

# Geological Time

1. Scientists use geological eras, eons and periods to help organize events that have occurred in the history of the earth. Eras contain eons and eons contain periods. Throughout history, the order of eons, eras and periods has constantly been changed due to new evidence and investigation.

Eon		Eon		
Era		Era		Era
Period	Period	Period	Period	Period

2. Scientists use **relative** and **absolute** dating in order to figure out how old rocks, minerals and fossils are.

**Relative Ddating**- gives us a broad estimate of how old something is in relation to something else. Scientists use the **Law of Superposition** in order to do this. This uses the layers of rocks in the earth to tell us how old something is. Older rocks are usually deeper than younger ones.

For example; If you're a scientist digging for fossils and you uncover a layer of coal on top of a layer of limestone, you can probably assume that the fossils you find in the limestone are older than the fossils in the coal because they were put there earlier (which is why the limestone layer is under the coal layer).

**Absolute Dating**- absolute dating gives us a better estimate of how old something is. Scientists often use different scientific methods to find the absolute date. A few of these include;

**Radiocarbon Dating**- Scientists use this method to test how old **organic** (living) matter is. They know the half-life of Carbon-14 and they observe how much has decayed to tell how old the material is. However, Carbon-14 only has a lifespan of 40,000 years. So anything older than that will not give us a very good idea of how old it is using radiocarbon dating.

**Potassium-Argon Dating**- This method of absolute dating uses the decay of potassium-argon. This form of dating can find out how old things are up to 1.3 billion years. However, this method cannot be used to test organic materials, only **inorganic** (non living, such as rocks and minerals). BUT if you find a fossil within a rock or mineral, scientists can test the rock that contains the fossil to help find an estimate of how old it is.

**For The Posters That are Due Monday (May 12<sup>th</sup>) you need to include;**

1. The name of your era assigned
2. The time period over which this era took place, including what Eon it is contained in and what periods it contains
3. The meaning of the words used for the era

For example; the Eon Hadean means “hell”. Since the Hadean eon was the first eon, “hell” described the conditions of the earth at the time; a desolate, uninhabitable place.

4. The names of your group members
5. **AT LEAST** 2 major biological advancements that took place during that era
6. Should be colorful and contain at least 2 pictures.