

Curriculum Overview – Year 12 Geography – Physical Geography

Sequencing of topics	What knowledge will students develop? (Including key terminology)	What skills will students develop? (Including literacy & numeracy)	Assessment opportunities	Homework opportunities	Personal development (Ursuline Values, Catholic Social Teaching, Cultural Capital, Cross-curricular, Careers)	Curriculum links
Autumn Term 1						
<p>Water and Carbon cycle 3.1 Physical Geography</p>	<p>Overview of topic: This topic focuses on the major stores of water and carbon at or near the Earth’s surface and the dynamic cyclical relationships associated with them. These are major elements in the natural environment and understanding them is fundamental to many aspects of physical geography.</p> <p>The physical topics explores a systems approach to the study of water and carbon cycles. The content invites students to contemplate the magnitude and significance of the cycles at a variety of scales, their relevance to wider geography and their central importance for human populations.</p> <p>1. Water and carbon cycles as natural systems:</p> <ul style="list-style-type: none"> • Systems in physical geography: systems concepts and their application to the water and carbon cycles inputs – outputs, energy, 	<p>Throughout the Water and Carbon cycle Physical geography topic students will develop a range of:</p> <p>Quantitative and qualitative skills:</p> <ul style="list-style-type: none"> • Students engage with a range of quantitative and relevant qualitative skills, within the theme water and carbon cycles. • Students will specifically understand simple mass balance, unit conversions and the analysis and presentation of field data. 	<p>Students are assessed using AQA exam questions after every sub-topic is completed.</p> <p>Assessments range from in class assessments to essay writing.</p>	<p>Students are given 3-4 hours of homework per Geography teacher and are encouraged to complete wider readings using the available resources.</p> <p>Students homework can range from exam questions, research tasks, group projects and presentations.</p>	<p>United in harmony: For the global importance of the water and carbon cycle for life on Earth to exist</p> <p>Loving and compassionate: Empathising for those effected by flooding and the impact it has across the world</p> <ul style="list-style-type: none"> ○ Solidarity ○ Personal ○ Moral ○ Social ○ Sciences ○ Maths ○ Meteorologist ○ Hydrologist ○ NGO ○ Engineer 	<p>KS3 links</p> <p>Builds on the knowledge of flooding topic</p> <p>KS4 links</p> <p>Strong links to river landscapes</p>

	<p>stores, flows/transfers, positive/negative feedback, dynamic equilibrium.</p> <p>2. The water cycle:</p> <ul style="list-style-type: none"> • Global distribution and size of major stores of water – lithosphere, hydrosphere, cryosphere and atmosphere. • Processes driving change in the magnitude of these stores over time and space, including flows and transfers: evaporation, condensation, cloud formation, causes of precipitation and cryospheric processes at hill slope, drainage basin and global scales with reference to varying timescales involved. • Drainage basins as open systems – inputs and outputs, to include precipitation, evapo-transpiration and runoff; stores and flows, to include interception, surface, soil water, groundwater and channel storage; stemflow, infiltration overland flow, and channel flow. Concept of water balance. • Runoff variation and the flood hydrograph: range of physical and human factors 	<p>Specific skills:</p> <ul style="list-style-type: none"> • Extended writing • Creating synoptic links • Drawing and reading hydrographs • Statistical analysis • Research • Reading soil moisture graphs 				
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	<p>causing variations in hydrographs.</p> <ul style="list-style-type: none"> • Changes in the water cycle over time: to include natural variation including storm events, seasonal changes and human impact including farming practices, land use change and water abstraction. <p>3. Case study: of the River Brock to illustrate and analyse the key themes above, engage with field data and consider the impact of precipitation upon drainage basin stores and transfers and implications for sustainable water supply and/or flooding.</p>					
Autumn Term 2						
<p>Water and Carbon cycle 3.1 Physical Geography</p>	<p>1. The carbon cycle: Global distribution, and size of major stores of carbon – lithosphere, hydrosphere, cryosphere, biosphere, atmosphere.</p> <p>2. Factors driving change in the magnitude of these stores over time and space: including flows and transfers at plant, sea and continental scales. Photosynthesis,</p>	<p>Specific skills:</p> <ul style="list-style-type: none"> • Extended writing • Creating synoptic links • Statistical analysis • Research • Reading carbon budget charts • Presentation skills 	<p>Students are assessed using AQA exam questions after every sub-topic is completed.</p> <p>Assessments range from in class assessments to essay writing.</p>	<p>Students are given 3-4 hours of homework per Geography teacher and are encouraged to complete wider readings using the available resources.</p> <p>Students homework can</p>	<p>Faith-filled and hopeful: That there is hope that we can work together to mitigate the impacts of climate change on the Earth</p> <ul style="list-style-type: none"> ○ Care for creation ○ Solidarity ○ Personal ○ Social 	<p>KS3 links Links to climate change topic</p> <p>KS4 links Links to natural hazards topic</p>

