Personalised Learning Checklist

	Red	Amber	Green
Area of study			
1: Dynamic Landscapes			
Topic 1: Tectonic Processes and Hazards			
Describe and comment on the global distribution and causes of earthquakes, volcanic eruptions and tsunamis.			
Describe and explain the distribution of plate boundaries and contrast divergent, convergent and conservative plate movements (oceanic, continental and combined situations).			
Determine the causes of intra-plate earthquakes, and volcanoes associated with hotspots from mantle plumes.			
Discuss the theory of plate tectonics (earth's internal structure, mantle convection, palaeomagnetism and sea floor spreading, subduction and slab p			
Explain the operation of these processes at dif tive, constructive, collision and transform).			
Understand the physical processes impact on t of volcanic eruption, and earthquake magnitude and focal depth (Benio			
Differentiate between the types of earthquake			
Understand that earthquake waves cause crus king and secondary hazrds (liquefaction and landslides).			
Explain how volcanoes cause lava flows, pyroclastic flows, ash falls, gas eruptions, and secondary hazards (lahars, jökulhlaup).			
Explain the cause and formation of a tsunami, using terms subduction zone, sea bed and water cloumn displacement.			
2. Why do some tectnoic hazards develop in to disasters?			
Define natural hazard.			
Define disaster.			
Understand the importance of vulnerability and community's threshold for resilience.			
Recall the hazard risk equation.			
Understand the Pressure and Release model (PAR) and the complex inter -relationships between the hazard and its wider context.			
Describe and evaluate the social and economic impacts of tectonic hazards on the people, economy and environment of contrasting locations in the developed, emerging and developing world.			
Differentiate between Mercalli, Moment Magnitude Scale (MMS) and Volcani Explosivity Index (VEI) as ways to measure magnitude and intensity of tectonic hazards.			
Compare and contrast the characteristics of tectonic hazards (magnitude, speed of onset and areal extent, duration, frequency, spatial predictability) through hazard profiles.			
Compare and contrast the characteristics of tectonic hazard events showing severity of social and economic impact in developed, emerging and developing countries.			
Explain how inequality of access to education, housing, healthcare and income opportunities can influence vulnerability and resilience to tectonic hazards.			
Explain how governance (local and national) and geographical factors (population density, isolation/accessibility, degree of urbanisation) influence vulnerability and a community's resilience to tectonic hazards.			

PLC Geography 1

Compare and contrast hazard events in developed, emerging and developing countries to show the interaction of physical factors and the significance of context in influencing the scale of disaster.			
3. How successful is the management of tectonic hazards and disasters?			
Describe tectonic disaster trends since 1960 (number of deaths, numbers affected, level of economic damage) in the context of overall disaster trends.			
Conduct and quote research into the accuracy and reliability of the data to interpret complex trends.			
Understand that tectonic mega-disasters can have regional or even global significance in terms of economic and human impacts. Research 2004 Asian tsunami, 2010 Eyafjallajokull eruption in Iceland (global independence) and 2011 Japanese tsunami (energy policy) and others to illustrate this significance.			
Understand the concept of a multiple-hazard zone and how linked hydrometeorological hazards sometimes contribute to a tectonic disaster.			
Research the Phillipines to illustrate this concept.			
Understand and explain the role of scientists in predicting and forecasting accuracy, which is dependent on the type and location of the hazard.			
Understand the importance of different stages of the hazard management cycle (response, recovery, mitigation, preparedness) and explain the role of emergency planners.			
Compare areas at differing stages of development using Park's Model to compare the response curve of hazard events.			
Evaluate strategies to modify vulnerability and resilience include hi-tech monitoring, prediction, education, community preparedness and adaptation, acknowledging models forecasting disaster impacts with and without modification).			
Evaluate strategies to modify loss (including emergency, short-term and long-term aid) and insurance.			
Comment on ther ole of NGOs and insurers and the actions of affected communites.			

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2B Coastal landscapes and Change			
1. Why are coastal landscapes different and what processes cause these differences?			
Define (and locate) littoral zone, backshore, nearshore and offshore zone.			
Understand the littoral zone includes a range of coastal types and is a dynamic zone of rapid change.			
Understand how coasts can be classified by using longer term criteria such as geology and changes of sea level or shorter term processes such as inputs from rivers, waves and tides.			
Describe characteristics of rocky coasts (high and low relief) result from resistant geology (to the erosive forces of sea, rain and wind), often in a high-energy environment.			
Describe characteristics of coastal plains (sandy and estuarine coasts) found near areas of low relief and result from supply of sediment from different terrestrial and offshore sources, often in a low-energy environment.			
Explain how geological structure is responsible for the formation od concordant and discordant coasts.			
Explain how geological structure influences coastal morphology (Dalmatian and Haff type concordant coasts and headlands and bays on discordant coasts).			
Explain how geological structure (jointing, dip, faulting, folding) is an important influence on coastal morphology and erosion rates, and also on the formation of cliff profiles and the occurrence of micro-features, e.g. caves.			
Understand that bedrock lithology (igneous, sedimentary, metamorphic) and unconsolidated material geology are important in understanding rates of coastal recession.			
Explain how differential erosion of alternating strata in cliffs (permeable/impermeable, resistant/less resistant) produces complex cliff profiles and influences recession rates.			
Explain how vegetation stabilises sadny coastlines (dune succession and marsh succesion).			
2. How do characteristic coastal landforms contribute to coastal landscapes?			
Differentiate between constructive/destructive waves.			
Explain how wave type influences beach morphology and profiles at a variety of timescales (daily/longer periods).			
Recall and differentiate between erosion processes (hydraulic action/corrosion/abrasion/attrition).			
Describe how erosion types are influenced by wave type, size and lithology.			
Describe the formation of erosional landforms - wave cut notch, wave cut platform, cliffs, cave-arch-stack-stump.			
Describe/Explain the process of longshore drift and how it affects sediment transport (as well as angle of wave attack, tides and currents).			
Describe the formation of transportation and despositinoal landforms - beach, recurved and double spits, offshore bars, barrier beaches and bars, tombolos and cuspate forelands - which can be stabilised by vegetation succession.			
Understand the coast as a system using the Sediment Cell concept (sources, transfers and sinks) - including negative and positive feedback - as an example of dynamic equilibrium.			
Define and differentiate between mechanical, chemical and bioligical weathering.			

