

Co-op Academy North Manchester - Year 9 Geography Curriculum

Y9	HT1	HT2	HT3	HT4	HT5	HT6
Topic(s)	Ecosystems	Ecosystems & Superpowers	Superpowers & The Coastal Zone	The Coastal Zone & Geographical Enquiry	Geographical Enquiry & Urbanisation	Urbanisation & Ecosystem study
Substantive Knowledge (Know That...)	<ul style="list-style-type: none"> ecosystems are made of living and non-living features. Living features are: plants, animals, bacteria, fungi. Non-living features are: water, soil, rocks, sunlight, temperature, air, wind features of an ecosystem are interdependent, which is when all living and non-living features of an ecosystem are connected and depend on a balance between each other. The living features of an ecosystem are arranged into a food chain which shows what eats what and the direction that energy transfers across an ecosystem. In a food chain, you can further divide the consumers into primary, secondary or tertiary consumers. This is depending on how high up the food chain they are. sun's energy is most concentrated on the equator, making it warmer. sun's energy is spread out at the poles, making it 	<ul style="list-style-type: none"> Globalisation is the process by which the world is becoming increasingly interconnected as a result of massively increased trade and cultural exchange. Globalisation has increased the production of goods and services. Shipping containers were introduced worldwide in 1966. Shipping containers were more efficient. NEE's are countries that are rapidly developing, have improving living standards, increasing wages, improving healthcare, improving access to education, large coastlines, a large land mass, a large young population, many TNC's based in the country, significant amounts of raw materials and are more stable than in the past. China's GDP per capita has increased by over 6000% in 35 years 	<ul style="list-style-type: none"> Swash – Movement of a wave up the beach. The direction is dependent upon the wind direction. Backwash – Movement of a wave back down the beach, this happens at 90 degrees. Constructive waves – Have a strong swash and weak backwash; they cause deposition. Destructive waves – Have a weak swash and strong backwash; they cause erosion. Hydraulic action is when waves compress pockets of air in cracks in a cliff, causing the crack to widen, breaking off rock. Abrasion is when eroded material is hurled or scrapes against the cliff, breaking off rock. Attrition is when eroded material in the sea, hit into each other breaking down into smaller pieces. Solution is when the load is dissolved e.g. chalk, dissolve in 	<ul style="list-style-type: none"> In the UK every person uses approx. 150 litres of water a day, if you take into account the water needed to produce the food and products you consume you actually use 3400 litres a day. Water stress is when the demand for water exceeds the available amount during a particular time period. Water stress can cause too much water to be removed from underground sources of water and rivers, damaging the environment. Water companies have 25-year water resource plans, water companies plan their water supply using methods agreed with the Environment Agency. It is expected that total water demand in south-east England will rise from about 4900 million litres/day in 2005 to 5600 million litres/day in 2030. A new era of building 	<ul style="list-style-type: none"> The unit population density is measured in. Square km The term applied when there are many people in a given area that is densely populated and a few people are sparsely populated. Suburbanisation (people moving to the edges of cities) has been happening for many years in the UK, with many factors influencing this process. In the past 50 years the old manufacturing industries located close to the inner city areas have closed down (known as de-industrialisation). Many people have moved overseas in search of a cheaper workforce, others have moved to the rural-urban fringe, where congestion is less and new modern buildings can be built; land is also cheaper away from the centre of the city. 	

