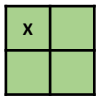
Revision Checklist – Changing Coasts

	Revised for homework? (1)	Revised for homework? (2)	Revised in lesson?
Erosion: hydraulic action, abrasion, solution, attrition.			
Weathering: physical, chemical, biological.			
Examples of stronger rock and weaker rock.			
Formation of headlands and bays.			
Changing headland: crack, crevice, cave, arch, stack, stump.			
Longshore drift.			
Formation of spits.			
Geographical skills.			

Coordinates	OS maps	Grid references	Distance	Percentages	Averages	Writing tips	Revision tips
				%			

Knowledge Organiser – Changing Coasts

Headlands and Bays (1 / 4)

Core Knowledge	Revision Questions
• The **coast** is the narrow strip where the land, sea, and air meet each other.	• What is the coast?
• Beaches and cliffs are found along the coast. **Beaches** are slopes of sand and loose rocks. **Cliffs** are vertical walls of rock.	• What is a beach? • What is a cliff?
What is erosion?	
• **Erosion** happens when water breaks rock into smaller pieces. Waves breaking rock at the coast is called **marine erosion**. Waves erode cliffs by three processes:	• What is marine erosion?
• **Hydraulic action**. Waves push air into small cracks in cliffs. This expands the cracks until loose pieces of rock break away.	• How do waves erode cliffs?
• **Abrasion**. Rocks transported by waves crash against cliffs, breaking pieces of rock away from them.	
• **Solution**. Weak acids in sea water dissolve rock, wearing cliffs away.	
• Rocks transported by waves erode too. As waves move, they crash into each other and break, eventually becoming small, smooth, round pebbles. This process is called **attrition**.	• How are rocks transported by waves eroded? What is this process called?

Knowledge Organiser – Changing Coasts

Headlands and Bays (2 / 4)

Core Knowledge	Revision Questions
What is weathering?	
• **Weathering** happens when rocks are broken but stay in the same place. Rock at the coast is weathered by three processes:	• What is weathering? • How is rock at the coast weathered?
• **Physical weathering**. Water in small cracks in cliffs repeatedly freezes and thaws. This expands the cracks until loose pieces of rock break away.	
• **Chemical weathering**. Rock is worn down by weak acids in rain water.	
• **Biological weathering**. Rock is broken by burrowing animals and the growing roots of plants.	
What affects the speed of erosion and weathering?	
• Waves with more energy will erode rock faster. Waves have more energy when they move fast or have been blown by the wind over a long distance.	• How does wave energy affect the speed of erosion?
• Some rocks are **more resistant** to breaking, so are eroded / weathered slowly. These are called **stronger rocks** / **harder rocks**. For example, granite, limestone.	• Some rocks erode / are weathered slowly. What are they called? Give one example.
• Some rocks are **less resistant** to breaking, so are eroded / weathered quickly. These are called **weaker rocks** / **softer rocks**. For example, clay, sandstone.	• Some rocks erode / are weathered quickly. What are they called? Give one example.

Knowledge Organiser – Changing Coasts

Headlands and Bays (3 / 4)

Core Knowledge	Revision Questions
How do headlands and bays form?	
• Headlands and bays form on discordant coasts where there are alternating areas of stronger and weaker rock exposed to erosion.	• Where do headlands and bays form?
1. Waves hit the coast, eroding the land by hydraulic action, abrasion and solution.	• How do headlands and bays form?
2. The areas of weaker rock erode faster than the areas of stronger rock.	
3. The areas of weaker rock retreat a lot. This forms low areas of land that curve in, away from the sea, called bays.	• Describe the appearance of a bay.
4. The areas of stronger rock do not retreat much. This forms high areas of land that stick out to sea, called headlands.	• Describe the appearance of a headland.
5. Weaker rock broken away from the coast is eroded by attrition, forming pebbles and sand. These are dropped by waves in bays, forming beaches.	• How do beaches form in bays?
• Marine erosion has formed headlands and bays along the Jurassic Coast, UK. For example, Durlston Head and Studland Bay.	• Give an example of a bay. • Give an example of a headland.