Understand why weathering is important in sediment production and influences rates of recession.			
Define and differentiate between blockfall, rotational slumping and landslides (mass movement).			
Understand why it is important on some weak/complex coasts.			
Describe the formation of mass movement landforms - rotational scars, talus scree slopes, terrace cliff profiles.			
3. How do coastal erosion and sea level change alter the physical characteristics of coastlines and increase risks?			
Understand eustatic and isostatic factors lead to longer term sea level change, as well as tectonics.			
Describe the features asccociated with emergent coastlines (raised beaches with fossil cliffs).			
Describe the features associated with submergent coastlines (rias, fjords and Dalmation).			
Explain the risk to contemporary coastlines from global warming and tectonic activity.			
Explain the physical factors (geological and marine) that lead to rapid coastal recession, as well as the human (dredging, coastal management). (See: Nile Delta, Guinea and California coastline).			
Describe subaerial processes and their influence on the rate of coastal recession.			
Explain the factors (short and long term) that influence the rate of coastal recession (wind direction/fetch, tides, seasons, weather systems and occurrence of storms).			
Explain (local) factors that incease flood risk on some low-lying and estuarine coasts (height, degree of subsidence, vegetation removal), as well as the risk from global sea level rise. (See: Bangladesh, the Maldives for examples).			
Evaluate the impacts (short term) of storm surge events causing severe flooding (depressions, tropical cyclones). See: the Phillipines, Bangladesh for examples).			
Evaluate the increased risk caused by climate change (frequency and magnitude of storms, sea level rise), refer to mitigation and adaptation.			
4. How can coastlines be managed to meet the needs of all players?			
Describe economic losses (housing, businesses, agricultural land, infrastructure) and social losses (relocation, loss of livelihood, amenity value) from coastal recession.			
Evaluate their significance, especially in areas of dense coastal developments (see: Holderness, North Norfolk).			
Evaluate the serious economic and social consequences for coastal communities that coastal flooding and storm surge events can have, in developing and developed countries. (See: Phillipines, Bangladesh, Netherlands for illustration).			
Understand why climate change may create environmental refugees. (See: Tuvalu Islands).			
Discuss advantages/disadvantages of hard engineering approaches (groynes, sea walls, rip rap, revetments, offshore breakwaters).			
Discuss advantages/disadvantages of soft engineering approaches (beach nourishment, cliff re-grading and drainage, dune stabilisation).			
Examine local conflicts in (many) countries caused by the implementation of sustainable management of future threats (increased storm events, rising sea levels) - refer to mitigation and adaptation. (See: Maldives, Namibia for illustration).			
Evaluate the sustainable schemes that use holistic ICZM strategies to manage extended areas of coastline - referring to littoral cells.			
Evaluate policy decisions (No Active Intervention, Strategic Realignment and Hold The Line Advance The Line) based on complex judgements (engineering feasibility, environmental sensitivity, land value, political and social reasons). Include reference to Cost Benefit Analysis			
Examine conflict over policy decisions between different players (homeowners, local authorities, environmental pressure groups) with perceived winners and losers in countries at different levels of development.			