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	<p>colder.</p> <ul style="list-style-type: none"> the world's biomes are distributed according to line of latitude. ecosystems with low levels of precipitation is caused by high pressure. ecosystems with high levels of precipitation is caused by low pressure. Low pressure is when lighter warm air rises, creating wetter unpredictable weather. High pressure is when denser warm air falls, creating sunnier, drier stable weather. As a result along the equator the warm air rises carrying water vapour into the atmosphere. This creates low pressure. The warm air cools and condenses forming clouds. Eventually the water falls back to the earth on the equator as rain. The warm temperature and rain is perfect conditions for plants and animals to live in, and so the widest variety live here. As the air cools as it is high in the atmosphere it moves away from the Equator towards tropical grasslands and to hot deserts, creating high pressure and drier 	<ul style="list-style-type: none"> China's population has increased by 36% in 35 years. There is a range of landscapes and environments in China. Temperatures and precipitation vary greatly across China. China is bordered by 14 countries. The Yellow & Yangtze Rivers play a major role in moving goods and commodities from production sources to manufacturing. China is bordered by 14 countries. China has a long coastline for trade and access to resources China has a large pool of workers to contribute to economic growth. China is able to exert power over its neighbouring countries. Manufacturing has been an important factor in developing China's economy. China has low wages. Low wages can increase the amount of profit TNC's make. China is home to 5 of the top 10 largest container ports in the world. The Chinese government tightly 	<p>seawater.</p> <ul style="list-style-type: none"> discordant coastlines have alternating layers of hard (e.g. granite) and soft rock (e.g. clay). Destructive waves cause the process of erosion e.g. hydraulic action. Soft rock is less resistant so erodes quickly. Hard rock is more resistant, so erodes very slowly. Soft rock retreats and a bay is formed. Hard rock remains and a headland is formed. Beaches form in the bay due to deposition by constructive waves. This is because the headlands break up the energy of the waves. Deposition is when material is dropped or left behind. Longshore drift is the movement of sediments along a coast by waves that approach at an angle to the shore but then the swash recedes directly away from it. Material is carried along the shore in a zigzag fashion by waves. The prevailing wind (direction of the wind) drags the swash and 	<p>pipes and canals to divert water from rivers and underground sources across Britain is being proposed.</p> <ul style="list-style-type: none"> To alleviate the shortage Thames Water was to build a large reservoir at Abingdon, in Oxfordshire. Pressures include: population increase, increase in households, increase in domestic consumption per person, climate change. Pressure can be offset by: low-volume cisterns Water efficient dishwashers and washing machines Water-efficient housing from design requirements of building regulations. Thames water believes that the Abingdon reservoir is needed to ensure future water supplies are sustainable. Farmoor reservoir was built in 1967 and is owned by Thames water. It is a wetland habitat and nature reserve, has a 6km walkway, fishing/sailing and windsurfing centre. Experts are looking into water transfer schemes 	<ul style="list-style-type: none"> People that lived in the inner city areas, have often moved to the suburbs to stay close to the jobs which have relocated to the edge of the city. The quality of life in inner city areas is also viewed by many as not being as good as the life which can be seen in the suburbs. Some people now think of inner cities as areas with air pollution from congestion, noise pollution from passing traffic and nightlife, limited green space for relaxing or leisure, small terraced housing which lack garden space and garages. Crime rates in these areas can be high and this can lead to people feeling unsafe. This leads to urban dereliction in inner city areas. Immigrant communities have been attracted to low-cost inner city and close proximity to jobs in the CBD (central business district). Many inner-city areas have fallen into decline because of deindustrialisation and 	