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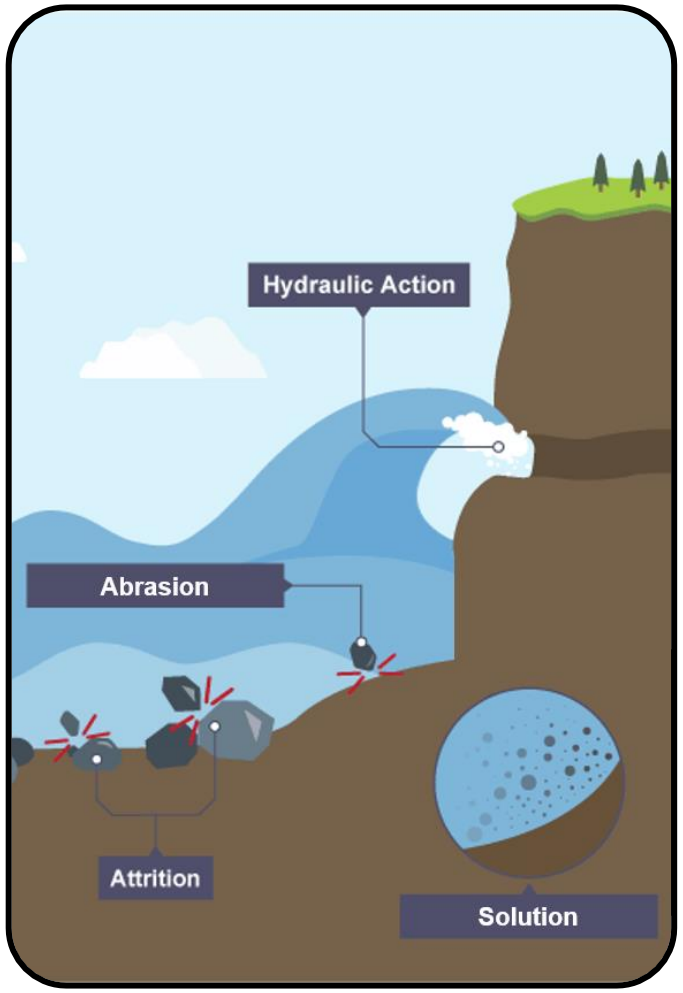
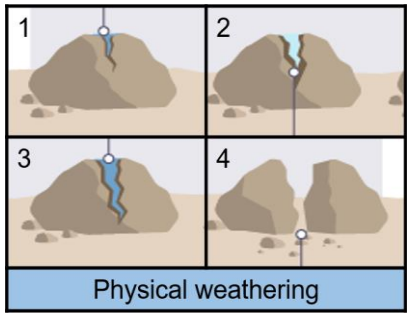
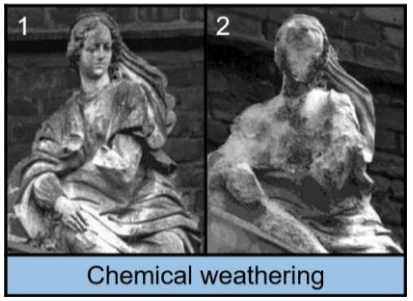
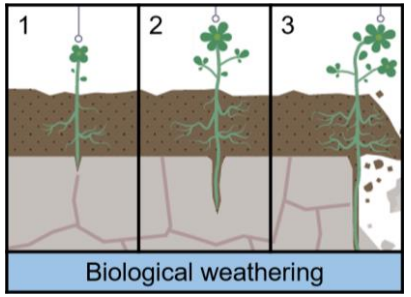
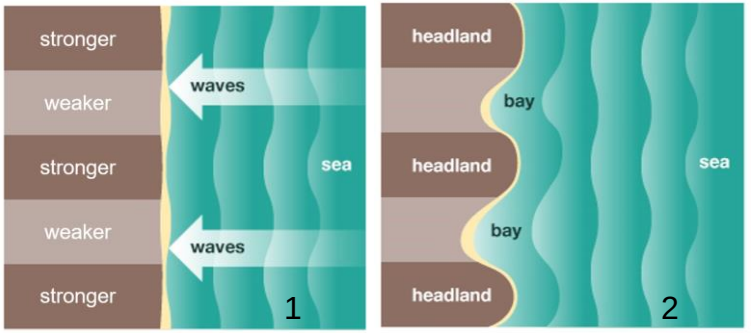
Headlands and Bays (4 / 4)











