on the islands of Sumatra and Borneo.</i>
9	> <i>Tropical rainforests are important as indigenous people live there, trees absorb CO₂ and regulate the world's climate, provide habitats for animals, 25% of medicines come from them and natural resources such as wood, rubber and fruits are found there.</i>	13	> <i>The demand for palm oil has increased rapidly from 1 million metric tonnes in 1900 to 75 million metric tonnes now.</i>
10	> <i>The orangutan population in the world has decreased rapidly from over 300,000 in 1900 to an estimated 100,000 now.</i>	14	> <i>Orangutan numbers have declined rapidly because the tropical rainforests which are their habitat is being cleared for palm oil plantations, small holder agriculture, cattle pasture and logging.</i>
		15	> <i>45% of deforestation is actually from smallholder agriculture.</i>
Lesson 5 - To know the causes of deforestation in Borneo		Lesson 6 - To understand why rainforests are important to the people of Indonesia	
16	Carbon Sequestration - Process of removing carbon dioxide from the atmosphere and storing it.	22	> <i>Indonesia is in SE Asia and the capital is Jakarta on the island of Sumatra.</i>
17	Slash and burn - Existing forest is cut down and burned off to clear land for farming.	23	> <i>Indonesia burns tropical rainforests and the peat underneath releasing CO₂ into the atmosphere which causes global warming.</i>
18	FSC (Forest Stewardship Council) - international certification to promote the responsible and sustainable management of forests.	24	> <i>The climate of the world is set to get hotter by an average of 2°C.</i>
19	Logging - cutting down trees for timber (wood to sell).	25	> <i>The Indonesian Government took over the land and 72% of it was licensed to companies to remove the forest and replace it with palm oil plantations.</i>
20	Small-holder agriculture - Farmers cut down areas of forest for crops when the soil on their existing land becomes degraded.	26	> <i>20% of CO₂ in the world's atmosphere comes from deforestation.</i>
21	Large scale agriculture - A major cause of deforestation is agriculture plantations. An increasing supply-demand for products such as palm oil and soya beans are driving producers to clear forests.		

Lesson 7 - To understand how palm oil affects me		Lesson 8 - To know how Indonesia benefits from palm oil	
27	>Palm oil is in 50% of our products including cosmetics such as shampoo, make up and soap, food such as chocolate, biscuits and crisps and washing liquids.	30	Quality of Life - the standard of factors such as health, education, economic security, safety, comfort, and happiness experienced in a country.
28	Roundtable Sustainable Palm Oil certification - ensures that palm oil is produced sustainably.	31	Economic Development - process by which the economy, health and education of a country improves over time.
29	Sustainability - when materials and resources are used in a way that will balance the needs to the present without compromising the ability of future generations to meet their own needs.	32	HIC (High Income Country) - A country with a high level of economic development.
		33	NEE (Newly Emerging Economy) - A country with growing industry that is quickly moving from LIC to HIC.
		34	LIC (Low Income Country) - A country with a low level of economic development.
		35	Stakeholder - A person or group of people that have an interest in and/or will be affected by something.
		36	>The life expectancy in Indonesia is 69 compared to The UK at 82.
		37	>Indonesia is a NEE and needs to export palm oil to develop their economy and provide people with a better quality of life.
		38	>However, palm oil plantations threaten indigenous peoples' traditional way of life and contribute to global warming and climate change.
Lesson 9 - To know How we can help save the orangutan		Lesson 10 - To know how to make an Informed decision about banning palm oil	
39	>International Animal Rescue has 6 rescue centres in Borneo saving over 100 Orangutans.	44	Reasons for banning palm oil include: endangering Orangutans and other species; loss of biodiversity; destruction of forest which leads to global warming and climate change.
40	>There are 9 National Parks in Borneo that are protected forests where Orangutans can be relocated.	45	Reasons for continuing to produce palm oil include: provides an income for local people; income for the Government to then spend on health, education, transport for the people; sustainable production is possible – although currently only 10% of companies use sustainable palm oil.
41	>The rate of deforestation in Borneo increased in the 1960s due to mechanisation – the introduction of machines such as chain saws to chop down trees.		
42	>In the 1990s the new Government of Indonesia gave out lots of licenses to businesses to clear forests.		
43	>In 2015 alone, over 100,00 forest fires were used to clear the forests.		