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	<p>conditions.</p> <ul style="list-style-type: none"> winds and areas of high and low pressure create atmospheric cells, based on convection – these are called the Hadley Cell, the Ferrell Cell and the Polar Cell. Climate is the average weather conditions over a period of about 30 years and is based on precipitation and temperature. Rainforests are wet and hot. deforestation is the chopping down and removal of trees to clear an area of forest. Desertification is the process by which fertile land becomes desert. Trees store water and the high temperatures cause evapotranspiration. As the warm vapour rises it forms rain clouds leading to more rain. Deforestation therefore stops this cycle and can turn rainforests into deserts - desertification. Resources such as logging or agriculture are the main cause of deforestation, with about 90% of the rainforest being cleared for farming. A desert is an area that receives less than 250mm of precipitation (water 	<p>controls the economy.</p> <ul style="list-style-type: none"> China holds around 12% of the world's natural resources. Since 1990 over 400 million people living in China have been taken out of poverty. GDP per capita has increased in China. Life expectancy has increased in China. Access to safe water has increased in China. The literacy rate in China has increased The communist government in Laos maintains a monopoly of political power. The government is backed by China and Vietnam. Laos is one of the poorest countries in the world. Laos relies heavily on aid. Laos has few industries. China intends (has) built a railway through Laos. China got Laos to pay for the cost of the railway. Laos took out loans with Chinese banks. China exerts soft power on Laos. China is expanding its presence in the South China Sea. China has constructed 	<p>sediment up the beach at an angle, whereas the backwash transports sediment back towards the sea at 90 degrees to the sea via gravity.</p> <ul style="list-style-type: none"> Over time sand moves across the beach in the direction of longshore drift. Hard engineering absorbs the energy of waves, preventing erosion and flooding. They stop or disrupt natural processes. Soft engineering works with nature to protect the coast rather than trying to stop natural processes. Groynes are wooden posts which run out to sea (can be concrete), they stop the process of longshore drift. This creates a wider beach where the groynes are installed. The beach absorbs the waves' energy, protecting the settlements behind. Sea walls are made of concrete. They often have a curved top to reflect the destructive waves back out to sea. This protects the soft rock from erosion. Gabions are steel wire-mesh cages, filled 	<p>to transport water from areas of surplus to areas of deficit, this could impact the landscape, wildlife and economy.</p> <ul style="list-style-type: none"> Lower rainfall, increased consumer consumption, housing and industrial growth, and leakage are all contributing to a growing problem of water stress in the Thames Water region. The Thames basin receives an average rainfall of 737mm/year, two thirds is lost to evapotranspiration and 55% of the remainder is abstracted for use. Group Against Reservoir Development (GARD) say reservoirs destroy natural habitats, are visually intrusive, increase flood risk and impact local people. There are many differing views about whether projects such as the Abingdon reservoir should be completed. Trend, Evidence, Anomaly (TEA) can be used to describe most geographical data. Graphs are analysed by looking if there are any 	<p>lack of investment.</p> <ul style="list-style-type: none"> Suburbanisation has caused the rural-urban fringe (greenfield land) to be put under pressure. Many UK CBD's have been redeveloped to encourage tourism and finance. Urban Planners have recognised the need for urban greening e.g. Stratford, London. Many UK inner city areas have been redeveloped, with entertainment, shops and restaurants. Many UK cities have invested in new public transport schemes such as bus lanes, trams e.g. Sheffield Supertram. As Manchester has grown, it has sprawled outwards, merging with surrounding urban areas to create the 'Greater Manchester Conurbation'. This has impacted the rural-urban fringe in the area. On the rural- urban fringe there is plenty of available land; this means the company can expand in the future, meaning they can increase profit. 	