Personalised Learning Checklist

	Red	Amber	Green
3 Globalisation			
1. What are the causes of globalisation and why has it accelerated in recent			
Define globalisation to include idening and deepening global connections, interdependence and flows (commodities, capital, information, migrants and tourists).			
Explain how developments in transport and trade in the 19th century (railways, telegraph, steam-ships) accelerated in the 20th century (jet aircraft, containerisation), have contributed to a 'shrinking world'.			
Describe and explain the rapid development in ICT and mobile development in the 21st Century - lowering communication costs and contributing to time-space compression.			
Discuss how international political and economic organisations (WTO, IMF, World Bank) have contributed to globalisation (through promotoion of free trade policies and foreign direct investment).			
Evaluate the roles of national governments in promoting free trade blocs (EU, ASEAN) and through policies (free-market liberalisation, privatisation, encouraging business start-ups).			
Explain and evaluate how special economic zones, government subsidies and attitudes to FDI have contributed to globalisation in to new global regions. (See: China's 1978 Open Door Policy for example).			
Assess how the degree of globalisation varies by country.			
Understand it can be measured using indicators and indices (AT Kearney index, KOF index).			
Understand the role of TNCs in globalisation - contributing to its spread (global production networks, glocalisation and the development of new markets) and taking advantage of economic liberalisation (outsourcing and offshoring).			
Discuss the reasons (physical, political, economic and environmental why some locations remain largely 'switched off' from globalisation (See: North Korea, Sahel countries as examples).			
2. What are the impacts of globalisation for countries, different groups of people and cultures and the physical environment?			
Describe the movement of the global economic centre of gravity to Asia via the global shift of manufacturing (e.g. China) and outsourcing of services (e.g. India).			
Explain how this shifts leads to changes in the built environment that can bring benefits (infrastructure investment, waged work, poverty reduction, education and training) but also costs (loss of productive land, unplanned settlements, environmental and resource pressure).			
Explain how wave type influences beach morphology and profiles at a variety of timescales (daily/longer periods).			
Evaluate the impacts on health and wellbeing on communities in developing countries have experienced major environmental problems (including air and water pollution, land degradation, over-exploitation of resources, and loss of biodiversity).			
Discuss the social and environmental problems as a result of economic restrusturing (dereliction, contamination, depopulation, crime and high unemployment) in some deindutrialised regions in developed countries.			
Explain why rural-urban migration and/or natural increase is responsible for the growth of megacities (See: Mumbai, Karachi); rapid urban growth creates social and environmental challenges.			
Explain why international migrationnhas increased in global hib cities and regions and why this has deepened interdependence (elite migration - Russian oligarchs to London and mass low-wage economic migration (- India to UAE, the Philippines to Saudi Arabia)).			
Examine the economic, social, political and environmental costs and benefits for host and source locations.			

Understand theat cultural diffusion happens as a result of globalisation. TNCs, global media corporations (P: role of TNCs), tourism and migration create and spread an increasingly 'westernised' global culture which impacts on both the environment and people (see: Changing diets in Asia).			
Understand the spread of a global culture has also led to new awareness of opportunities for disadvantaged groups (see: Paralympic movement) particularly in emerging and developing countries.			
Discuss the impact of cultural erosion (loss of language, traditional food, music, clothes, social relations (see: loss of tribal lifestyles in Papua New Guinea) has resulted in changes to the built and natural environment (de-valuing local and larger-scale ecosystems).			
Understand that concern about cultural impacts, economic and environmental exploitation has led to opposition to globalisation from some groups and discuss reasons.			
3. What are the consequences of globalisation for global development and the physical environment and how should different players respond to its challenges?			
Contrast economic measures (income per capita, economic sector balance) and social development indicators (Human Development Index (HDI), Gender Inequality Index (GII)) and environmental quality (air pollution indices).			
Describe trends in widening income inequality, globally and nationally (measured using the Gini coefficient).			
Explain how these trends suggest globalisation has created winners and losers for people and physical environments between and within developed, emerging and developing economies.			
Show how contrasting trends in economic development and environmental management between global regions since 1970 indicate differential progress that can be related to the outcomes from globalisation.			
Understand why open borders, deregulation and encouragement of FDI created culturally mixed societies and thriving migrant diasporas in some locations, but tensions resulted elsewhere (See: Rise of extremism in Europe, Trans-boundary water conflicts)			
Evaluate the attempts in some locations to control the spread of globalisation by censorship (See: China, North Korea), limiting immigration (See: UK, Japan) and trade protectionism. Refer to role of government and attitudes of pro- and anti-immigration groups).			
Give examples of groups, who seek to retain their culteral identity within countries and seek to retain control of culture and physical resources (See: First Nations in Canada), and others that embrace economic advantages.			
Describe the role of local groups and NGOs in promoting local sourcing (See: transition towns) to incerase sustainability. Refer to economic, social and environmental costs and benefits.			
Discuss the role of fair trade andn ethical consumption schemes in reducing environmental degradation, the inequalities of global trade and improving working conditions for some people.			
Evaluate the effectiveness of recycling's role in managing resource consumption, referring to product and place. (See: local authorities in UK, local NGOs such as Keep Britain Tidy).			