Topic: 'Should we continue to use natural resources?'

Lesson 1 - To know the different kinds of natural resources		Lesson 2 - To know how rocks form	
1	Natural Resources - Things found in the natural environment, like minerals or plants, that humans make use of to improve their standard of living.	4	Igneous Rock – rocks formed by cooling magma/lava, e.g. basalt or granite.
2	Non-renewable Resources - Resources which are limited and so will run out one day or cannot be replaced during our lifetime, such as natural gas, coal.	5	Metamorphic Rock – rocks formed through heat and pressure, e.g. marble or slate.
3	Renewable Resources - Resources that can be replaced over time and will not run out, such as water and wind.	6	Sedimentary Rock – Solid material that is moved and deposited, e.g. sand and gravel.
		7	<i>>Any type of rock can become metamorphic rock.</i>
Lesson 3 - To know how soil benefits people		Lesson 4 - To understand how people use water	
8	Soil – the upper layer of earth, where plants grow.	11	<i>>97% of all water on Earth is found in oceans with the remaining 3% freshwater</i>
9	<i>>Soil provides minerals and water plants need to grow, without soil crops cannot be grown.</i>	12	Aquifer - a natural underground rock structure, which holds groundwater.
10	<i>>Soil is not a renewable resource as the earth has only a limited amount of land that is suitable for crops.</i>	13	<i>>Ogallala is one of the world's largest aquifers, located in the USA.</i>
		14	<i>>Rainfall is unreliable here and drought occurs regularly.</i>
		15	<i>>Most of the water in Ogallala is at least 8000 years old, with thousands of litres of water pumped out of it each day to support farming, resulting in the water level dropping by 30 metres.</i>
Lesson 5 - To know the benefits and challenges of oil use		Lesson 6 - To know what resources are used to generate electricity	
16	Crude Oil – the term used to describe the oil extracted from the ground.	21	Solar power – the conversion of the sun's energy into electricity.
17	Fossil Fuel - a natural fuel, such as coal, oil and gas, formed in the geological past from the remains of living organisms.	22	Nuclear power – the energy released by a nuclear reaction, especially by fission of fusion.
18	<i>>Oil is an important part of everyday life e.g. to fuel cars, produce plastics, even clothes.</i>	23	Geothermal energy – energy generated by heat stored deep in the Earth.
19	<i>>The USA consumes 3 times more oil than the UK.</i>	24	Wind power – electrical energy produced from the power of the wind using wind turbines.
20	<i>>Oil is a non-renewable energy source which can cause air and water pollution and contributes to global warming.</i>	25	Tidal energy – electricity generated from the tidal movement of the sea.
		26	Hydroelectric power – electricity generated by turbines that are driven by moving water (usually in a dam).
		27	Biomass – burns plants, trees and organic matter to heat steam to drive turbines.