	<p>respiration, decomposition, combustion, carbon sequestration in oceans and sediments, weathering.</p> <p>3. Changes in the carbon cycle over time: to include natural variation (including wild fires, volcanic activity) and human impact (including hydrocarbon fuel extraction and burning, farming practices, deforestation, land use changes).</p> <p>4. The carbon budget and the impact of the carbon cycle: upon land, ocean and atmosphere, including global climate.</p>	<ul style="list-style-type: none"> • Team work 		<p>range from exam questions, research tasks, group projects and presentations</p>	<ul style="list-style-type: none"> ○ Moral ○ The sciences ○ Maths ○ Policy advisor ○ Sustainable industries ○ Carbon offsetting ○ Transport planner ○ Civil service 	

Spring Term 1

<p><u>Water and Carbon cycle</u> 3.1 Physical Geography</p>	<p>1. Water, carbon, climate and life on Earth: The key role of the carbon and water stores and cycles in supporting life on Earth with particular reference to climate. The relationship between the water cycle and carbon cycle in the atmosphere.</p> <p>2. The role of feedbacks within and between cycles and their link to climate change and implications for life on Earth.</p>	<p>Specific skills:</p> <ul style="list-style-type: none"> • Extended writing • Creating synoptic links • Statistical analysis • Research • Projects 	<p>Students are assessed using AQA exam questions after every sub-topic is completed.</p> <p>Assessments range from in class assessments to essay writing.</p>	<p>Students are given 3-4 hours of homework per Geography teacher and are encouraged to complete wider readings using the available resources.</p> <p>Students homework can range from exam</p>	<p>Leading with justice: Exploring and reflecting on the impact individual/small-scale action can have on conserving tropical rainforests</p> <ul style="list-style-type: none"> ○ Care for creation ○ Solidarity ○ Personal ○ Social ○ Moral 	<p>KS3 links</p> <p>Builds on the Brilliant Brazil</p> <p>KS4 links</p> <p>Ecosystems and Amazon topic</p>
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	<p>3. Human interventions in the carbon cycle: designed to influence carbon transfers and mitigate the impacts of climate change.</p> <p>4. Case study: of a tropical rainforest (Amazon) setting to illustrate and analyse key themes in water and carbon cycles and their relationship to environmental change and human activity.</p>			<p>questions, research tasks, group projects and presentations</p>	<ul style="list-style-type: none"> ○ Cultural ○ The sciences ○ English ○ Biologist ○ Scientist ○ Policy ○ Government 	
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Spring Term 2

