







Geologic Time Table

EON	ERA	PERIOD	EPOCH	DESCRIPTION	MILLION YEARS PAST		
PHANEROZOIC	CENOZOIC	QUATERNARY	HOLOCENE	 <p>Glaciers moved into northeast Kansas at least twice, leaving behind red quartzite boulders and powdery silt called loess. Later the climate was dry. Sand dunes formed by wind in the west. Volcanic ash was blown in from California, New Mexico, and Wyoming. Fossils of Ice Age mammals found.</p>	23		
			PLEISTOCENE				
		NEOGENE	PLIOCENE				
			MIOCENE				
		PALEOGENE	OLIGOCENE			 <p>Western third of the state covered by sand, gravel, silt, and "mortar beds" of the Ogallala Formation, which contains large quantities of ground water. No rocks deposited in eastern Kansas.</p>	66
			EOCENE				
	PALEOCENE						
	MESOZOIC	CRETACEOUS	 <p>Much of western Kansas covered by seas. Dakota Formation sandstones, "Fencepost" limestone (characterized by clam fossils), and Niobrara chalk (source of large, vertebrate marine fossils) deposited. Volcano-like kimberlites explode to surface in eastern Kansas.</p>	146			
					JURASSIC	Deposited in subsurface of western one-fifth of the state. Terrestrial (nonmarine) deposits mainly shale and sandstone.	200
					TRIASSIC	Found only in extreme southwestern Kansas, mostly in subsurface. Crops out at Point of Rocks, Morton County. Red sandstones and conglomerates, terrestrial deposits (nonmarine).	251
	PALEOZOIC	PERMIAN	 <p>Shallow seas deposited limestone, shale, and chert that form Flint Hills in eastern Kansas. Invertebrate fossils common. Later, shale, siltstone, sandstone, dolomite, and gypsum—rocks that form the Red Hills in south-central Kansas—were deposited. Salt deposited, now mined in central Kansas. Subsurface rocks produce considerable oil, natural gas.</p>	299			
					CARBONIFEROUS	PENNSYLVANIAN subperiod	Shallow seas, swamps, and river channels deposited shale, limestone, sandstone, chert, conglomerates, and coal found at the surface in eastern Kansas. Invertebrate fossils common. Two ridges of hills, the Nemaha uplift and the Central Kansas uplift, appeared; both now buried. Subsurface rocks source of oil.
		MISSISSIPPIAN subperiod	Repeated layers of limestone, shale, and sandstone deposited in shallow seas, river channels. Outcrops in southeastern Kansas are oldest rocks at the surface of Kansas; elsewhere underground only. Once mined for lead and zinc in southeastern Kansas. Subsurface deposits source of large amounts of oil. Invertebrate fossils common.	359			
		DEVONIAN	 <p>Seas covered Kansas during much of the period. Limestone, shale, and sandstone deposits are underground only.</p>	416			
		SILURIAN	Seas covered Kansas, then the land was uplifted and seas disappeared. Limestone deposits are found only in the subsurface.	444			
		ORDOVICIAN	Seas covered parts of Kansas during much of the period. Dolomite and sandstone are underground only. Source of approximately one-third of oil produced in state.	488			
		CAMBRIAN	 <p>Early, the climate was dry and many rocks eroded. Later, parts of Kansas were covered by seas, depositing dolomite, sandstone, limestone, and shales now in the subsurface.</p>	542			
		PROTEROZOIC	Ancient rocks, mostly igneous and metamorphic, that lie beneath younger sedimentary deposits. Rift in the midcontinent, now in the subsurface of east-central Kansas, began, then stopped, about one billion years ago.			2,500	
	ARCHEAN				4,600?		

REFERENCE: A Geologic Time Scale, 2004, by F. M. Gradstein, J. G. Ogg, and A. Smith, Cambridge University Press