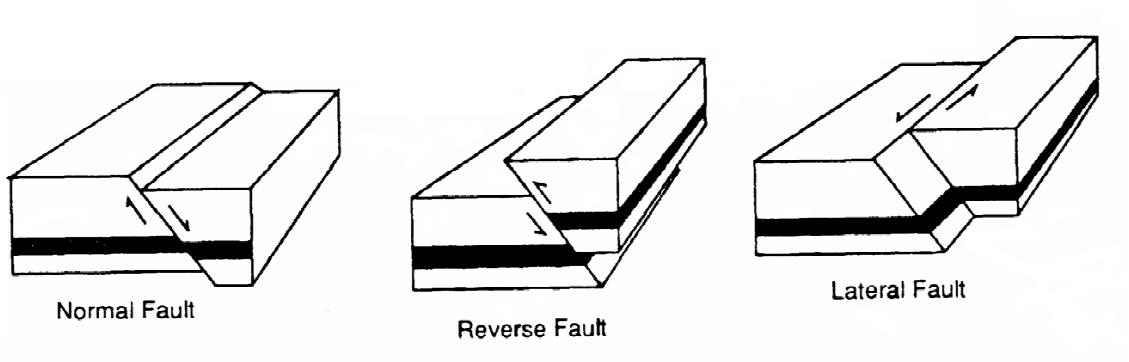
AUSTIN CHALK

The Austin Chalk is a limestone formation composed almost entirely of fossils, especially coccolothophores. It ranges in age from about 89 to 85 million years old. Its lower boundary with the Eagle Ford Shale is at a condensed zone, characterized by very reduced sedimentation rates and abundant phosphate nodules. The Austin Chalk is a sequence of chalk and marl beds with some volcanic ashes that have been altered to the clay bentonite. Pyrite nodules and the thick-shelled clam *Inoceramus* are common.

The Austin Chalk is cut by a number of faults, or breaks in the rocks along which movement occurred. The direction of movement is determined by the forces acting on the rocks, so the structure of a fault will reflect the forces that made it occur.

There are two walls of rock intimately related to a fault, one on either side of the break. One wall, the hanging wall, lies above the plane of the fault; the foot wall lies below the plane of the fault.

The sense of movement on the fault can be determined by the relationship of the hanging wall to the foot wall. A normal fault is a fault in which the hanging wall moves downward relative to the footwall. Normal faults result from tensional forces. In a reverse fault, the hanging wall moves up relative to the foot wall. Reverse faults result from compressional forces. In lateral (strike slip) faults, the walls move laterally relative to each other.



Bear in mind that we are looking at individual faults in the Austin Chalk. However, with your knowledge of faults and of plate boundaries, which kind of fault would you expect to see most often in convergent plate boundaries? Why? In divergent plate boundaries? Why?