

Name _____

GEOLOGIC TIME SCALE

Directions: Read the information below.

Discovering Earth's History

Have you ever eaten lasagna? If you have, you know that it is made with layers of pasta and fillings. First, there's a layer of pasta, then sauce, then meat, cheese, another layer of pasta and so on. What you probably didn't know is that lasagna and Earth's history have something in common. Over 4.5 billion years ago, Earth was a new planet, much like an empty lasagna pan. Over the years of its history, layers of rock and sediment have accumulated on the surface. Just like when you add ingredients to the pasta dish and the newest ingredients are at the top, Earth's rock strata (or layers of rock) work the same way. The newest layers are on the top. Scientists use this method to determine how long ago certain events happened in Earth's history.

We divide the events in Earth's history using the geologic time scale. This is a chart of the history of earth using incremental measures of time. Let's examine this concept a little more. When we think about a human's age, we can say they are a child or an adult. If they are a child we can be more specific and say they are either a young child, older child, or a teenager. If they are a young child they might be a newborn, infant, or toddler. A newborn might be one week old. Notice how we determine someone's age by using increasingly more specific measures. This is similar to what we do with Earth's history.

An eon is the largest span of time. Earth has only experienced two eons: Precambrian and Phanerozoic (the one we have been in for 542 million years until now). Within the Phanerozoic eon, we have three eras: Paleozoic, Mesozoic, and Cenozoic. The Cenozoic era began about 65 million years ago and continues today. The Cenozoic era is divided further into two periods: Tertiary and Quaternary. We are currently in the Quaternary period, which is made up of two epochs: Pleistocene and Holocene (the epoch we have been in for approximately 11,000 years).

The last Ice Age occurred during the Pleistocene epoch, which began about 1.8 million years ago. Other notable periods of time include the Triassic period, beginning 251 million years ago, when dinosaurs first appeared. If you think that's a long time ago, the first amphibians (ex: frogs), developed in the Devonian period of the Paleozoic era around 416 million years ago. Without being able to understand the layers of rock in the earth and examining the fossils within, we may not have this knowledge to understand just how old our Earth is.

EON

ERA

PERIOD

EPOCH

AGE

Precambrian		
Period	Era	Eon
Ediacaran	Neoproterozoic	Proterozoic
Cryogenian		
Tonian		
Stenian	Mesoproterozoic	
Ectasian	Paleoproterozoic	
Calymmian		
Statherian		
Crosirian	Paleoproterozoic	
Rhyacian		
Siderian		
	Neorarchean	Archean
	Mesoarchean	
	Paleoarchean	
	Eoarchean	Hadean

Paleozoic			
Age	Epoch	Period	
Changhsingian	Lopingian	Permian	
Wuchiapingian			
Capitanian			
Wordian			
Roadian			
Kungurian	Gisuralian		
Artinskian			
Sakmarian			
Asselian			
Gzhelian			Late
Kasimovian	Middle		
Moscovian			
Bashkirian	Early		
Serpukhovian	Late		
Visean	Middle		
Tournaisian	Early		
Famennian	Late	Devonian	
Frasnian	Middle		
Givetian			
Eifelian			
Emsian	Early		
Pragian			
Lochkovian	Pridoli	Silurian	
Ludfordian			Ludlow
Gorstian			
Homerian			Wenlock
Sheinwoodian			
Telychian			Llandovery
Aeronian			
Rhuddanian			
Hirnantian	Late	Ordovician	
Katian			
Sandbian			
Darriwilian			Middle
Dapingian			
Floian	Early		
Tremadocian			
Age 10	Furongian	Cambrian	
Jiangshanian			
Paibian			
Guzhangian	Epoch 3		
Drumian			
Age 5	Epoch 2		
Age 4			
Age 3			
Age 2	Terevenvian		
Fortunian			

Mesozoic			
Age	Epoch	Period	
Maastrichtian	Late	Cretaceous	
Campanian			
Santonian			
Coniacian			
Turonian			
Cenomanian			
Albian	Early		
Aptian			
Barremian			
Hauterivian			
Valanginian			
Berriasian			
Tithonian	Late	Jurassic	
Kimmeridgian			
Oxfordian	Middle		
Callovian			
Bathonian			
Bajocian			
Aalenian			
Toarcian	Early		
Pliensbachian			
Sinemurian	Late		
Hettangian			
Rhaetian	Late	Triassic	
Norian			
Carnian			
Ladinian			Middle
Anisian			
Olenekian			
Induan			

Cenozoic		
Age	Epoch	Period
	Holocene	Quaternary
Calabrian	Pleistocene	
Gelasian		
Piacenzian	Pliocene	Neogene
Zanclean		
Messinian		
Tortonian	Miocene	
Serravallian		
Langhian		
Burdigalian		
Aquitanian	Oligocene	
Chatthian		
Rupelian		
Priabonian		Eocene
Bartonian		
Lutetian	Ypresian	
Ypresian		
Thanetian	Paleocene	
Selandian		
Danian		

