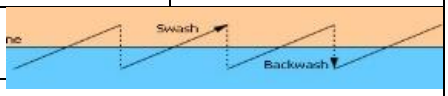
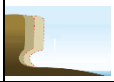
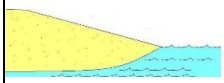
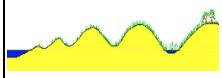
Coasts

Wave types	Constructive (P 40) Characteristics: **Low frequency, low and long, swash stronger so pushes sediment up beach.**	Destructive (P39) Characteristics: **High frequency, high and steep, backwash stronger than swash so remove sediment from beach.**
Wave action (P40)	P. wind Action: **Swash**	Action: **Backwash**

Coastal processes	**Weathering (P38)**	1 Chemical - **Carbonation**	2 Mechanical – **Freeze thaw weathering.**	
	Mass Movement (P38)	1 Rock fall  What and why? **Weathering and erosion weaken cliff so material breaks up and falls down.**	2 Sliding  What and why? **Erosion and moisture in gaps in cliff cause material to shift in straight line.**	3 Slumping  What and why? **Erosion and moisture in gaps in cliff cause material to shift with a rotation.**
	Erosion (P88)	1 Hydraulic power What?: **Waves trap air in gaps in cliff putting pressure on rocks..**	2 Abrasion What? **Particles in water scrap against cliff.**	3 Attrition What?: **Particles flung against each other.**
				4 Solution What? **Chemicals in water break down cliff.**
	Transport -ation (P40)	Longshore drift **(See wave action)**		Diagram 
	Deposition	Dropping material Why? **Lose of energy (wind drops), carrying too much sediment, sheltered area**		

Landforms	**Erosional (P39)**	1 Stack 	2 Wave cut platform 	3 Headlands and bays 
		Process of formation: 1. **Headlands made of hard rock have weaknesses eg cracks.** 2. **Waves erodes cracks expanding into caves.** 3. **Continued erosion means cave breaks through headland.** 4. **Erosion and weathering wear away rock supporting arch.** 5. **Arch collapses forming stack.**	Process of formation: 1. **Waves cause erosion at foot of cliff forming wave cut notch.** 2. **Notch enlarged as erosion continues.** 3. **Rock above notch becomes unstable and collapses.** 4. **Repeated collapse means wave cut platform retreats.**	Process of formation: 1. **Soft rock erodes more easily than hard rock.** 2. **Headlands and bays form where there are alternating bands of harder and softer rock.** 3. **Softer rock erodes quickly and forms a curved bay with a gentle slope.** 4. **Harder rock eroded more slowly jutting out forming a headland with steep sides.**

	Depositional (P41)	1 Beach 		2 Sand dunes 		3 Spit 
		Process of formation: 1. **Formed on coasts between the high and low water mark.** 2. **Constructive waves deposit material like sand and shingle.** 3. **This forms gently sloping sandy beaches of steep shingle beaches.**		Process of formation: 1. **Formed when sand deposited by longshore drift is moved up the beach by wind.** 2. **Obstacles (like driftwood) cause wind speed to decrease so sand is not moved.** 3. **Vegetation grows on sand dunes stabalising the sand.** 4. **Over time the oldest sand dunes migrate inland.**		Process of formation: 1. **Spits form at sharp bends in the coastline eg: river mouth.** 2. **Longshore drift transports sediment past the bend and deposits in the sea because less energy in the water.** 3. **Strong winds and waves curve the end of the spit.** 4. **Material builds up behind the spit where plants can grow.** 5. **Over time area becomes mudflats or salt marsh.** **(When a spit extends between one headland and another is becomes a bar with lagoon behind.)**
	Example: Jurassic coast	E Stack Old Harry	E Arch Durdle Door	E Cove Lulworth Cove	E Bay Swanage Bay	D Sand dunes Studland

Management	Hard (P44)	1 Sea wall  Advantage: **Prevents erosion fully and can also prevent flooding as energy of waves reflected out to sea reducing insurance costs.** Disadvantage: **Very expensive to build and maintain so less money to spend on public services like schools.**	2 Groynes  Advantage: **Trap sediment building up the beach so it absorbs the energy of the waves.** Disadvantage: **Starve beaches further down the coast so less increased erosion.**	3 Rock armour  Advantage: **Fairly cheap and can also limit flooding as energy of waves absorbed reducing insurance costs.** Disadvantage: **Ugly to look at so the number of tourists may reduce meaning job losses.:**	4 Gabions  Advantage: **Fairly cheap and can also limit flooding as energy of waves absorbed reducing insurance costs.** Disadvantage **Ugly to look at so the number of tourists may reduce meaning job losses.:**
	Soft (P44)	1 Beach nourishment Advantage: **Creates wider beaches absorbing the energy of the waves so less erosion of cliff.** Disadvantage: **Material is taken from the sea bed which disrupts the ecosystem.**		Dune regeneration Advantage: **Wave energy is absorbed which prevents erosion of the cliff.** Disadvantage: **Very expensive so less money to spend on services like schools.**	
	Managed retreat (P44)	Coastal realignment	What is it? **Removing defences and allowing the sea to flood the land behind.**	Advantage: **Cheap and easy so money can be spent protecting valuable parts of coastline.**	Disadvantage: **Can cause conflict eg farmers will lose their fields.**

Example- Holderness Coast (P45)	**Reasons for…**	Coastline retreating because.. **erosion causing cliff to collapse as the cliff made of soft boulder clay.**	Rate of coastal retreat per year: **1.8 metres.**	In need of protection because.. **Town like Hornsea and Withernsea and roads like B1242.**
	Management	Hard Engineering – what was done? **Two rock groynes built at Mappleton to trap sediments and build up beaches so energy of waves absorbed reducing erosion.**		
	Effects	Erosion reduced at Mappleton… But Conflict because: Economic: **Land eroded south of Mappleton eg Great Cowden Caravan Park so loss of jobs.** Environmental: **Loss of habitat for wildlife at Spun Head due to erosion because less material being transported from further up the coast.**		