<p><u>Coastal systems and landscapes</u> 3.1 Physical Geography</p>	<p>Overview of topic: This topic of focuses on coastal zones, which are dynamic environments in which landscapes develop by the interaction of winds, waves, currents and terrestrial and marine sediments. The operation and outcomes of fundamental geomorphological processes and their association with distinctive landscapes are readily observable. In common with water and carbon cycles, a systems approach to study is specified.</p> <p>Student engagement with subject content fosters an informed appreciation of the beauty and diversity of coasts and their importance as human habitats.</p>	<p>Quantitative and qualitative skills:</p> <p>Students will engage with a range of quantitative and relevant qualitative skills, within the theme landscape systems.</p> <p>These will include observation skills, measurement and geospatial mapping skills and data manipulation and statistical skills applied to field measurements</p>	<p>Students are assessed using AQA exam questions after every sub-topic is completed.</p> <p>Assessments range from in class assessments to essay writing.</p>	<p>Students are given 3-4 hours of homework per Geography teacher and are encouraged to complete wider readings using the available resources.</p> <p>Students homework can range from exam questions, research tasks, group projects and presentations</p>	<p>Listening and attentive: Reflective listening to the connections between the Earth's systems and their importance for life on Earth</p> <ul style="list-style-type: none"> ○ Care for creation ○ Personal ○ Social ○ Moral ○ Cultural ○ History ○ Science ○ Biologist ○ Environmentalist ○ Water management ○ Resource extraction ○ Renewable energy ○ Tourism Industry 	<p>Links to KS3 Coast topic</p> <p>Links to KS3 Coastal landscapes topic</p>
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	<p>1. Coasts as natural systems: Systems in physical geography: systems concepts and their application to the development of coastal landscapes – inputs, outputs, energy, stores/components, flows/transfers, positive/negative feedback, dynamic equilibrium. The concepts of landform and landscape and how related landforms combine to form characteristic landscapes.</p> <p>2. Systems and processes</p> <ul style="list-style-type: none"> • Sources of energy in coastal environments: winds, waves (constructive and destructive), currents and tides. Low energy and high energy coasts. • Sediment sources, cells and budgets. • Geomorphological processes: weathering, mass movement, erosion, transportation and deposition. • Distinctively coastal processes: marine: erosion – hydraulic action, wave quarrying, 	<p>Specific skills:</p> <ul style="list-style-type: none"> • Extended writing • Creating synoptic links • Statistical analysis • Research • Calculating sediment budgets • Drawing diagrams of coastal processes 				
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	corrasion/abrasion, cavitation, solution, attrition; transportation: traction, suspension (longshore/littoral drift) and deposition; sub-aerial weathering, mass movement and runoff.					
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Summer Term 1

<p>Coastal systems and landscapes 3.1 Physical Geography</p>	<p>3. Coastal landscape development:</p> <ul style="list-style-type: none"> • Origin and development of landforms and landscapes of coastal erosion: cliffs and wave cut platforms, cliff profile features including caves, arches and stacks; factors and processes in their development. • Origin and development of landforms and landscapes of coastal deposition. Beaches, simple and compound spits, tombolos, offshore bars, barrier beaches and islands and sand dunes; factors and processes in their development. • Estuarine mudflat/saltmarsh environments and associated landscapes; factors and 	<p>Quantitative and qualitative skills:</p> <p>Students will engage with a range of quantitative and relevant qualitative skills, within the theme landscape systems.</p> <p>These will include observation skills, measurement and geospatial mapping skills and data manipulation and statistical skills applied to field measurements.</p> <p>Specific skills:</p> <ul style="list-style-type: none"> • Extended writing • Creating synoptic links • Statistical analysis 	<p>Students are assessed using AQA exam questions after every sub-topic is completed.</p> <p>Assessments range from in class assessments to essay writing.</p>	<p>Students are given 3-4 hours of homework per Geography teacher and are encouraged to complete wider readings using the available resources.</p> <p>Students homework can range from exam questions, research tasks, group projects and presentations</p>	<p>Grateful and generous: Being grateful for the beauty and diversity of coastal landscapes across the world</p> <ul style="list-style-type: none"> ○ Care for creation ○ Personal ○ Social ○ Moral ○ Cultural ○ History ○ Science ○ Biologist ○ Environmentalist ○ Water management ○ Resource extraction ○ Renewable energy ○ Tourism Industry 	<p>Links to KS3 Coast topic</p> <p>Links to KS3 Coastal landscapes topic</p>
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	<p>processes in their development.</p> <ul style="list-style-type: none"> • Eustatic, isostatic and tectonic sea level change: major changes in sea level in the last 10,000 years. • Coastlines of emergence and submergence. Origin and development of associated landforms: raised beaches, marine platforms; rias, fjords, Dalmatian coasts. • Recent and predicted climatic change and potential impact on coasts. • The relationship between process, time, landforms and landscapes in coastal settings. 	<ul style="list-style-type: none"> • Research • Drawing diagrams of coastal landforms 				
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Summer Term 2

