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Mission: Raven Hill provides a place that enhances hands-on and lifelong learning for all ages by connecting science, history & the arts.

Michigan geologic time scale

This activity gives a time frame for the formation of earth from the time the solar system formed to now. It shows us how “new” plants and animals really are compared to the formation of the earth. Cards with pictures of plants & animals can be placed on the string timeline according to when those plants or animals lived in the past. You will need string, a ruler or measuring tape, tape or address labels, paper or index cards, colored pencils or markers, paper clips, and find your dinosaur books, etc. for pictures to copy. You can also search on the internet. You can research when different plants and animals appeared on earth. You might need to work with someone to measure out the string and make your timeline to begin with. First, measure out 9 feet of string, plus another 2 foot (11 feet total). Mark the beginning (0) end of string with a piece of tape that says “earth forms”. Now measure 1½ feet from the beginning end and mark that point with a piece of tape that says “water from steam”. Measure 7 ½ feet from the beginning end and mark that with a piece of tape that says “glaciers”. Measure 8 feet from the beginning end and mark that with a piece of tape that says “shallow ocean”. Measure 8½ feet from the beginning end and mark that with a piece of tape that says “coal swamps”. Measure 8’11” from the beginning of the string and mark with tape that says “shallow ocean” again. Measure 9 feet from the beginning end of the string and mark with tape that says “man appears”. Fasten the 9-foot string across the room or along a wall and let the last two feet hang down to represent the timeline of man on earth. The very end of the string is today! Find & draw small pictures of different plants & animals from the past and present. Attach the pictures at appropriate spots on your timeline with paperclips or tape. Two charts can be found on the website and will help with placement of pictures or find a geologic timeline online! Keep adding pictures that you draw. Draw or use a picture of yourself to add to the very end of the 2-foot string that represents the timeline of man. You can come back to this project and work on it again and again, adding more pictures of plants & animals. Notice how they are all clustered at the end of the timeline! This timeline shows how old the earth is and even though water formed billions of years ago, living things have not been here on earth for very long. Put everything away, when you are done working.

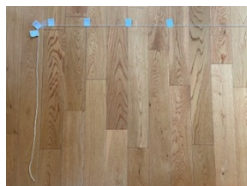
Million years ago	Marker points	~Measurements	Event	Land	Water
4,500,000,000	4.5	Beginning end of string	Earth forms	None	None
3,800,000,000	3.8	1 ½ feet	Water on earth	Bacteria	Bluegreen algae
750,000,000	.75	7 ½ feet	Glaciers here	Worms	Jellyfish
450,000,000	.45	8 feet	Shallow ocean	First plants	First fish
300,000,000	.30	8 ½ feet	Coal swamps	Ferns & insects	Crocodiles, corals
50,000,000	.05	8 feet 11 inches	Shallow ocean	Pines, dawn horses (14”)	Whales, sharks
1,000,000	.001	9 feet	Ice ages	Grasses, man, mammoth	Not many--cold
		2 feet hanging down	Modern times	History of man from appearance to today (bottom of string)	



1 Gather supplies



2 Make string timeline



3 Add time markers



4 Add pictures



5 Close-up view

Beyond Jurassic Park: Exploring Michigan's Geologic History

Millions of Years Ago (MYA)	Period / Epoch	Events	Plants	Animals	Geology
4500	Precambrian	Earth formed / Volcanoes	None	None	Obsidian Agate
3800	Precambrian	Water formed	Bacteria	Bacteria	
750	Precambrian	Glaciers		Worms, Jellyfish	Fossilized glacial debris
500	Cambrian		Filimentous algae		
450	Ordovician	Shallow Ocean	First land plants—liverworts, mosses, hornworts, ferns	Corals, Trilobites Primitive Fish	Petoskey and other corals in shale and limestone
400	Silurian	Barrier reefs – salt deposits	Cooksonia	Spiders (380mya) early land animal	
350	Devonian	Shallow Ocean		Bony plated fish and shark-like fish Limula—horseshoe crab Lobe finned fish (amphibians)	
300	Carboniferous Pennsylvanian Mississippian	Coal forming swamps	Equisetum, Lycopodium, Fern Trees	Insects, Dragonfly, Crinoids, First Reptiles, amphibians	Coal
250	Permian	Pangea forms	Conifers, Cycads	Dragonfly, Mammal like Reptiles	
200	Triassic	Pangea breaking up	Cycads, Conifers, Ginkgoes	Crickets, Squid, Primitive Mammals, First Dinosaurs	
150	Jurassic	Continental Drift	Conifers, Cycads Flowering plants	Ammonites, Crabs Urchins, Dinosaurs, First Birds	
100	Cretaceous		Flowering Plants; Dawn Redwood	Archelon—leatherback turtle (Kansas) Dinosaurs gone	
50	Paleocene Eocene Oligocene		Grasses, Maples, Walnut, Pines, palms, figs, laurels, avacado,	Horses, Whales, Sharks, Rabbits, Bats	Shark's tooth
1	Miocene Pliocene Pleistocene	Earliest humans Ice Ages--Great Lakes	Grasses, Sumac, Alder, maple, poplar	Man, Frogs, Mammoths, Mastodons, Elephants, Sabre-tooth	Canadian Granite
10,000 yrs ago	Holocene	Ice age ends			