

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

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

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

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

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

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- This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings present.