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4 Globalisation			
4A Regenerating Places			
1. How and why do places vary? **An in-depth study of the local place in which you live or study and one contrasting place**			
Define each sector of economy activity (primary, secondary, tertiary and quaternary) and know economic activity can also be classified by type of employment (part-time/full-time, temporary/permanent, employed/self-employed.			
Give reasons for differences in economic activity (employment data and output data) which is reflected through variation in social factors (health, life expectancy and levels of education).			
Use quality of life indices to illustrate the inequalities in pay levels across economic sectors and in different types of employment.			
Give examples and reasons for changing functions (of places) over time (administrative, commercial, retail and industrial). Refer to physical factors, accessibility and connectedness, historical development and the role of local and national planning.			
Give examples and reasons for changing demographic characteristics (of places) over time (gentrification, age structure and ethnic composition). Refer to physical factors, accessibility and connectedness, historical development and the role of local and national planning.			
Understand how these changes are measured using employment trends, demographic changes, land use changes and levels of deprivation (income deprivation, employment deprivation, health deprivation, crime, quality of the living environment, abandoned and derelict land).			
Explain how regional and national influences have shaped the characteristics of your chosen places. Remember places can be represented in a variety of different forms (e.g. media, art), giving contrasting images to that presented more formally and statistically. How the lives of students and those of others are affected by this continuity and change, both real and imagined. Refer to roles of TNCs and IGOs.			
Explain how international and global influences have shaped of your chosen places. Remember places can be represented in a variety of different forms (e.g. media, art), giving contrasting images to that presented more formally and statistically. How the lives of students and those of others are affected by this continuity and change, both real and imagined. Refer to roles of TNCs and IGOs.			
Discuss how economic and social changes in your places have influenced people's identity.			
2. Why might regeneration be needed?			
What are the benefits of successsul regions (See: San Francisco Bay area) (high rates of employment, inward migration (internal and international) and low levels of multiple deprivation) and the disadvantages (high property prices and skill shortages in both urban and rural areas).			
Discuss the negative side to economic restructuring in some regions (See: The Rust Belt, USA) including increasing levels of social deprivation (education, health, crime, access to services and living environment) in both deindustrialised urban areas and rural settlements once dominated by primary economic activities.			
Assess the priorities for regeneration due to significant variations in both economic and social inequalities (gated communities, 'sink estates', commuter villages, declining rural settlements).			
Explain reasons for wide variations in levels of engagement in local communities (local and national election turnout, development and support for local community groups).			
Discuss how people's experiences and their attachment to place(s) is affected by age, ethnicity, gender, length of residence (new migrants, students) and levels of deprivation; these in turn impact on levels of engagement.			
Explain why groups in communities have different views about priorities/strategies for regeneration and how these views can lead to conflict (lack of political engagement and representation, ethnic tensions, inequality and lack of economic opportunity).			
Demonstrate the use of statistical evidence to determine the need for regeneration in your chosen local place.			
Discuss that media can provide contrasting evidence, questioning the need for regeneration in your chosen local place.			
Examine how different representations of your chosen local place could influence the perceived need for regeneration.			
3. How is regeneration managed?			

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4 Globalisation			
4A Regenerating Places			
Explain how infrastructure investment is needed to maintain growth and improve accessibilty to regerate regions (high speed rail, airport development). Refer to national government in partnerships with charities and developers.			
Understand that ate and type of development (planning laws, house building targets, housing affordability, permission for 'fracking') affects economic regeneration of both rural and urban regions.			
Understand how potential for growth and direct and indirect investment is affected by UK government decisions about international migration and the deregulation of capital markets. (See: foreign investment in London real estate).			
Explain, with examples, how local governments compete to create sympathetic business environments with local plans designating areas for development for a range of domestic and foreign investors (Science Parks).			
Describe the roles of local interest groups (Chambers of Commerce, local preservation societies, trade unions) in regeration decision making.			
Discuss the tensions between these groups - those that wish to preserve urban environments and those that seek change. (See: London 2012).			
Describe different urban and rural regeneration strategies - to include retail-led plans, tourism, leisure and sport. (See: London 2012) Public/private rural diversification. (See: Powys Regeneration Partnership).			
Describe the process of rebranding, to include re-imaging places using a variety of media to improve the image of both urban and rural locations and make them more attractive for potential investors.			
Understand how rebranding can stress the attraction of UK deindustrialised cities - creating specific place identity - building on their industrial heritage. Thus attracting visitors. (See: Glasgow 'Scotalnd with Style'.			
Describe and explain rural rebranding strategies (based on heritage and literary associations, farm diversification and specialised products, outdoor pursuits and adventure in both accessible and remote areas). (See: Bronte country, Kielder Forest).			
Assess the success of economic regeneration, using measures of income, poverty and employment (both relative and absolute changes) both within areas and by comparison to other more successful areas.			
Assess the social progress made by using reductions in inequalities both between areas and within them as indicators; social progress can also be measured by improvements in social measures of deprivation and in demographic changes (improvements in life expectancy and reductions in health deprivation), as indicators.			
Evaluate the success of regeneration on the understanding that it must lead to an improvement in the living environment (levels of pollution reduced, reduction in abandoned and derelict land).			
CASE STUDY: e.g. Salford Quays - Describe the sttrategies use din the regeneration of an urban place. Evaluate the (contested) decisions within local communities. Refer to NIMBYism.			
Describe and explain the changes that have taken place as a result of national and local strategies in an urban area.			
Discuss these changes using a range of economic, social, demographic and environmental variables in an urban area.			
Understand that different stakeholders (local and national governments, local businesses and residents) will assess success using contrasting criteria; their views will depend on the meaning and lived experiences of an urban place and the impact of change on the reality/image of that place.			
CASE STUDY: e.g. North Antrim Coast - Describe the sttrategies used in the restructuring of a rural place. Evaluate the (contested) decisions within local communities. Refer to NIMBYism.			
Describe and explain the changes that have taken place as a result of national and local strategies in the rural area.			
Discuss these changes using a range of economic, social, demographic and environmental variables in a rural area.			
Understand that different stakeholders (local and national governments, local businesses and residents) will assess success using contrasting criteria; their views will depend on the meaning and lived experiences of an urban place and the impact of change on the reality/image of that place.			

