MAGHULL HIGH SCHOOL – CURRICULUM MAP- Coastal Systems and Landscapes Year 12 Term 1 and 2

Term 1	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
LESSON TOPIC QUESTION(S)	The coastal system	Coastal processes	Coastal landforms	Sea level changes	Coastal management	Case study – Holderness coastline	Humans and the coast – Sunderbans, Bangladesh
Knowledge & Skills development	Knowledge 1. To investigate the inputs, outputs, flows and stores of the coastal system. To investigate positive and negative feedbacks in the coastal system. To investigate energy and sediment sources. To investigate waves. 2. To investigate erosion, transportation, deposition, weathering and mass movement 3. To investigate landforms created by erosion and deposition 4. To investigate the causes of sea level changes including: climate, eustatic and isostatic resulting in submergence and emergence of coastlines 5. To investigate how hard and soft engineering can protect the coast 6. To investigate the Holderness landscape, landforms and management 7. To investigate how the Sunderbans are managed. Opportunities and risks						
	Skills- Studying coastal systems and landscapes at A Level Geography provides rich opportunities to develop and apply a wide range of geographical skills—essential for both exam success and fieldwork competence. These skills fall under data collection, interpretation, analysis, and evaluation, and are central to both written papers and the NEA (Non-Exam Assessment). Cartographic Skills Map interpretation: Reading and analysing OS maps, especially for identifying coastal landforms. Sketch maps and field sketches: Representing coastal features or management strategies visually. Use of GIS (Geographical Information Systems): Mapping erosion rates, flood risk zones, or land use changes. Evaluative and Decision-Making Skills • Cost-benefit analysis: Weighing up economic vs. environmental consequences of defences. • Conflict matrix: Identifying and analysing stakeholder perspectives (residents, councils, conservationists).						

	Synoptic skills Sustainability evaluation: Judging whether a coastal strategy balances economic, environmental, and social factors. Linking **physical processes** (e.g. erosion, deposition) to **human responses** (e.g. building sea defences).Evaluating management strategies in the context of climate change and rising sea levels. Using case studies to apply place-specific knowledge and broader geographical theory				
Assessment / Feedback Opportunities	Exam-style questions (structured, data response, and essay)	Structured, data response, and essay style questions to assess evaluative and synoptic skill In class or set as homework Timed questions in class	Walk and talk through exam style questions Wagoll Mark scheme/Mark criteria familiarisation Peer marking	Geofile factsheets with set questions	***Summative assessment*** End of a topic test based on past paper questions Mock exam Full paper1 coasts section

Key Vocabulary	**Coastal Processes**
	
	• **Erosion** – The wearing away of the coastline by natural forces.
	• **Hydraulic action** – The force of water breaking rock particles away from the coastline.
	• **Abrasion (Corrasion)** – When rocks hurled by the sea scrape and grind against the coast.
	• **Attrition** – Rocks carried by the sea smash together and break into smaller, smoother pieces.
		Transportation and Deposition
		
		• **Longshore drift** – Movement of sediment along the coast by wave action.
		• **Swash** – The movement of water up the beach.
		• **Backwash** – The movement of water back down the beach.
			Coastal Landforms
			
			• **Headland and bay**
			• **Cliff** – A steep rock face formed by the sea's erosive action.
			• **Wave-cut platform**
			• **Cave, arch, stack, stump**
			• **Spit**
			• **Bar**
			• **Tombolo**
			• **Salt marsh**
			• **Sand dune**
			• **Estuary**
				Coastal Management
				
				• **Hard engineering** – Artificial structures to control natural processes.
				  ○ **Sea wall**
				  ○ **Groynes**
				  ○ **Rock armour (riprap)**
				  ○ **Gabions**
				  ○ **Revetments**
				• **Soft engineering** – Works with natural processes.
				  ○ **Beach nourishment**
				  ○ **Dune regeneration**
				  ○ **Managed retreat**	