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	<p>falling from the sky) per year. This means that they are dry, with little water available for plants and animals. The dryness is the main feature that controls life in the deserts, creating challenges. There are however, also some opportunities for life.</p> <ul style="list-style-type: none"> • Interdependence is when different parts of the ecosystem depend on each other for their survival • Desertification is the process where areas of desert are spreading due to the loss of vegetation such as poor management of resources or climate change. • An ecosystem is all the living (biotic) and non-living (abiotic) features of an area and how they are connected. • Living (biotic) features are living parts of the ecosystem whereas non-living (abiotic) features are non-living features like soil, rivers and the climate. • Plants in the desert have small or no leaves to stop water from evaporating from them. • Plants in the desert often store water in their stems and leaves as there is not 	<p>artificial islands in the South China Sea.</p> <ul style="list-style-type: none"> • The Paracel and Spratly Islands are likely to contain large natural resource reserves • Major shipping routes pass through the South China Sea. • Major fishing grounds are in the South China Sea. • 1.6 billion people live in the areas bordered by the South China Sea. • China has placed military reinforcements on artificial islands. • China is exerting military power in the South China Sea. • China is attempting to gain access to further resources to increase its power. • Trend, Evidence, Anomaly (TEA) can be used to describe most geographical data. • Graphs are analysed by looking if there are any trends, sudden rises or falls, repeating patterns, or places where lines cross each other. Use Trend, evidence, anomaly (TEA). Calculate the range or give data to support your answer. 	<p>with pebbles or rocks. They are usually placed at the back of a sandy - not shingle - beach. They absorb wave energy, reducing erosion. They can also be placed in front of a cliff to reduce landslides.</p> <ul style="list-style-type: none"> • Beach nourishment is when sand and shingle from elsewhere are added to the beach. Therefore, increasing its width, resulting in the absorption of the destructive waves, causing the waves to lose energy and protecting the coastline behind. • Rip rap is large boulders placed at the foot of a cliff. They break the waves and absorb their energy. • Managed retreat asks engineers to do nothing, and the coast is left to erode and flood naturally. Homes and buildings are destroyed as they near the coastal edge. This will allow the coastline to retreat to a point of natural equilibrium • Happisburgh is located on the North Norfolk coastline. • Happisburgh is a small 	<p>trends, sudden rises or falls, repeating patterns, or places where lines cross each other. Use Trend, evidence, anomaly (TEA). Calculate the range or give data to support your answer. Distribution refers to the way something is spread out or arranged over an area. It may be even, uneven, clustered, linear. It is useful to use compass direction and place names to locate places to track events on a map.</p>	<ul style="list-style-type: none"> • The rural-urban fringe has less congestion, this means that the transportation of goods will be quicker, resulting in increased profits. • On the rural- urban fringe land is cheap, this means that the company can make more profits setting up in the area, meaning more taxes for the local council. • The rural-urban fringe has good transport connections e.g. fast A roads. This means importing and exporting is easier, meaning more profit. • Developments on the rural urban-fringe (greenfield sites) mean countryside land lost, disrupting habitats • Large buildings may cause visual pollution for the villagers nearby this means the value of their homes decreases. • More traffic congestion in the rural area due to the workers and deliveries, this means more air and noise pollution. • Lost farmland means farmers lose profits and could eventually go out of business. 	
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	<p>much rain. These plants are called succulents.</p> <ul style="list-style-type: none"> • Some plants in the desert have deep roots to try and suck the water up from deep underground, whilst others have shallow roots to collect rainwater as quickly as possible. • Plants not only struggle to store water, but they also must defend themselves against animals using spines. • there is a pattern to global distribution of biomes. • The top layer is called the emergent layer (30-75m) has the tallest trees in the rainforest • The canopy layer (15m-30m) is the next layer down and has the densest vegetation (thickest layer of the forest) where 80% of the life is contained. • The understory shrub layer (5m-15m) is shorter, with young trees and shrubs and bushes, with bare tree trunks. Lianas grow up the trees and steal the nutrients. • The forest floor (0m- 5m) is dark, wet and humid (with few nutrients). Wide buttress roots to support heavy trees. • Biomass is the mass (weight) of all the living 		<p>village with a population of approx. 1400 people.