

Phoenix College
Physical Science Department

KARTCHNER CAVERN FIELD TRIP

I T I N E R A R Y			
START	FINISH	MILES	HOURS
Phoenix College	Kartchner Cavern State Park	169 miles	3 hrs
<ul style="list-style-type: none"> • Rest Stop 			15 mins
<ul style="list-style-type: none"> • Lunch 			30 mins
<ul style="list-style-type: none"> • Museum 			1 hr
<ul style="list-style-type: none"> • Tour (Fee and reservations required) 			1 hrs 30 mins
Kartchner Cavern State Park	Phoenix College	169 miles	3 hrs
<ul style="list-style-type: none"> • Rest Stop 			15 mins
TOTAL:		338 miles	9 hrs 30 mins

T R A V E L D I R E C T I O N S		
FROM	TO	DIRECTIONS
Phoenix College	Kartchner Cavern State Park	Head east on Thomas Road
		Turn right onto 7 th Avenue
		Turn left onto I-10 south towards Tucson
		Travel approximately 170 miles south on I-10
		Take Exit 302
		Turn right onto AZ-90 south, towards Fort Huachuca/Sierra Vista
		Travel approximately 9 miles
		Turn right at entrance to Karchner Caverns State Park
Kartchner Cavern State Park	Phoenix College	Return to AZ-90
		Turn left and travel approximately 9 miles north
		Turn left onto I-10 north towards Tucson
		Travel approximately 170 miles
		Turn right onto 7 th Avenue
		Turn left onto Thomas Road
		Continue to Phoenix College

G E O L O G I C F E A T U R E S

LOCATION	FEATURE	DESCRIPTION
BASIN & RANGE		Tensional tectonic forces ~ 30 million years ago, created normal faults which resulted in mountain ranges separated by wide valleys.
Phoenix Area	Salt River	Tributary of the Gila River; Salt River water is diverted into canals (and sent to wastewater treatment plants which supply drinking water to the Phoenix area) at the Granite Reef Diversion dam near the confluence of the Salt and Verde rivers (the Verde River is a tributary of the Salt River); the normally dry Salt River channel is being reclaimed through the Rio Salado Project (created by an architectural class at ASU), there is a demonstration park located where Central Avenue crosses the Salt River.
	South Mountain	Metamorphic Core Complex
	San Tan Mountains	Earth fissures caused by overpumping of groundwater
	Gila River	Tributary of the Colorado River
Eloy Area	Santa Cruz River	
	Earth fissures	Earth fissures are associated with basin subsidence that accompanies extensive ground water pumping. As groundwater tables lower, aquifer sediments undergo compaction. If compaction is great enough, the ground surface sinks. In the Luke basin, immediately west of Phoenix, the land had subsided about 18 feet by 1992. In the Picacho basin near Eloy, land subsided more than 15 feet by the early 1980s. Earth fissures have developed around the margins of most Arizona basins where the land has subsided more than a few feet. Fissures were first noted near Eloy in 1929. Their physical appearance varies greatly, but they may be more than a mile in length, up to 15 ft wide, and 100s of feet deep. During torrential rains they erode rapidly presenting a substantial hazard to people and infrastructure. Moreover, fissures provide a ready conduit to deliver runoff and contaminated waters to basin aquifers. Rapid population growth in southern Arizona is increasingly juxtaposing population centers and fissures.

G E O L O G I C F E A T U R E S

LOCATION	FEATURE	DESCRIPTION
	Picacho Peak	Faulted and tilted lava flows, top is big block of granite ripped from the walls of the volcanic conduit from which the lava erupted; site of the most western battle of the Civil War
	Silver Bell Mine	Tributary of the Gila River
Tucson Area	Santa Catalina Mountains	Metamorphic Core Complex and granite
	Saguaro National Monument	
	Sonoran Desert Museum	
	Rincon Mountains	Metamorphic Core Complex
	Colossal Cave	Karst topography
Just east of Benson	Texas Canyon	Spheroidal weathered granite
Just south of Benson	Kartchner Caverns	<p>Karst topography. A shallow inland sea covered this area of Arizona 330 million years ago, depositing layers of sediment that eventually hardened into limestone. Millions of years later this Escabrosa limestone along with other rock layers uplifted to form the Whetstone Mountains. The Escabrosa limestone, due to a type of tremor or fault, down-dropped thousands of feet relative to the mountains above.</p> <p>Rainwater, made slightly acidic by absorbing carbon dioxide from the air and soil, penetrated cracks in the down-dropped limestone block and slowly dissolved passages in it. Later, lowering groundwater levels left behind vast, air-filled rooms. Kartchner Caverns' wide variety of decorations, called "speleothems," began forming drop by drop over the next 200,000 years.</p> <p>Water seeping from the surface dissolves minerals on its trip through the limestone. Once it reaches the cave, the trapped carbon dioxide escapes from the water. No longer able to hold the dissolved calcite, the drop deposits its tiny mineral load. Over time, these minerals have created the beautiful speleothems and variety of colors found in the cave. Kartchner Caverns is a "living" cave; the formations are still growing!</p>

Kartchner Caverns State Park			
PARK ENTRANCE FEES:	Per vehicle (1-4 adults):		Individual/Bicycle:
	\$6.00		\$3.00
Note: Entrance fee waived for reserved tour ticket holders			
CAVE TOUR PRICES:			
Cavern Tour	Adults 14+	Youth 7-13	Children under 7
Rotunda/Throne Tour	\$22.95	\$12.95	FREE
Big Room Tour	\$22.95	\$12.95	N/A
Rebooking Fee	\$5.00		
Note: Big Room Tours are only available from mid-October to mid-April and are not available for children under 7 years of age.			