Lesson 7 - To know the difference between the greenhouse effect and the enhanced greenhouse effect		Lesson 8 - To know the global impacts of climate change	
28	Climate Change - a long-term change in the Earth's climate.	35	Extreme weather – when a weather event is significantly different from the average or usual weather pattern and is especially severe or unseasonal.
29	Global Warming – Increases in the Earth's average temperature over time.	36	>There are a variety of negative impacts of climate change, e.g. less sea ice in Polar regions will result in a loss of plants and animals (such as Polar Bears).
30	Greenhouse Effect – How the atmosphere traps in heat and keeps the earth warm.	37	>There are a variety of positive impacts of climate change, e.g. increased rain and warmer temperatures are likely to improve crop yields.
31	>If the greenhouse effect didn't exist, the average temperature on Earth would be around -18°.		
32	Enhanced Greenhouse Effect – the warming of the Earth's atmosphere due to human activity increasing the proportion of greenhouse gases.		
33	>Carbon dioxide, methane and nitrous oxide are greenhouse gases.		
34	>Sources of greenhouse gases include deforestation, vehicles and power stations.		
Lesson 9 - To know the impacts of climate change on the UK		Lesson 10 - To know how climate change can be managed	
38	Climate refugee – a person who has been forced to leave their home as a result of the effects of climate change on their environment.	42	Mitigation – action taken to reduce the long-term risk from natural hazards such as international agreements to reduce greenhouse gas emissions.
39	>7 of the top 10 hottest days on record in the UK have occurred since the year 2000.	43	Adaptation – actions taken to change to natural events such as climate change, to reduce the impacts.
40	>Climate change will have many negative impacts on the UK, e.g. increased frequency of heatwaves, storm events and flooding.	44	>The Paris Agreement is a legally binding international treaty on climate change adopted by 196 parties at COP 21 in Paris in December 2015.
41	>Climate change can provide some opportunities for the UK, e.g. growing a wider variety of crops, increase in tourism.	45	>The aim of the Paris Agreement is to limit global warming to well below 2°C.
Lesson 11 - To know what we can do about climate change			
46	Carbon footprint – a measurement of the greenhouse gases we individually produce.		
47	Conservation – managing the environment in order to preserve, protect or restore it.		
48	>There are many ways we can reduce our carbon footprint, e.g. use less plastic, recycle & reuse, turn lights off when you leave a room, use energy efficient products.		



Topic: 'Is Iceland the best place to live in the world?'

Lesson 1 - To know how to map the tectonic features of Iceland		Lesson 2 - To know the demographics of Iceland	
1	Grid References – numbers on grid lines to locate places (4 and 6 figure grid references).	5	Demography – the study of statistics such as births, deaths, income, which illustrate the changing structure of a population.
2	Tectonic features – features caused by the movement of tectonic plates.	6	Population distribution – how spread out people are.
3	>Iceland is tectonic because it lies on the Mid-Atlantic Ridge where the North American Plate is moving away from the Eurasian plate.	7	>The majority of Iceland is sparsely populated, 60% of the Icelandic population live in Reykjavik in the south west.
4	>Iceland has many tectonic features which include volcanoes (e.g. Katla and Hekla); geysers (e.g. Strokkur); geothermal pools (e.g. the Blue Lagoon); Thingvellir National Park.	8	Population pyramids – diagrams, essentially bar graphs that show the structure of a population by sex and age category.
		9	Birth rate – the number of births in a year per 1000 of the total population.
		10	Death rate – the number of deaths in a year per 1000 of the total population.
		11	Life expectancy – average number of years a person might be expected to live.
		12	> Iceland has a decreasing birth rate and low death rate with a high life expectancy (of 82 years).
Lesson 3 - To know what it is like to live in Iceland		Lesson 4 - To know the benefits of living in Iceland	
13	Climate graph – a graph showing the average temperature and rainfall for each month of the year for a specific location.	17	Tourism – the business of providing services such as transport, places to stay or entertainment for people who are on holiday.
14	Midnight sun – occurs in the summer months in places north of the Arctic Circle of south of the Antarctic Circle, when the sun remains visible at the local midnight.	18	Geothermal energy – heat from underground is used to make electricity.
15	Polar nights – where night time lasts for more than 24 hours occurring in places north of the Arctic Circle of south of the Antarctic Circle.	19	Economy – the wealth and resources of a country in terms of the goods that are produced and consumed there.
16	>Iceland has cold winters and mild summers with an average of 800 mm of precipitation each year.	20	Sustainability – when materials and resources are used in a way that will balance the needs of the present without compromising the future.
		21	>Iceland benefits from being located on a plate boundary for example fertile soils, tourism and geothermal energy.

