

Phoenix College
Physical Science Department

MONTEZUMA WELL, JEROME, TONTO NATURAL BRIDGE FIELD TRIP

I T I N E R A R Y			
START	FINISH	MILES	HOURS
Phoenix College	Montezuma's Well	97.2	2 hrs
<ul style="list-style-type: none"> • Montezuma's Well 			1 hr
Montezuma's Well	Jerome	28.2	1 hr
<ul style="list-style-type: none"> • Gasoline stop (Camp Verde) 			15 min
<ul style="list-style-type: none"> • Audrey Headframe 			30 min
<ul style="list-style-type: none"> • Lunch (Jerome City Park) 			45 min
Jerome	Tonto Natural Bridge	74	2 hr
<ul style="list-style-type: none"> • Tonto Natural Bridge (Fee required) 			1 hr
Tonto Natural Bridge	Phoenix College	104	2 hrs
TOTAL:		304	10 hrs 30 min

T R A V E L D I R E C T I O N S		
FROM	TO	DIRECTIONS
Phoenix College	Montezuma's Well	Head west on Thomas Road
		Merge onto I-17 N and travel north towards Flagstaff
		Take Exit 252 for Sunset Point Rest Area (STOP)
		Continue north on I-17
		Take Exit 293 at Mcquireville
		Take East Beaver Creek to Montezuma's Well (STOP)
Montezuma's Well	Jerome	Return to I-17, travel south,
		Take Exit 287 at Camp Verde,
		Take Hwy 260 north towards Cottonwood,
		Turn left on 89A south to Jerome.
		Turn right on Douglas Rd towards Jerome State Park Continue to Audrey Headframe exhibit (STOP)
Jerome	Tonto Natural Bridge	Return to Camp Verde
		Continue south on Hwy 260 and head east of Camp Verde
		Turn right onto Hwy 87 and travel south towards Pine
		After passing Pine continue on Hwy 87
		Turn right onto entrance road to Tonto Natural Bridge.
		Continue to Tonto Natural Bridge State Park (STOP)
Tonto Natural Bridge	Phoenix College	Return to Hwy 87, turn right towards Payson
		Continue south on Hwy 87 towards Phoenix
		Turn left onto Hwy 202
		Continue onto I-10 west
		Take 7 th Avenue exit
		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.
Milepost 231, I-17	New River terraces	Uplift causing rise in base level causing the river to erode downwards forming terraces.
Milepost 236, I-17	Lake deposits	Light fine-grained layers in road cuts
Milepost 243, I-17, looking north as you pass Table Mesa Road exit	Black Canyon City landslide	Occurred ~late 1970's – early 1980's.
Milepost 245, I-17, looking to the right	Black Canyon City landslide, cross-section view	
Along highway north of Black Canyon City as you climb highway incline	Mass wasting prevention techniques	Fences, and metal mesh
Milepost 249, I-17	Lava flows	Several lava flows can be seen, reddish coloring in between two lava flows
East of Sunset Point rest stop	Joe Green's Hill	Vent area for the basalt flows that make-up this mesa ("example" of what a shield volcano looks like)
Milepost 259, I-17	Spheroidal weathering	Weathering of granitic rocks
CENTRAL HIGHLANDS		Also referred to as the Transition Zone, mountains separated by narrow valleys.
Milepost 262, I-17, left road cut, just south of Cordes Junction	Dike	Igneous intrusion into country rock.
Just north of Cordes Junction	Arcosanti	Started in 1970, Arcosanti is an experimental town being created and designed according to the concept of <u>arcology</u> (architecture + ecology), developed by Italian architect <u>Paolo Soleri</u> .
	Black Hills	
Milepost 285, I-17	Verde Valley	Valley caused by uplift of the Black Hills along the Verde Fault to the south and the Colorado Plateau to the north. Blockage of the valley created a lake that deposited layers of sediment that can be seen on the floor of the valley
	Lake sediments	Light fine-grained layers in road cuts
Milepost 292, I-17, left road cut	Sinkhole	Karst topography
	Montezuma's Well	Sink hole and travertine deposits, ruins
	Clarkdale AZ	Town was built to house the miners working in the Jerome mines, named after the owner of the mines in Jerome.
At base of mountain	Cement Plant	Lake deposits are mined to produce the lime

beneath City of Jerome		(calcium carbonate, CaCO ₃) used in the production of cement used in making concrete.
	Jerome	Copper deposits, island arc environment that collided with North American tectonic plate.
	Audrey Headframe	Mining equipment associated with deep mine shaft.
COLORADO PLATEAU		This part of Arizona was uplifted approximately 3 miles forming the Colorado Plateau. This uplift is what enabled the Colorado River to erode the Grand Canyon.
	Mogollon Rim	Edge of the Colorado Plateau
	Ramp Basalts	Highway 17 travels north from the Verde Valley up the edge of the Colorado Plateau. Unlike the edge of the plateau north of Payson (i.e. Mogollon Rim) this is a gentle rise. The rise was created when basalt flows on the Colorado Plateau flowed over the edge creating a ramp of basalt.
	San Francisco Peaks	Composite volcano that erupted ~ 1 million years ago. A collapse of the volcano into the magma chamber below or an eruption that went laterally created the San Francisco Peaks.
CENTRAL HIGHLANDS		
	Tonto Natural Bridge	Travertine deposits
Route 87, Milepost 258, just south of East Verde Estates Road, left side	Great Unconformity	The contact between the Tapeats Sandstone (Cambrian, 524 mya) and the Zoroaster Granite (Pre-Cambrian, 1,400 – 1,700 mya). Over 1 billion years is missing from the geologic record.
	Mass wasting prevention techniques	Drainage, reducing slopes, vegetation, concrete covers.
Milepost 205, Hwy 87	Spheroidal weathering	Weathering of granitic rocks
Milepost 204, Hwy 87	Four Peaks	Roof pendants in magma chamber, amethyst mines
BASIN & RANGE		Tensional tectonic forces ~ 30 million years ago, created normal faults which resulted in mountain ranges separated by wide valleys.
Milepost 202, Hwy 87	Superstition Mountains	Caldera eruption, ash deposits
	Salt River terraces	Uplift causing rise in base level causing the river to erode downwards forming the Stewart Mountain, Sawik, Mesa, Blue Point and Lehi terraces (oldest to youngest).