Headlands and Bays

Video 1

Headlands and Bays

Video 2

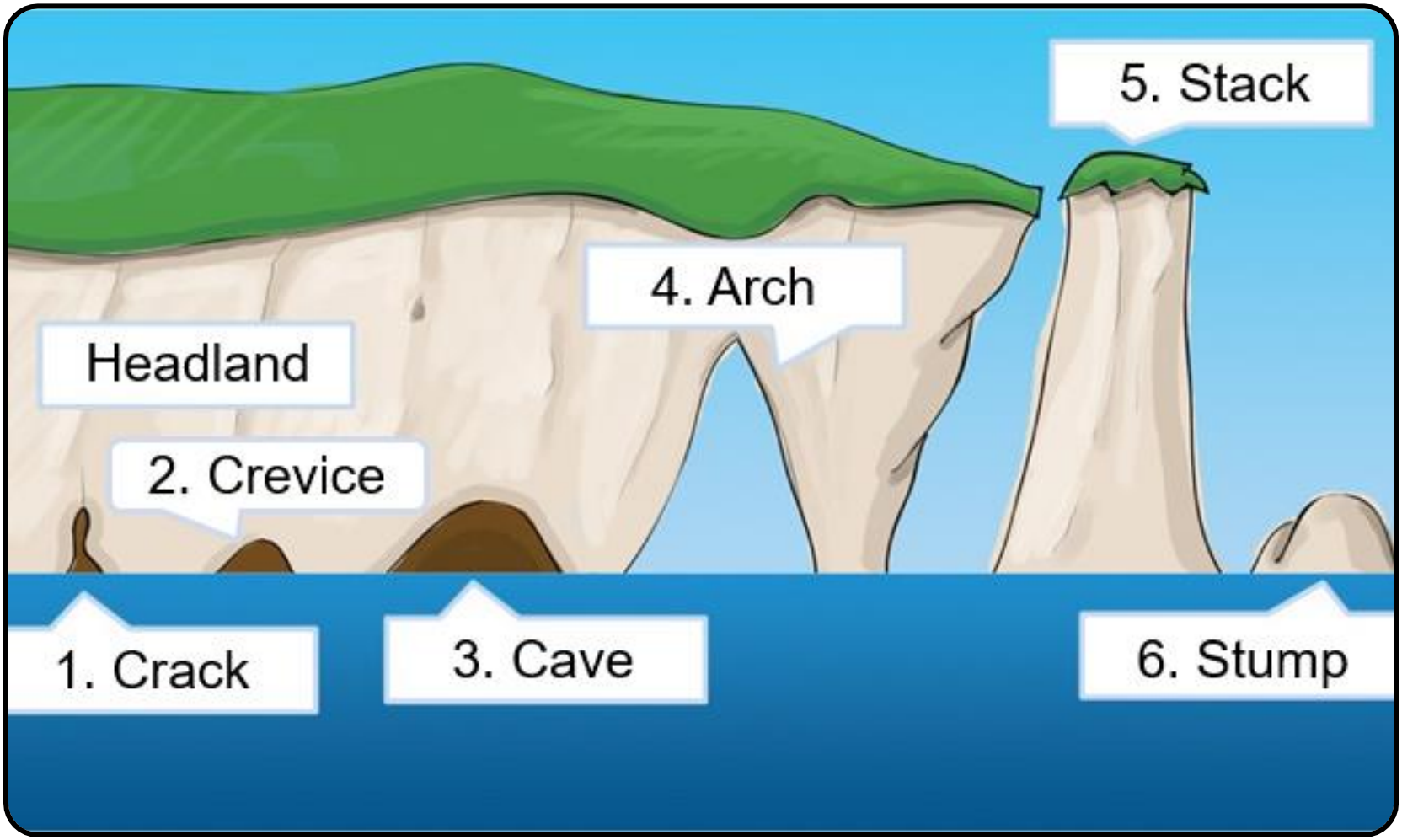
Knowledge Organiser – Changing Coasts

Changing Headland (1 / 2)