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3 Physical Systems and Sustainabilty			
5 Water Cycle and Water Insecurity			
1. What are the processes operating within the hydrological cycle from global to local scale?			
Describe the global hydrological cycle as a closed system driven by solar energy and gravitational potential energy.			
Define the different inputs, outpus, stores and flows within the cycle.			
Understand and explain the relative importance and size (percentage contribution) of the water stores (oceans, atmosphere, biosphere, cryosphere, groundwater and surface water) and annual fluxes between atmosphere, ocean and land.			
Understand the global water budget limits water available for human use and water stores have different residence times; some stores are non-renewable (fossil water or cryosphere losses)			
Define the terms: inputs (precipitation patterns and types: orographic, frontal, convectional) flows (interception, infiltration, direct runoff, saturated overland flow, throughflow, percolation, groundwater flow) and outputs (evaporation, transpiration and channel flow).			
Explain how these (terms) are linked processes in the hydrological cycle.			
Explain how physical factors affect the relative importance of inputs, flows and outputs (climate, soils, vegetation, geology, relief) in drainage basins.			
Discuss the disruption caused by humans, by accelerating processes (deforestation; changing land use) and creating new water storage reservoirs or by abstracting water, in the drainage basin cycle. (See:Amazonia)			
Interpret and understand water budgets (annual balance between inputs (precipitation) and outputs (evapotranspiration) and how they affect soil water and availability.			
Know that water budgets are influenced by climate type (See: tropical, temperate, polar examples).			
Analyse river regimes to show annual variation of discharge of a river and result from the impact of climate, geology and soils as shown in regimes from contrasting river basins. (See: Yukon, Amazon, Indus).			
Interpret storm hydrographs affected by physical features of drainage basins (size, shape, drainage density, rock type, soil, relief and vegetation) as well as human factors (land use and urbanisation). Refer to the role of planners in managing land use.			
2. What factors influence the hydrological system over short- and long-term timescales?			
Describe and explain the causes of drought (meteorological (short-A14term precipitation deficit, longer trends, ENSO cycles and hydrological).			
Discuss the contribution human activity makes to the risk of drought: over-abstraction of surface water resources and ground water aquifers. (See: Sahelian drought; Australia).			
Evaluate the impacts of drought on ecosystem functioning (wetlands, forest stress) and the resilience of these ecosystems.			

Describe and explain the meteorological causes of flooding, including intense storms leading to flash flooding, unusually heavy or prolonged rainfall, extreme monsoonal rainfall and snowmelt.			
Describe and explain the human causes (of exacerbation) of flood risk (changing land use, mismanagement of rivers using hard engineering).			
Evaluate the environmental impacts of flooding (soils and ecosystems). (See: UK 2007/2012).			
Evaluate the socio-economic impacts of flooding (economic activity, infrastructure and settlement).)See: UK 2007/2012).			
Describe how climate change affects processes (inputs, outputs) within hydrological cycle. Refer to trends in precipitation and evaporation.			
Decribe and explain how climate change affects stores and flows, size of snow and glacier mass, reservoirs, lakes, amount of permafrost, soil moisture levels as well as rates of runoff and stream flow.			
Understand climate change can result from short-term oscillations (ENSO cycles), as well as global warming, increases the uncertainty in the system, which causes concern over the security of water supplies. Refer to future drought and furture flood risk).			
3. How does water insecurity occur and why is it becoming such a global issue for the 21st century?			
Describe the growing mismatch between water supply and demand.			
Explain how this has led to a global pattern of water stress (below 1,700 m^3 per person) and water scarcity (below 1000m^3 per person).			
Describe the physical causes of water insecurity (See: climate variability, salt water encroachment at coast).			
Describe the human causes of water insecurity (See: over abstraction from rivers, lakes and groundwater aquifers, water contamination from agriculture, industrial water pollution).			
Describe and explain the pressure on finite water sources from rising demand (increasing population, improving living standards, industrialisation and agriculture).			
Explain why the pressure is increasingly serious in some locations and that it is leading to increasing risk of water insecurity. Refer to future water scarcity.			
Understand the causes of (and global pattern of) physical water scarcity and economic scarcity.			
Explain why the price of water varies globally.			
Discuss the importance of water supply for economic development (industry, energy supply, agriculture) and human wellbeing (sanitation, health and food preparation); the environmental and economic problems resulting from inadequate water.			
Discuss the potential conflicts that may occur between users within a country, and internationally over local and trans-boundary water sources (See: Nile, Mekong). Refer to roles of stakeholders.			
Examine the pros and cons of the techno-fix of hard engineering schemes to include water transfers, mega dams and desalination plants. (See: Water transfers in China).			
Understand and comment on the value of more sustainable schemes of restoration of water supplies and water conservation (smart irrigation, recycling of water). (See: Singapore). Refer to contrasting attitudes to water supply.			

Evaluate Integrated drainage basin management for large rivers. (See: Nile, Colorado).			
Evaluate water sharing treaties and frameworks (United Nations Economic Commission for Europe (UNECE) Water Convention, Helsinki and the Water Framework Directive and Hydropower, Berlin).			

