

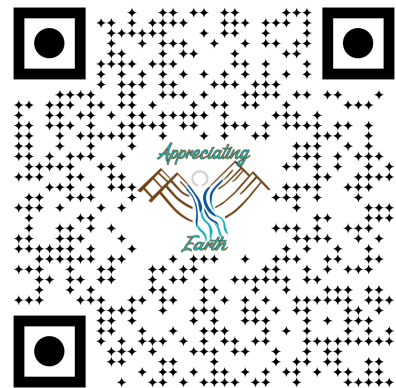
Geologic Evaluation of North America

With a Focus on the National Parks

*Spring 2026 with
Nicole Myers
OLLI Week 1*

Geologic Time Scale							
EON	ERA	PERIOD		EPOCH			
Phanerozoic	Cenozoic	Quaternary		Holocene	Present		
				Pleistocene	0.01		
		Tertiary	Neogene	Pliocene	2.6		
				Miocene	5.3		
			Paleogene	Oligocene	23.0		
				Eocene	33.9		
				Paleocene	55.8		
					65.5		
			Mesozoic	Cretaceous			65.5
				Jurassic			145.5
		Triassic			199.6		
	Paleozoic	Permian			251		
		Carboniferous	Pennsylvanian			299	
			Mississippian			318	
						359.2	
		Devonian			359.2		
		Silurian			416		
		Ordovician			443.7		
		Cambrian			488.3		
		Precambrian	Proterozoic				542
	Archean				2500		
	Hadean				4000		

Digital presentations associated with the course & handouts will be available at:
<https://www.appreciatingearth.com/olli>



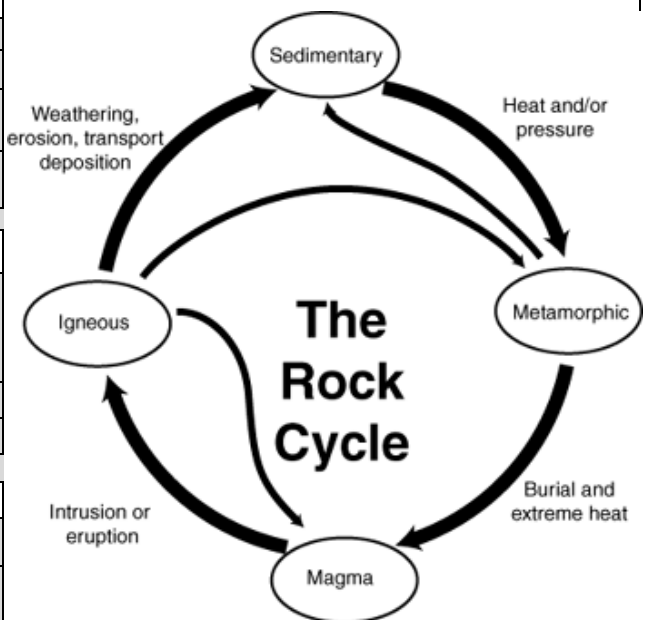
Simplified Geologic Time Scale

Simplified Geologic Time Scale from: Spooner, Alecia M. "The Geologic Timescale." *Dummies*. A Wiley Brand.

<https://www.dummies.com/education/science/the-geologic-timescale/>

Rock Names Chart

ROCKS									
Igneous	Classification	Felsic		Intermediate	Mafic		Textures	Volcanic Features/ Products	
	Color	Light		Black & White	Dark				
	Extrusive	Rhyolite	Dacite	Andesite	Basalt		Aphanitic/ Porphyritic/Vesicular/Gl assy	Obsidian, Pumice, Volcanic Ash, Pyroclasts, Tephra	
	Intrusive	Granite	Granodiorite	Diorite	Gabbro	Peridotite	Phaneritic/ Pegmatitic	Plutons/Batholith	
	Minerals	quartz, potassium feldspar, biotite, muscovite		potassium feldspar, plagioclase	plagioclase feldspar, pyroxene, olivine				
	Eruptive Location	continental		continental & oceanic	continental & oceanic				
Metamorphic	Change minerals with increasing temperature & pressure →								
	Parent Rock		Metamorphic Rocks				Minerals & Metamorphic Province		
	shale	→	slate	phyllite	schist	gneiss	(minerals = micas, garnet, etc.)		
	sandstone	→	quartzite				(minerals = quartz + feldspar + mica)		
	limestone	→	marble				(mineral = calcite)		
	basalt	→	greenschist	amphibolite	granulite		(in mountain building metamorphism)		
	basalt	→	blueschist		eclogite		(in subduction metamorphism)		
Sedimentary	Formed on the surface of the Earth								
	Classification	Sediment		Sedimentary Rock					
	CLASTIC (sediment glued together)	Mud		Shale					
		Silt		Siltstone					
		Sand		Sandstone, graywacke, arkose					
		Cobbles/ Pebbles		Conglomerate (rounded), Breccia (angular)					
	Classification	Mineral		Sedimentary Rock					
	CHEMICAL (minerals precipitate from water)	Silica		chert					
		Halite		rock salt					
		gypsum		gypsum					
Classification	Biological Material		Sedimentary Rock						
BIOGENIC (of biological origin)	calcareous skeletal		limestone						
	decomposed plant materials		coal/ oil						



Simplified Rock Cycle

Rock Cycle: <https://www.geol.umd.edu/~jmerck/honr219d/notes/02.html>

US National Park Map

All 63 National Parks: <https://morethanjustparks.com/list-of-national-parks-by-state/>



National Park Service:

- Find a Park: <https://www.nps.gov/findapark/index.htm>
- Interactive Map: <https://www.nps.gov/planyourvisit/maps.htm>