Core Knowledge	Revision Questions
How do headlands change shape? 1. A crack in the base of the headland is widened and deepened by erosion, forming a larger crevice and eventually a cave. 2. Caves are widened and deepened by more erosion. Eventually, two caves on opposite sides of the headland merge, forming an arch. 3. The arch roof is weakened by weathering. For example, biological weathering like burrowing animals, and chemical weathering like acid rain. 4. Eventually, the weakened arch roof is pulled down into the sea by gravity. This leaves a column of rock separated from the headland. This is called a stack. 5. Waves hit the base of the stack, eroding it. This means that the base of the stack becomes narrow. 6. Eventually, the unstable, top-heavy stack is pulled over into the sea by gravity. This leaves a stump of rock at the same height as sea-level. • Marine erosion has formed large caves, arches and stacks along the Jurassic Coast, UK. For example, Durdle Door (arch) and Old Harry (stack).	• How are headlands reshaped over time? • Which marine erosion processes widen and deepen cracks and caves? • How is the arch roof weakened? • What force pulls the arch roof into the sea? • Why is only the base of the stack eroded? • Why does the stack suddenly collapse instead of gradually shrinking? • Give an example of an arch. • Give an example of a stack.

Knowledge Organiser – Changing Coasts

Changing Headland (2 / 2)