</p> <ul style="list-style-type: none"> • The cliffs at Happisburgh are made up of different types of soft glacial till. • In 1996 storm damage resulted in the loss of a further 400 metres of revetment and the end of Beach Road (a main road in Happisburgh). • During the last 20 years, 34 homes have crumbled into the water in Happisburgh because of coastal erosion. • Managed retreat asks engineers to do nothing, and the coast is left to erode and flood naturally. Homes and buildings are destroyed as they near the coastal edge. This will allow the coastline to retreat to a point of natural equilibrium. • Groynes are wooden posts which run out to sea (can be concrete), they stop the process of longshore drift. This creates a wider beach where the groynes are installed. The beach absorbs the waves' energy, protecting the settlements behind. • Sea walls are made of 		<ul style="list-style-type: none"> • Eastlands was once a coal mining area. • A 'compulsory purchase order' is where the local council buys up housing and industry, then moves what was there to another location. This happened at Eastlands. • After the Commonwealth Games stadium (not the Etihad) was built other developments started to happen such as a leisure centre. This is known as the positive multiplier. • Beswick Market and precinct have been turned into East Manchester Leisure Centre, East Manchester Academy and a pedestrianised area. • The entire development happened on brownfield land (site previously built on) in a deprived and run down, inner city area. • South facing windows reduce the amount of energy needed for heating and light. • Recycling schemes reduce landfill and the need for resource 	
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	<p>things in an ecosystem.</p> <ul style="list-style-type: none"> • Litter is a layer on the forest floor made up of leaves and other dead organic matter. • Nutrients move from living things to litter and the soil in a continuous cycle, keeping both plants and soil healthy. This is called the nutrient cycle. • The nutrient cycle in the rainforest is made up of 6 stages. 1 - Trees shed leaves all year round, 2 - leaves and litter fall to the forest floor, 3 - due to high humidity decomposers such as fungi grow rapidly, 4. decomposers break the litter down into nutrients, which enter the soil, 5 - the wide buttress roots take the nutrients up, 6 - this leads to plants growing rapidly. The cycle is continuous. • To take a temperature range. Finding the highest and lowest temperature and taking them away from each other. • to complete a climate graph, using the temperature data to complete the red line graph using the temperature axis. • To complete a climate 		<p>concrete. They often have a curved top to reflect the destructive waves back out to sea. This protects the soft rock from erosion.</p> <ul style="list-style-type: none"> • Images are interpreted by splitting the image into background, middle ground and foreground so that features can be easily recognised and identified. • Distribution refers to the way something is spread out or arranged over an area. It may be even, uneven, clustered, linear. It may be useful to use compass direction, scale and place names. 		<p>exploitation.</p> <ul style="list-style-type: none"> • Public transport, car sharing, electric cars and cycle schemes reduce carbon dioxide. • Parks, gardens, medical facilities and communal areas improve the natural environment and social well-being. • Working and living locally reduces your carbon footprint. • Smart metres reduce energy consumption. • Wind turbines and solar panels are renewable technologies and reduce carbon emissions. • Images are interpreted by splitting the image into background, middle ground and foreground so that features can be easily recognised and identified. • Trend, Evidence, Anomaly (TEA) can be used to describe most geographical data. • Graphs are analysed by looking if there are any trends, sudden rises or falls, repeating patterns, or places where lines cross each other. Use Trend, evidence, anomaly 	
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	<p>graph, using the precipitation data to complete the blue bar graph using the precipitation axis.</p> <ul style="list-style-type: none">• To use climate graph interpretation to identify what types of plants or animals might you find here based on the climate.• How climate graphs link to the sun's concentration and air pressure.• To interpret maps to describe the change, successfully finding a pattern first, then identifying evidence through data, and then finding an anomaly. Using I do, We do, You do modelling.• The enquiry process follows the format of: hypothesis or key question, theory, methodology, data collection, data presentation, data analysis and evaluation.• An anemometer measures wind speed.• Climates can vary on a micro-scale. Climates around the school grounds might vary.• Biased sampling methods exaggerate results leading to less reliable data and less valid conclusions.				<p>(TEA). Calculate the range or give data to support your answer.</p>	
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	<ul style="list-style-type: none"> • Systematic data collection removes the bias making data more reliable and conclusion more valid. 					