	• **Solution (Corrosion)** – The chemical dissolution of rocks (e.g. limestone) by seawater.
	• **Weathering** – The breakdown of rocks in situ.
	  ○ **Mechanical weathering** – e.g. freeze-thaw.
	  ○ **Chemical weathering** – e.g. carbonation.
	  ○ **Biological weathering** – Caused by plants, animals or microbes.
	• **Mass movement** – Downslope movement of material due to gravity.
	  ○ **Slumping**
	  ○ **Rockfall**
	  ○ **Landslide**
		• **Traction** – Large particles rolled along the seabed.
		• **Saltation** – Small pebbles and stones bounced along the sea bed.
		• **Suspension** – Fine material carried in the water.
		• **Solution (transport)** – Minerals dissolved in the water.
		• **Deposition** – When material being transported is dropped by the sea.
			Case Study Vocabulary
			
			• **Sediment cell** – A self-contained area of sediment movement.
			• **Resilience** – The ability of a system to recover from disturbance.
			• **Adaptation** – Adjusting to expected coastal changes.
			• **Mitigation** – Efforts to reduce the severity of coastal risks.
				• **Integrated Coastal Zone Management (ICZM)** – A holistic approach to coastal management.
				• **Shoreline Management Plan (SMP)** – Regional strategies for coastal protection.
				  ○ **Hold the line**
				  ○ **Advance the line**
				  ○ **Managed retreat**
				  ○ **Do nothing**
				• **Cost-benefit analysis** – Assessing economic efficiency of coastal schemes.
				• **Environmental Impact Assessment (EIA)** – Evaluating ecological effects of projects.

Literacy/Reading opportunities	Literacy and reading are essential in A Level Geography—not just for comprehension, but for developing critical thinking, evaluation, and communication skills. Geography bridges science and the humanities, so strong literacy is key to success in exams, coursework, and wider understanding.
	
	Extended Writing in Exam Questions
	
	• Essay-style responses are common, especially in topics like:
	• Students must develop arguments, use evidence, and evaluate different perspectives.
	
	• Reading Academic and Non-Fiction Texts Geography students are expected to read widely beyond the textbook, including:
	  ○ Case study reports (e.g. UN climate reports, NGO publications)
	  ○ Government policy documents (e.g. DEFRA flood management strategy)
	  ○ Articles from journals (e.g. *Geography Review*, *Geographical*, *New Internationalist*)
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	○ Case study reports (e.g. UN climate reports, NGO publications) ○ Government policy documents (e.g. DEFRA flood management strategy) ○ Articles from journals (e.g. *Geography Review*, *Geographical*, *New Internationalist*) Recommended sources: • Royal Geographical Society (RGS) website • Geographical Magazine (by RGS) • Geofactsheets/Geofiles– targeted reading for A Level students • The Guardian / BBC News – Environment section for up-to-date real-world examples Critical Reading and Evaluation Place-Based Literature and Fieldwork Case study articles/texts. **Vocabulary Development** • Technical and subject-specific vocabulary is extensive: e.g. “interdependence,” “resilience,” “isostatic adjustment” • Glossaries and word banks are often used in class **Current Affairs and Geopolitical Reading** • Real-world geographical understanding is built by engaging with: ○ News articles on climate change, migration, global trade, disasters ○ Reports from organisations like IPCC, World Bank, UNEP, NGO
Cross-Curricular Themes	Coastal studies in Geography connect with several cross-curricular themes, offering rich opportunities to draw on knowledge and skills from other subjects. These links help students understand the complexity of coastal environments and management. Science (Biology, Physics, Environmental Science) • Coastal processes: erosion, longshore drift, wave dynamics (physics)