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3 Physical Systems and Sustainabilty			
6 Carbon Cycle and Energy Security			
1. How does the carbon cycle operate to maintain planetary health?			
Describe the biogeochemical carbon cycle consisting of carbon stores of different sizes (terrestrial, oceans and atmosphere), with annual fluxes between stores of varying size (measured in Pg/Gt), rates and on different timescales.			
Describe and understand the production of the earth's geological carbon.			
Know how how carbon is released in to the earth's atmosphere through volcanic out-gassing at ocean ridges/subduction zones and chemical weathering of rocks.			
Explain how phytoplankton sequester atmospheric carbon during photosynthesis in surface ocean waters; carbonate shells/tests move into the deep ocean water through the carbonate pump and action of the thermohaline circulation.			
Explain how terrestrial primary producers sequester carbon during photosynthesis; some of this carbon is returned to the atmosphere during respiration by consumer organisms.			
Describe how biological carbon can be stored as dead organic matter in soils, or returned to the atmosphere via biological decomposition over several years.			
Explain how the greenhouse effect is impluenced by the concentration of atmospheric carbon (carbon dioxide and methane), which then determines the distribution of temperature and precipitation.			
Understand the role that ocean and terrestrial photosynthesis plays in regulating the composition of the atmosphere.			
Explain that soil health is influenced by stored carbon, which is important for ecosystem productivity.			
Explain how and why the process of fossil fuel combustion has altered the balance of carbon pathways and stores with implications for climate, ecosystems and the hydrological cycle.			
2. What are the consequences for people and the environment of our increasing demand for energy?			
Define and understand energy consumption (per capita and in terms of units of GDP) and energy mix (domestic and foreign, primary and secondary energy, renewable versus non-renewable).			
Explain why access to/consumption of energy resources depends on physical availability, cost, technology, public perception, level of economic development and environmental priorities. (See: national comparisons USA versus France).			
Describe the roles of energy players (P: role TNCs, The Organisation of the Petroleum Exporting Countries (OPEC), consumers, governments) in securing pathways and energy supplies.			

Discuss (and give examples of) the mismatch between locations of conventional fossil fuel supply (oil, gas, coal) and regions where demand is highest, resulting from physical geography.			
Understand that energy pathways (pipelines, transmission lines, shipping routes, road and rail) are a key aspect of security but can be prone to disruption especially as conventional fossil fuel sources deplete. (See: Russian gas to Europe).			
Discuss the social costs and benefits of the development of unconventional fossil fuel energy resources (tar sands, oil shale, shale gas, deep water oil). (See: Canadian tar sands, USA fracking, Brazilian deep water oil). Refer to the role of business vs environmental groups and affected communities).			
Discuss the implications for the carbon cycle of the development of unconventional fossil fuel energy resources (tar sands, oil shale, shale gas, deep water oil). (See: Canadian tar sands, USA fracking, Brazilian deep water oil). Refer to the role of business vs environmental groups and affected communities).			
Discuss the consequences for the resilience of fragile environments of the development of unconventional fossil fuel energy resources (tar sands, oil shale, shale gas, deep water oil). (See: Canadian tar sands, USA fracking, Brazilian deep water oil). Refer to the role of business vs environmental groups and affected communities).			
Evaluate the role that renewable and recyclable energy could play to help decouple fossil fuel from economic growth (nuclear, wind and solar power).			
Evaluate the costs and benefits economically, socially, and environmentally and in terms of their contribution renewable and recyclable energies can make to energy security. (See: Changing UK energy mix).			
Discuss the pros and cons of biofuels (implications for food supply as well as uncertainty over how 'carbon neutral' they are). (See: Biofuels in Brazil).			
Discuss the pros and cons of radical technologies including carbon capture and storage and alternative energy sources (hydrogen fuel cells, electric vehicles) could reduce carbon emissions but uncertainty exists as to how far this is possible.			
3. How are the carbon and water cycles linked to the global climate system?			
Explain why the growing demand for food fuel and other resources globally has led to contrasting regional trends in land-use cover (deforestation, afforestation, conversion of grasslands to (farming) affecting terrestrial carbon stores with wider implications for the water cycle and soil health.			
Explain how the health of coral reefs and other marine ecosystems are being affected by ocean acidification, as a result of its role as a carbon sink, increasing due to fossil fuel combustion.			
Explain howh the frequency of drought mayy increase due to climate change from the enhanced greenhouse effect.			
Describe and explain the link to shifting climate belts, which may impact on the health of forests as carbon stores. (See: Amazonian drought events).			