Changing Headland Video

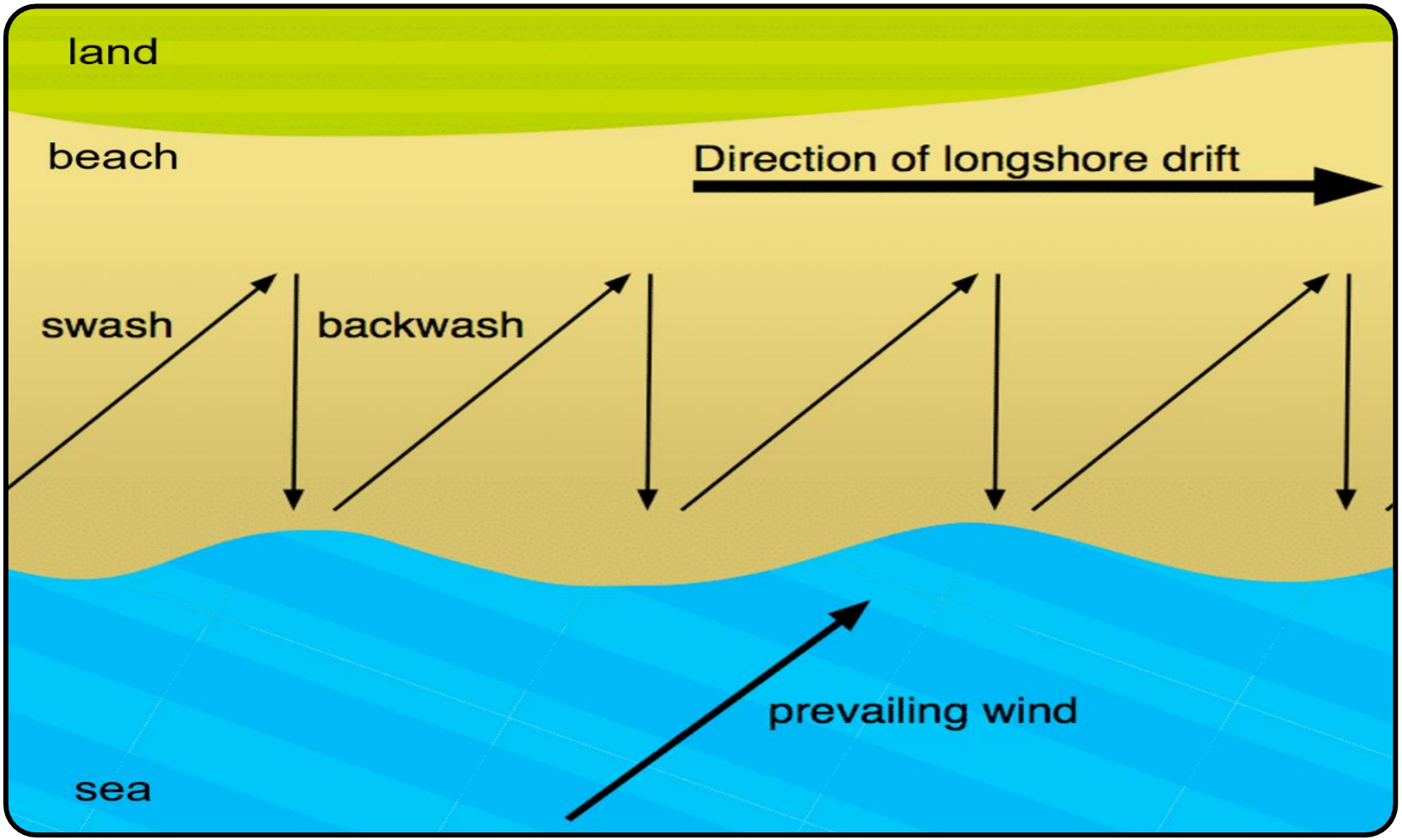
Knowledge Organiser – Changing Coasts

Longshore Drift (1 / 2)

Core Knowledge	Revision Questions
• **Transportation** is when waves move sediment. • Waves do not need much energy to transport small, light sediment, like sand. • Waves need more energy to transport larger, heavier sediment, like rocks.	• What is transportation? • How much energy do waves need to transport rocks? Why?
How is sediment transported?	
• The **prevailing wind** is the direction that the wind blows most of the time. 1. The prevailing wind blows across the sea, forming waves that transport sediment. 2. Waves move up the beach at the same angle as the wind. This is **swash**. 3. Waves move straight down the beach, pulled by gravity. This is **backwash**. 4. These steps repeat, causing waves to move up and down the beach in a zig-zag. 5. As waves move in a zig-zag, sediment they carry is transported along the beach. • This transportation process is called **longshore drift**.	• What is the prevailing wind? • What does the prevailing wind create? • What is swash? What angle does it move? • What is backwash? What angle does it move? • What pattern do waves move at the beach? • What direction is sediment transported? • What is this process called?

Knowledge Organiser – Changing Coasts

Longshore Drift (2 / 2)



Longshore Drift Video

Knowledge Organiser – Changing Coasts

Spits (1 / 2)

Core Knowledge	Revision Questions
• **Deposition** is when waves drop sediment because they lose energy.	• What is deposition? Why does it happen?
What is a spit?	
• A **spit** is a beach that extends away from the land.	• What is a spit?
How do spits form?	
1. The prevailing wind causes longshore drift to transport sediment along the coast.	• What process begins the formation of a spit?
2. The land curves inwards where a river flows into the sea. This is a **river estuary**.	• What happens to the land at a river estuary?
3. Waves continue to be blown into the estuary by the prevailing wind.	• Why do waves move into the river estuary?
4. Waves lose energy as they collide with river water flowing in the opposite direction.	• Why do waves lose energy in a river estuary?
5. When waves lose energy, they **deposit** the sediment they are transporting.	• What happens when waves lose energy?
6. Deposited sediment builds up, forming a beach that extends across the estuary.	• What forms as deposition repeats over time?
• The river deposits mud behind this spit, forming a **mudflat**. Plants will grow in the mudflat, holding the mud together to form a wet area of land called a **salt marsh**.	• What is a mudflat? How does it form? • What is a salt marsh? How does it form?

Knowledge Organiser – Changing Coasts

Spits (2 / 2)

Spit Formation Video