	• Ecosystems: salt marshes, sand dunes, mangroves, biodiversity (biology) • Climate change: sea level rise, ocean acidification (environmental science) Mathematics • Data analysis: wave frequency, sediment size, beach profile graphs • Statistical methods: mean, mode, range, Spearman's rank (especially for NEA) • Measuring change: rates of erosion, cross-sectional area of beaches Design & Technology / Engineering • Sea defences: design and evaluation of hard and soft engineering (e.g. sea walls, groynes) • Sustainable infrastructure: eco-friendly coastal development • Structural impacts: response of built environments to coastal processes Economics / Business Studies • Cost-benefit analysis: evaluating the economic viability of coastal defences • Impact on tourism and local economies: e.g. beach nourishment or managed retreat • Sustainable development: balancing economic growth with environmental protection 5. Politics / Citizenship / Law • Decision-making: stakeholder conflict in coastal management (e.g. homeowners vs. conservationists) • Policy and governance: UK shoreline management plans (SMPs), DEFRA guidelines • Climate justice: international response to sea level rise, especially for small island nations English / Literacy Analytical writing: essays on coastal processes or management strategies Media and representation: how coasts are portrayed in newspapers or documentaries

	Place studies: using descriptive and evaluative language to explore coastal identitArt and Media Studies Coastal landscapes: inspiration for photography, painting, and film Environmental communication: using art/media to raise awareness about erosion or conservation Changing representations: how media shapes perceptions of coastal areas (tourism, crisis, beauty) History Historic coastline changes: loss of land to erosion, e.g. Holderness Coast Impact of human settlement: historical use and adaptation to coastlines Coastal defence evolution: changes in technology and response over centuries Religious Studies / Philosophy & Ethics Ethical dilemmas: managed retreat vs. protecting communities Environmental stewardship: beliefs about human responsibility for nature
Personal Development (Including British Values, RSE, Citizenship)	**Personal development** **Encouraging empathy**: Understanding the social impact of coastal erosion or flooding on families and communities. **Developing communication and teamwork**: Through group fieldwork activities, discussions, and debates.**Exploring well-being and safety**: Including risk assessment in fieldwork and the emotional effects of climate-related displacement. **British values**

	Democracy Exploring how coastal management decisions involve public consultation and local democracy. **Rule of Law** Understanding coastal planning regulations, environmental laws, and shoreline management plans. **Individual Liberty** Balancing property rights with environmental concerns—e.g. residents resisting managed retreat. **Mutual Respect & Tolerance** Respecting diverse community views on controversial issues like tourism,
Career Opportunities	Coastal studies and coastal management open the door to a wide range of interdisciplinary and impactful careers. These fields combine elements of geography, environmental science, policy, engineering, and conservation, some examples include: 1. Coastal Manager / Coastal Zone Manager • Plans and implements sustainable strategies for coastal development, erosion control, and habitat protection • Works with local councils, government agencies, or NGOs • Employers: Environment Agency (UK), Natural Resources Wales, local authorities, DEFRA 2. Marine Conservation Officer • Protects marine and coastal biodiversity • Works on projects involving marine protected areas, species conservation, and habitat restoration • Employers: Marine Conservation Society, WWF, Natural England 3. Environmental Consultant (Coastal Specialism) • Advises on environmental impact assessments (EIA), especially for coastal developments like ports, sea walls, or wind farms • Often employed by consulting firms or contracted by government agencies

	4. Climate Change Adaptation Specialist • Focuses on managing coastal impacts of sea-level rise, increased storm frequency, and flooding • Works with policy makers and planners to build climate resilience
	Engineering & Technical Roles 5. Coastal Engineer • Designs and assesses sea defences, breakwaters, groynes, flood barriers, etc. • Often requires a civil or coastal engineering degree • Employers: Engineering firms, local councils, the Environment Agency 6. Hydrographic Surveyor • Maps and monitors coastlines, sea beds, and underwater features using sonar and GIS • Vital for navigation safety, dredging, and coastal development Research, Science & Academic Roles 7. Marine Geoscientist / Coastal Geomorphologist • Studies shoreline processes like erosion, sediment transport, and deposition • Often works in universities, research labs, or with environmental consultancies 8. Oceanographer / Marine Scientist • Focuses on physical, chemical, and biological processes in coastal and ocean environments • Roles in research institutes, national oceanographic bodies, or academic teaching 9. GIS Specialist / Remote Sensing Analyst

	• Uses satellite imagery and spatial data to monitor coastal changes (e.g. erosion, land use, flooding) • Vital in planning and disaster response