Discuss the implications of forest loss on human well-being.			
Recall and understand evidence that forest stores are being protected and even expanded, especially in countries at higher levels of development (environmental Kuznets' curve model). Refer to attitudes of global consumers to environmental issues)			
Describe how increased temperatures affect evaporation rates and the quantity of water vapour in the atmosphere.			
Discuss the implications this might have for precipitation patterns, river regimes and water stores (cryosphere and drainage basin). (See: Arctic).			
Explain why threats to ocean health impacts on human wellbeing, especially in develop ing regions that depend on marine resources as a food source and for tourism and coastal protection.			
Describe and explain the factors that mean future emissions, atmospheric concentration levels and climate warming are uncertain (natural factors (the role of carbon sinks), human factors (economic growth, population, energy sources) and feedback mechanisms (carbon release from peatlands and permafrost, and tipping points, including forest die back and alterations to the thermohaline circulation).			
Evaluate the adaptation strategies for a changed climate (water conservation and management, resilient agricultural systems, land-use planning, flood-risk management, solar radiation management).			
Describe how the carbon cycle could be re-balanced through mitigation (carbon taxation, renewable switching, energy efficiency, afforestation, carbon capture and storage).			
Discuss the requirement for global scale agreement and national actions both of which have proved to be problematic.			

Personalised Learning Checklist

	Red	Amber	Green
7 Superpowers			
1. What are superpowers and how have they changed over time?			
Understand how to define superpowers, emerging and regional powers using contrasting characteristics (economic, political, military, cultural, demographic and access to natural resources).			
Explain why mechanisms of maintaining power sit on a spectrum from 'hard' to 'soft' power, which vary in their effectiveness.			
Explain how these characteristics and mechanisms for maintaining power has changed over time (Mackinder's geo-strategic location theory) and its relative importance.			
Describe colonial control as a way to maintain power (See: British Empire, multipolar world 1919-1939).			
Discuss the rising importance of multi-faceted, indirect control (political, economic, military, cultural) including neo-colonial mechanisms. (See: Cold War era; emergence of China as a potential rival to the US).			
Explain how and why emerging countries, including Brazil, Russia, India and China (BRIC) and other G20 members, are considered increasingly important to global economic and political systems, as well as global environment governance. (See: UN Climate Change Conference).			
Analyse the evolving strengths and weaknesses (economic, political, military, cultural, demographic and environmental) that might inhibit or advance their economic and geopolitical role in the future.			
Compare and contrast Development Theory.			
Understand how Development Theory (World Systems Theory, Dependency Theory, Modernisation Theory) can be used to help explain changing patterns of power.			
2. What are the impacts of superpowers on the global economy, political systems and the physical environment?			
Explain how superpowers influence the global economy (promoting free trade and capitalism) through a variety of IGOs (World Bank, IMF, WTO, World Economic Forum (WEF)).			
Explain the role of TNCs as dominant economic forces in the global economy and economic and cultural globalisation in terms of technology (patents) and trade patterns.			
Desribe how global cultural influence (arts, food, media) is linked to economic influence in technology and how westernisation is an important aspect of power.			
Examine the role of superpowers and emerging nations in global action (crisis response, conflict, climate change).			
Zealand and United States Security Treaty (ANZUS) and economic (EU, North American Free Trade Agreement (NAFTA), ASEAN) and environmental (IPCC) increase interdependence and are important in geostrategy and global influence.			
Discuss the role of The UN (Security Council, International Court of Justice, and peacekeeping missions and climate change conferences) in ensuring global geopolitical stability.			

Discuss the demand on resources (food, fossil fuels, and minerals) by superpowers and their disproportionate contribution to environmental degradation and global warming.			
Compare different countries' willingness to act to reduce carbon emissions and reach global agreements on environmental issues. (USA, EU, China, and Russia).			
Discuss the implications of Future growth in middle-class consumption in emerging superpowers on r the availability and cost of key resources (rare earths, oil, staple grains and water), as well as for the physical environment.			
3. What spheres of influence are contested by superpowers and what are the implications of this?			
Understand that tensions can arise over the acquisition of physical resources (Arctic oil and gas) where ownership is disputed and disagreement exists over exploitation.			
Explain why trade relations and TNC investments are strained through the counterfeiting of intellectual propert rights.			
Explain how political spheres of influence can be contested leading to tensions over territory and physical resources (See: South and East China Seas) and in some cases resulting in open conflict (See: Western Russia/Eastern Europe) with implications for people and physical environments.			
Discuss the benefits of developing economic ties between emerging powers and the developing world (China and African nations) (increase interdependence, generate environmental impacts and bring opportunities and challenges).			
Evaluate the rising importance of certain Asian countries (China, India) and its impact (increases) on the geopolitical influence of the region and its creation of economic and political tensions within the region.			
Describe the cultural, political, economic and environmental tensions in the Middle East.			
Explain how these tensions show an ongoing challenge to superpowers because of (complex) geopolitical reasons along with the supply of vital energy resources. Refer to different cultural ideologies.			
Explain why debt, unemployment, economic restructuring, social costs (economic problems) show an ongoing challenge to the USA and EU.			
Understand how economic costs of maintaining global military power (naval, nuclear, air power, intelligence services) and space exploration are questioned in some existing powers.			
Discuss a range of possible outcomes for the balance of global power in 2030 and 2050 (continued USA dominance, bi- and multi-polar structures).			