Disciplinary Knowledge (Know How...)	<ul style="list-style-type: none"> • ecosystems have changes to energy transferred in a food chain. • living and non-living features depend on each other. • the line of latitude effects the temperature due to the sun's energy being most concentrated on the equator • rainforests are hot and wet, ideal for plants and animals. • The opportunities of tropical rainforests can cause challenges. • the nutrient cycle in the rainforest works. • Deforestation has an impact on the nutrient cycle. • high pressure causes hot temperatures in a hot desert during the day, but freezing temperatures at night • There are opportunities and challenges of living in hot desert. • hot deserts are fragile environments. • some life has adapted to live there. • Distributions, places and journeys are described on 	<ul style="list-style-type: none"> • To recognise characteristics of NEE's and explain their effect on development. • Various factors are interlinked, in order to be a global superpower. • Rural to urban migration and population growth has affected India socially. • Rural to urban migration and population growth has affected India economically. • The USA's superpower status may be under threat. • Graphs are analysed. 	<ul style="list-style-type: none"> • Different coastal landscapes are formed by different wave types. • The process of erosion and weathering impact coastal landscapes. • Coastlines are shaped by the process of longshore drift. • Coastal erosion affects people and places. • Coastlines are managed via hard and soft engineering methods. • Decisions are made as to how coastlines are managed. • Images are interpreted. 	<ul style="list-style-type: none"> • Water supply and demand in the UK needs careful management. • Demand and supply for water can be challenging to manage. • Companies and people can alleviate some of the supply and demand pressures on clean water. • Graphs are analysed. • Numerical or graphical data is described using the TEA technique. • Distributions, places and journeys are described on maps and analysed. 	<ul style="list-style-type: none"> • Urban environments are dynamic. • Inner city areas have changed over time. • Urban change has created many opportunities in UK cities. • Urban sprawl impacts the rural-urban fringe and how it changes over time. • Eastlands in Manchester has been redeveloped. • Urban areas can be and are being built for a sustainable future. • Redevelopment creates opportunities and challenges. • Images are interpreted. • Graphs are analysed. • Numerical or graphical data is described using the TEA technique. 	

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	<p>maps.</p> <ul style="list-style-type: none"> • Climate graphs are analysed. <p>Fieldwork investigations are undertaken.</p> <ul style="list-style-type: none"> • Data collection techniques impact results. • Micro-ecosystems are impacted by leaf litter/nutrient supply. 					
Key Concepts	Sustainability of world biomes	World development	Changing coastlines	Decision Making	Growth of UK cities	
Assessment	Mid-point and end of unit assessment	Mid-point and end of unit assessment	Mid-point and end of unit assessment	Mid-point and end of unit assessment	Mid-point and end of unit assessment	
Homework	<p>Research and draw your own food chain or web of your chosen world biome. Write 2 pages of notes for the mid -point and end of unit assessments.</p> <p>Research a hot desert ecosystem and produce a poster on how animals have adapted to them.</p>	<p>Recall of key terms on Google form/printed sheet.</p> <p>Write 2 pages of notes for the mid -point and end of unit assessments.</p> <p>Research task on NEE MINT countries.</p>	<p>Coasts project</p> <p>Write 2 pages of notes for the mid -point and end of unit assessments.</p> <p>Research and coastal landform from around the world, describe it and explain how it was formed.</p>	<p>Explain the global inequalities of resources and how the lack of resources such as food, water and energy impact people around the world. Write 2 pages of notes for the mid -point and end of unit assessments.</p>	<p>Explain the opportunities and challenges of urban growth.</p> <p>Write 2 pages of notes for the mid -point and end of unit assessments.</p> <p>Describe an example of sustainable urban development in the UK.</p>	
Wider reading	Our Planet' - accompanies the David Attenborough Netflix Series	Emerging Superpowers: India and China by Gill Miller	<p>Coastwise: Understanding Britain's Shoreline, Peter Firstbrook</p> <p>Coast by David Ross</p>	AQA Pre-release booklet Unit 3 2018	Growth, Decline, and Regeneration in Large Cities: A Case Study Approach by Steven G. Koven, Andrea C. Koven · Routledge · How Megacities are changing the world by P Khanna	
How to help at home	<ul style="list-style-type: none"> - Ensure your child completes all homework and revises prior to assessments. - Key websites: - https://www.bbc.co.uk/bitesize 					

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