

# Make a Model of the Jurassic Coast



Ages	Subject	Topics	Resources
7-11 years	Science Geography	Rocks	Playdough (4 colours), wooden lolly stick, grated 200g milk/dark and white chocolate, 30 plastic cups, cling film, worksheets from the activity pack

The Dorset and East Devon Coast was designated a **World Heritage Site (WHS)** in 2001 because of the area's globally important geology, palaeontology and geomorphology. The sedimentary rock strata exposed in the cliffs between Exmouth in East Devon and Studland Bay in Dorset record 185 million years of environmental change through the entire Mesozoic era, commonly known as the time of the dinosaurs. As environmental conditions changed here over the course of the Mesozoic a wide variety of sedimentary rocks were laid down. The distribution of the different rocks along the coast has given rise to an incredible landscape, where natural processes have worked the rocks into almost every coastal landform imaginable, from barrier beaches to sea arches and stacks. In this activity we explore the key elements of the rock cycle and how it can help us to understand the formation of the three main rock types: sedimentary, igneous and metamorphic. Using these principles, we then build our own model of the Jurassic Coast out of playdough.



## **Teachers' Materials**

This activity works best with children working in pairs or groups of three. Each group will need to have 4 balls of playdough of different colours. You could either make your own playdough or buy a pack of small ready-made playdough pots. Each group will also need a wooden lolly stick which acts as an agent of erosion.

## **Practicalities**

Tables need to be clean and children will need to wash their hands afterwards.

## **Discussions**

Around 25 million years ago the African tectonic plate collided with the European plate. The huge pressures generated heaved and folded rocks to create the mountain chain we know as the Alps. Ripples from that collision spread north through the Earth's crust and gently folded the rocks here, in what would become south Dorset and Purbeck. This collision also caused the rocks to tilt and create the dip in layers that we see along the coast today. Using the playdough, ask the children to explore how different rock layers might respond to different pressures. Can they make their own Lulworth Crumple?

## **Extensions and Adaptations**

The theory of plate tectonics explains how the tilted the rocks along the Jurassic Coast showcase a near complete record of the Mesozoic. In 1912, Alfred Wegener proposed the theory of continental drift. His idea was that the Earth's continents were once joined together, but gradually moved apart over millions of years. It offered an explanation of the existence of similar fossils and rocks on continents that are far apart from each other. But it took a long time for the idea to become accepted by other scientists and it was not until 1950's that evidence began to emerge to support his theory. Ask the children to explore the process by which scientific ideas become accepted theories. From an idea inspired by an observation, what is the process by which that theory then becomes generally accepted?

## **Links to Other Resources**

Make a Model of the Jurassic Coast links well to the following resources:

- [Rock Detectives](#)
- [How do Fossils Form?](#)
- [Jurassic Coast Timeline](#)
- [What is the Jurassic Coast?](#)
- [What Makes the Best Building Stone?](#)