



Science Virtual Learning

7th Grade Science

Geologic Time Scale

May 11, 2020



7th Grade Science Lesson: Geologic Time

Objective/Learning Target:

I can explain how geologic time scale can help identify what organism lived in a time period and species evolution over time.

Warmup

Using what you remember from your learning complete the geological vs. chronological time.

1. From memory use the words in the box below in order to complete a definition of Chronological time.

day
time
history
archean
eon
Geologic time

_____ : the extensive interval of
_____ occupied by the geologic
_____ of Earth. Formal geologic
time begins at the start of the
_____ (4.0 billion to 2.5
billion years ago) and continues to the
present _____.



Answer:

Geologic time, the extensive interval of time occupied by the geologic history of Earth. Formal geologic time begins at the start of the Archean Eon (4.0 billion to 2.5 billion years ago) and continues to the present day.

What is a Geologic Time Scale?

- Write these on your own sheet of paper!
- The Geologic time scale is a record of the life forms and geological events in Earth's history.
- The geologic time scale was developed by scientist that study rock layers and fossils.
- Each time can be broken from large amounts of time to smaller amounts of time.
- Eons are the largest and can be broken down into Eras. Eras are in the middle and can be broken down into Periods. Periods can then be broke down into Epochs.

EON	ERA	PERIOD	EPOCH	Ma		
Phanerozoic	Cenozoic	Quaternary	Holocene		0.011	
			Pleistocene	Late	0.8	
		Early		2.4		
		Late		3.6		
		Tertiary	Neogene	Pliocene	Early	5.3
					Late	11.2
				Miocene	Middle	16.4
			Early		23.0	
			Late		28.5	
			Paleogene	Oligocene	Late	34.0
		Early			41.3	
		Eocene		Middle	49.0	
				Late	55.8	
		Paleocene	Late	61.0		
	Early		65.5			
	Mesozoic		Cretaceous	Late	99.6	
		Early		145		
		Late		161		
		Jurassic	Middle	176		
			Early	200		
		Triassic	Late	228		
			Middle	245		
			Early	251		
		Paleozoic	Permian	Late	260	
				Middle	271	
	Early			299		
	Pennsylvanian		Late	306		
Middle			311			
Mississippian	Early		318			
	Late		326			
	Middle		345			
Devonian	Early		359			
	Late		385			
	Middle		397			
	Early		416			
Silurian	Late		419			
	Early	423				
Ordovician	Late	428				
	Middle	444				
	Early	488				
Cambrian	Late	501				
	Middle	513				
	Early	542				
Precambrian	Proterozoic	Late	Neoproterozoic (Z)	1000		
		Middle	Mesoproterozoic (Y)	1600		
		Early	Paleoproterozoic (X)	2500		
	Archean	Late		3200		
		Early		4000		
Hayden						

Let's Begin

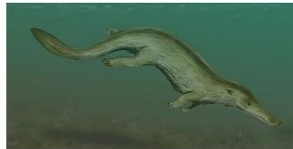
Read the following [article](#) on the prehistoric timeline and watch the video that is attached at the end of the reading. Be prepared to answer a few questions over this information.



Pakicetus
(cca 49-48 Ma)



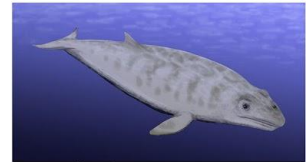
Ambulocetus
(cca 50-48 Ma)



Kutchicetus
(cca 48 Ma)



Protocetus
(cca 45 Ma)



Janjucetus (Mysticeti)
(cca 25 Ma)



Squalodon (Odontoceti)
(cca 33-14 Ma)

Answer these Questions

1. What era did dinosaurs dominate the earth in?
2. In what era did humans appear in?
3. What animals today do scientist believe dinosaurs share common traits with?
4. What do fossils tell us about prehistoric animals?
5. List some similarities dinosaurs had to current animals.



1. Mesozoic Era
2. Cenozoic Era
3. Birds and Reptiles
4. Fossils tell us about what organisms lived on earth during a certain time and how certain species evolved over time.
5. Layed eggs, traveled in herds, nesting habits (answers can vary)



































1. Compare and contrast Era's with their major events.

Activity

2. Review these Era based events (they are out of order).

3. On your sheet of paper, write the major developments (from step 2.) In the appropriate area below.

Eon	Era	Period	Epoch	Ma*	Events		
Phanerozoic	Cenozoic	Quaternary	Holocene		0.01	evolution of humans 	
			Pleistocene	Late	1.8		
				Early	1.8		
			Tertiary	Neogene	Pliocene	Late	5.3
		Miocene			Early	5.3	
					Middle	23.7	
		Paleogene		Oligocene	Late	23.7	
					Early	33.7	
				Eocene	Late	33.7	
		Middle	54.8				
		Mesozoic	Cretaceous	Late	Early	65.0	extinction of dinosaurs first primates 
						144	
				Jurassic	Late	144	first birds 
					Early	206	
	Triassic		Late	248	dinosaurs diversify 		
			Early	248			
	Paleozoic		Permian	Late	290	first reptiles 	
				Early	290		
			Pennsylvanian	Mississippian	Late	354	first trees 
					Early	354	
		Devonian	Late	417	first amphibians 		
			Early	417			
	Silurian	Late	443	first vascular land plants 			
		Early	443				
Ordovician	Late	490	sudden diversification of metazoan families 				
	Early	490					
Cambrian	Late	543	first fishes first chordates 				
	Early	543					
Precambrian	Proterozoic	Late	900	first soft-bodied metazoans 			
		Middle	1600				
		Early	2500				
	Archean	Late	3000	first animal traces 			
		Early	3800?				

*Millions Years Ago

- One celled organisms
- Earliest part of earth's history
- Bacteria
- Jellyfish

- Current Era
- Development of large animal and humans.
- Periods of ice ages played a role in geological features seen today.

- Forming of supercontinent pangea
- Life developed rapidly: marine animals, plants, fish, and amphibians.

- Increase in complex life forms like dinosaurs, small mammals, birds, conifers, & flowering plants.
- The rocks in the petrified forest in Arizona are deposited during this time.
- Mass extinction at the end of the Era.

Era: a major division of geologic time composed of a number of periods.

Era	Major Developments (events)
Cenozoic	
Mesozoic	
Paleozoic	
Precambrian	

Activity continued:

Answers:

Era	Major Developments (events)
Cenozoic	<ul style="list-style-type: none"> • Current Era • Development of large animal and humans. • Periods of ice ages played a role in geological features seen today.
Mesozoic	<ul style="list-style-type: none"> • Increase in complex life forms like dinosaurs, small mammals, birds, conifers, & flowering plants. • The rocks in the petrified forest in Arizona are deposited during this time. • Mass extinction at the end of the Era.
Paleozoic	<ul style="list-style-type: none"> • Forming of supercontinent pangea • Life developed rapidly: marine animals, plants, fish, and amphibians.
Precambrian	<ul style="list-style-type: none"> • One celled organisms • Earliest part of earth's history • Bacteria • Jellyfish



Test Your
Learning

Quizziz:
Geological Time