

Karst Landscapes | A1 Sample answer

The Formation of a Cave

Limestone is a sedimentary rock. It is laid down in layers called strata which are separated by bedding planes. It is a permeable rock which means that it allows water to flow through it. Carbonation is a process which occurs when rain mixes with the carbon dioxide in the air to form a weak carbonic acid. This erodes the calcium in the limestone. This is a form of chemical weathering. A limestone pavement is a unique landscape with ‘clints and grikes’. A cave is an underground feature of a karst landscape. A cave is an underground passage that acts as a channel for water flowing through a swallow hole. As the water flows through it dissolves the limestone to form cavities which enlarge and join together to form a cave. As the caves get bigger the water begins to flow more quickly and erodes the limestone by hydraulic action and abrasion.

Most caves are formed below the water table. When the water table drops new caves are formed and the caves above dry out. Fast flowing water forms single channel caves such as the Aillwee caves in Co. Clare. If the water moves more slowly, it will form a maze of case such as Cloyne in Co. Cork. Dripstone features, are features of a cave which are formed when the water evaporates depositing calcite. This builds up to form stalactites, stalagmites and pillars. A stalactite is an icicle like shape which hangs from the ceiling. It is formed when the water evaporates depositing calcite. This builds up to form an icicle-like shape. A stalagmite is formed in the same way as a stalactite only it is built up from the ground. It also has an icicle like shape. Pillars are formed when a stalagmite and a stalactite join together. When the water runs down the wall calcite is deposited in the same way as the stalactite and stalagmite to form a ridge which joins to form sheet of calcite called a curtain. Calcite formations can be seen at the Aillwee caves.