Title: Exploring Coastal Processes and Landforms

Host 1: Have you ever wondered how cliffs, beaches, and headlands are formed? Or why some coasts have caves and others have long sandy fingers of land called spits? Well, today, we're diving into the science behind coastal processes and landforms!

Host 2: That's right! Coasts are shaped by powerful forces like waves, currents, tides, and wind. Over time, these natural forces create some of the most beautiful landscapes on Earth. Let's start by looking at the major features of a coastline.

Host 1: First up, cliffs and headlands. Cliffs are steep rock faces formed when waves crash against the land and slowly wear it away. Over time, softer rock erodes faster than harder rock, creating headlands and bays. The tougher rock sticks out into the sea, forming headlands, while the softer rock is carved away into bays.

Host 2: And along those headlands, we often find caves, arches, and stacks! Waves attack the base of a cliff, enlarging small natural cracks. They may cause a notch all these way along the base of the cliff, or they may wear away some areas faster than others. If they do this, caves form. If the cave continues to erode all the way through a headland, it forms an arch. When the top of the arch eventually collapses, it leaves behind a tall,

isolated rock called a stack.

Host 1: That's amazing! Now, let's talk about beaches. These are formed when waves deposit sand and pebbles along the shore. The material comes from cliffs being warn away, but also from material Brough to the coast by rivers. Some beaches change shape with the seasons—being wider in summer when waves are gentle and narrower in winter when waves are stronger. That's because gentle waves push material inland, while winter storm waves, pull beach material back into the sea.

Host 2: Speaking of sand movement, let's talk about longshore drift. Waves often hit the shore at an angle, carrying sand along the coast. This movement of sand builds up landforms like sand spits, which are long, narrow stretches of sand extending into the sea. In some cases, spits can even connect to a nearby island, forming a tombolo.

Host 1: Another fascinating coastal feature is the delta. Deltas form where rivers meet the sea, depositing large amounts of material that has been picked up all along the river's course. The Mississippi Delta in the U.S. and the Nile Delta in Egypt are famous examples. These areas can produce fertile land for farming if they are drained.

Host 2: But coasts aren't just shaped by nature—people live and work by the sea, too! Coastal towns rely on fishing, tourism, and shipping. Some cities, like New York and London, became major trade

centers because of their sheltered coastal locations.

Host 1: However, living by the coast also comes with challenges. Coastal erosion can threaten homes and businesses, and storms can cause flooding. That’s why many places build sea walls, groynes, and other defenses to protect the shoreline. However, all of the sea defences come at a cost. If the sea cannot wear away land at one place, it will wear it away at another. So land near to sea defences often wears away faster than it would naturally.