<p>Coastal systems and landscapes 3.1 Physical Geography</p>	<p>4. Coastal management:</p> <ul style="list-style-type: none"> • Human intervention in coastal landscapes. Traditional approaches to coastal flood and erosion risk: hard and soft engineering. • Sustainable approaches to coastal flood risk and coastal erosion management: shoreline 	<p>Quantitative and qualitative skills:</p> <p>Students will engage with a range of quantitative and relevant qualitative skills, within the theme landscape systems.</p>	<p>Students are assessed using AQA exam questions after every sub-topic is completed.</p>	<p>Students are given 3-4 hours of homework per Geography teacher and are encouraged to complete wider readings using the available resources.</p>	<p>Discerning and Joyful: Appreciating the complexity of managing the coast including the various stakeholders and being joyful that we can protect the coast</p> <ul style="list-style-type: none"> ○ Care for creation ○ Common good ○ Personal 	<p>Links to KS3 Coast topic</p> <p>Links to KS3 Coastal landscapes topic</p>
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	<p>management/integrated coastal zone management.</p> <p>5. Case studies:</p> <ul style="list-style-type: none"> • Case study of coastal environments in the UK to illustrate and analyse fundamental coastal processes, their landscape outcomes as set out above and engage with field data and challenges represented in their sustainable management. • Case study of a contrasting coastal landscape beyond the UK (Bangladesh) to illustrate and analyse how it presents risks and opportunities for human occupation and development and evaluate human responses of resilience, mitigation and adaptation. 	<p>These will include observation skills, measurement and geospatial mapping skills and data manipulation and statistical skills applied to field measurements.</p> <p>Specific skills:</p> <ul style="list-style-type: none"> • Extended writing • Creating synoptic links • Statistical analysis • Research • Creating detailed case studies • Decision making 	<p>Assessments range from in class assessments to essay writing.</p>	<p>Students homework can range from exam questions, research tasks, group projects and presentations.</p>	<ul style="list-style-type: none"> ○ Social ○ Moral ○ Cultural ○ Science ○ Engineer ○ Environmentalist ○ Water management ○ Civil service ○ NGO 	
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<p>Preparation for: 3.3 Geography fieldwork investigation</p>	<p>Fieldwork requirements: All students are required to undertake fieldwork in relation to processes in both physical and human geography.</p> <p>Coursework requirements: Students will undertake an independent investigation. This must incorporate a significant element of fieldwork. The fieldwork undertaken as part of the individual investigation will be based on the Changing Places topic. They may incorporate field data and/or evidence from field investigations collected individually or in groups. What is important is that students work on their own on contextualising, analysing and reporting of their work to produce an independent investigation with an individual title that demonstrates required fieldwork knowledge, skills and understanding.</p>	<p>Wide range of skills:</p> <ul style="list-style-type: none"> • Creating research question and hypothesis • Using a range of qualitative and quantitative primary data collection methods • Using a range of data presentation and data analysis methods • Writing a fieldwork investigation 	<p>This will be monitored by teachers and regular feedback provided</p>	<p>Students will complete the majority of the independent fieldwork investigation at home</p>	<p>Courageous and Resilient: Completing independent fieldwork takes courage and resilience. Students will need to be focused, motivated and go beyond the classroom.</p> <ul style="list-style-type: none"> ○ Care for creation ○ Common good ○ Dignity of people ○ Personal ○ Social ○ Moral ○ Cultural ○ Science ○ History ○ English ○ Civil service ○ NGO ○ Project manager ○ Research ○ Marketing 	
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