Lesson 5 - To understand the benefits of geothermal energy		Lesson 6 - To know Why people visit Iceland	
22	Lido – a public open-air swimming pool.	26	Tourism boom – situation in which a nation becomes particularly attractive to visitors from other countries.
23	>The Jubilee Pool in Penzance, Cornwall is the first lido in the UK to be geothermally heated.	27	>Tourism is rapidly increasing in Iceland, in 2016 the number of visitors increased by 40% up to 7 million people.
24	>Geothermal energy is a renewable source of power and heat that runs 24 hours a day, whatever the weather with very little visual or surface impact.	28	>Tourism accounts for 10% of Iceland’s economy.
25	>Geothermal energy provides 27% of Iceland’s electricity and could supply the UK with 20% of its electricity needs.	29	>Activities in Iceland for tourists include whale watching, mountain biking, bird watching, range of water sports and diving.
		30	>Popular tourists attractions include the Golden Circle route (including Thingvellir, Strokkur and Gullfoss waterfall), the Blue Lagoon, Skógafoss, Solheimajökull glacier and Vik (a black sand beach).
Lesson 7 - To understand whether Tourism will ruin Iceland		Lesson 8 - To know what happened in Iceland in 2010	
31	Stakeholders – a person or group of people that have an interest in and/or will be affected by something.	34	>The first eruption of Eyjafjallajökull happened on 20 th March 2010 and the second eruption happened on 14 th April 2010.
32	>There are many benefits of tourism e.g. provides 31,500 jobs and contributes to Iceland’s economy which increases investment in infrastructure and services.	35	>The fine ash particles from the eruption rose into the atmosphere around 27,000 feet which is about the same height as airplanes fly.
33	>However, tourism can cause problems e.g. damage to rare mosses due to hiking tourists leads to destabilisation of volcanic soils, development of shops and hotels has rapidly increased which could ruin the natural beauty of Iceland.	36	>Flights were banned across Europe within 4 days of the eruption because ash can cause engine failure.
		37	Flight bans led to thousands of tourists being stranded, medical supplies couldn’t be flown to where they were needed and it cost British airports £10 million a day.
Lesson 9 - To understand whether the Eyjafjallajökull eruption was a local or international disaster		Lesson 10 - To know what happened during the Fagradalsfjall eruption	
38	Subglacial volcano – a volcano that is located either underneath a glacier itself or under the water in a lake which is inside a glacier.	42	Constructive plate margin – two plates are moving apart (diverging) where rising magma adds new material to the plate margin.
39	Flash flood – a sudden flood, when intense rain falls in a short period of time.	43	>Iceland recorded more than 50,000 earthquakes in the 3 weeks before the eruption several exceeding magnitude 5.0.
40	>Local impacts in Iceland included glacial ice melting causing flash flooding and heavy ash fall damaged agricultural land .	44	>The eruption occurred on Friday 19 th March, 2021, about 20 miles southwest of Reykjavik.
41	>International impacts included over 95,000 cancelled flights, perishable goods (e.g. flowers and vegetables) could not be exported and so were wasted and it cost the airline industry an estimated £130 million.	45	>The eruption was small and in an uninhabited area so didn’t cause many problems for Iceland.
		46	>The main hazard is the potential danger of sulphur dioxide gas, the eruption also spewed more than 10 million square feet of lava.

Lesson 11 - To understand How effective Iceland are at managing tectonic hazards

- 47 **Mitigation** – action taken to reduce the long-term risk from natural hazards, such as earthquake proof buildings.
- 48 **Prediction** – using historical evidence and monitoring to make accurate predictions about when a hazard might happen.
- 49 **Evacuation** – moving people from a dangerous place to somewhere safe.
- 50 *>It is impossible to predict the exact time and date of a volcanic eruption or an earthquake, however you are able, due to monitoring, to indicate that a volcanic eruption is imminent.*
- 51 *>Icelandic volcanoes are closely monitored with the use of modern technology to detect any changes in the volcano e.g. satellites monitor the shape of the volcano, sensors measure gas levels and seismometers detect earthquakes.*
- 52 *>Hazard maps are created to show areas mostly likely to be affected by the range of hazards posed by a volcanic eruption.*
- 53 *>People living in Iceland are educated in how to respond and emergency services are trained to in how to respond specifically to these hazards.*
- 54 *>Evacuation procedures are in place and a text message system informs people to evacuate an area when necessary.*