Structural geology focuses on secondary tectonic structures like folds and faults in sedimentary layers. Geologists map these structures, measure orientations, and analyze data to understand larger-scale processes. This is closely linked to tectonics and plate tectonics, as plate motions create these structures. For example, extensional faults (normal faults) occur during crustal stretching, while reverse and thrust faults form during shortening. The Keystone Thrust in Red Rock Canyon, Nevada, illustrates how older Cambrian rocks lie atop younger Jurassic rocks due to thrust faulting, indicating crustal shortening during the Sevier orogeny. Experiments, like shortening wet plaster, visually demonstrate fault formation and development, showing fault sequences and imbricate structures. Normal faults, indicative of extension, are observable in Arches National Park, Utah, where displacement is relayed between faults creating relay ramps and zones. Different deformation styles exist depending on depth and temperature. Ductile deformation, like that seen in elongated pebbles in Portugal ("chocolate-bage" structure), occurs at greater depths and higher temperatures. Folds in gneiss, requiring temperatures above 350°, indicate depths of 12-15km. Structural geologists use structural data to infer tectonic history. Convergent plate boundaries typically result in reverse faults, thrusts, folds, and mountain ranges, while divergent boundaries and continental breakup produce normal faults and extensional shear zones. Analyzing structures often requires extensive fieldwork, modeling, and data collection to fully understand the tectonic processes involved.