Personalised Learning Checklist

	Red	Amber	Green
8 Global Development and Connections			
8A Health, Human Rights and Intervention			
1. What is human development and why do levels vary from place to place?			
Describe how human development has traditionally been measured.			
Explain why the relationship between human contentment and levels of wealth and income is complex (Happy Planet Index) and many dominant models are contested (See: Sharia law, Bolivia under Evo Morales).			
Explain the link between economic growth and improvements in environmental quality, health, life expectancy and human rights, as significant goals for development (Rosling).			
Discuss why education is central to economic development (human capital) and to human rights.			
Discuss why (giving examples) why this view is not universally shared). (See: The United Nations Educational, Scientific and Cultural Organisation - UNESCO).			
Account for the differences in health and life expectancy in the developing world (See: ifferences in lifestyles, levels of deprivation and the availability, cost and effectiveness of medical care).			
Describe and explain difference in health and life expectancy within countries (See: UK, Brazil) that relate to Ethnic variations (See: Aboriginals in Australia) and income and inequalities - impact on lifestyles.			
Appreciate the complex relationship between economic and social development, dependent on decisions made by governments on the importance of social progress - from welfare states with high levels of social spending to totalitarian regimes run by elites with low levels of spending on health and education.			
Describe the promotion (by IGOs - World Bank, IMF, WTO) of neo-liberal views of development based on the adoption of free trade, privatisation and deregulation of financial markets. Also, recent programmes have been aimed at improving environmental quality, health, education and human rights.			
Assess the progress against the United Nation's Millennium Development Goals (MDGs) in terms of individual countries, global regions and targets; the UN post-2015 development agenda expands on the MDGs, setting new goals to include sustainable development.			
2 Why do human rights vary from place to place?			
Understand the purpose of the Universal Declaration of Human Rights.			
Explain how the European Convention on Human Rights helps prevent conflict.			
Discuss the ECHR's controversiality.			
Understand the purpose of the Geneva Convention, prosecuting those who commit war crimes.			
Discuss the Geneva Conventions' limitations.			
Contrast examples of states, which prioritise economic development over human rights and examples of those who invoke human rights frequently.			
Compare an authoritarian and a democratic system to illustrate that some superpowers and emerging powers have transitioned to more democratic governments but the degree of democratic freedom varies. Refer to variation in the protection of human rights and degree of freedom of speech.			
Explain why levels of corruption (measured by Index of Corruption) are a threat to human rights.			
Identify significant groups, defined by gender and/or ethnicity that have had fewer rights than the dominant group - in some states.			
Describe and explain the link between differences in rights and levels of health and education. (See: indigenous populations in North and South America).			

Recall examples of women and ethnics groups deemanding equality and playing an important part in the state's history (See: Afghanistan, Australia, Bolivia).			
3. How are human rights used as arguments for political and military intervention?			
Understand the terms development aid, trade embargoes, military aid, indirect, direct military action and explain how they are used to address development and human rights issues.			
Assess the validity of interventions promoted by IGOs, national governments and NGOs (Amnesty International, Human Rights Watch).			
Understand that some Western governments frequently condemn human rights violations and use them as conditions for offering aid, negotiating trade agreements, and as a reason for military intervention, which challenge ideas of national sovereignty.			
Describe the forms of development aid - from charitable gifts to address the impacts of hazards (See: Haiti) administered both by NGOs (See: Oxfam, Christian Aid) and national governments, to IGOs offering loans.			
Evaluate the impact of development aid, looking at progress and drawbacks.			
Discuss the impacts of economic development (by superpowers and TNCs) on the environment (in which minority groups live - disregarding human rights to land and culture). (See: oil in the Niger Delta or Peruvian Amazon and land grabs in East Africa).			
Explain how global strategic interests drive military interventions and discuuss their justification by protagonists in terms of human rights.			
Explain how military aid is used to support countries that that have questionable human rights histories (in terms of training personnel and weapons sales).			
Explain how the 'war on terror' is partially justified as promoting human rights of minority communities (direct military intervention). Contrast with the use of torture by combatant states that have signed the Declaration of Human Rights.			
4. What are the outcomes of geopolitical interventions in terms of human development and human rights.			
Understand that measurements of success comprise a wide range of variables, including improvements in health, life expectancy, educational levels, gender equality, freedom of speech and successful management of refugees as well as increases in GDP per capita.			
Discuss the importance (for some governments and IGOs) of the introduction of democratic institutions and how freedom of expression is seen as central to the development of democratic and capitalist societies.			
Understand how success is measured in terms of economic growth with less attention to holistic development (human wellbeing) or human rights and the development of democratic institutions.			
Evaluate the (unclear) relationship of aid, developments, health and human rights - and its relative success in some states (See: Botswana, Ebola in West Africa) compared to failure (relative) in toer states. (See: Haiti. Iraq).			
Discuss why economic inequalities have increased in some states and descreased in others - impacting on health and life expectancy.			
Assess the extent to which superpowers use development aid as an extension of their foreign policies.			
Judge their success in terms of access to resources, political support in IGOs and military alliances and formation of military alliances.			
Describe how the recent history of military interventions (direct and indirect) indicate that there are costs - including loss of sovereignty and human rights and contrasts between short term gains and long term costs.			
Discuss whether (other) non-military interventions may have a stronger record of improving human rights and development. (See: Coe d'Ivoire).			
Evaluate why lack of action has (global) consequences.			
Discuss the negative impacts on progress in environmental, political and social development (human wellbeing and human rights).			