

Kansas from Space!
wired.com/2011/03/agriculture-from-space/

Event: Four New Elements Discovered Important Dates:

1950: Start of the "Great Acceleration" of human activity

July 16, 1945: The first atomic bomb is tested in New Mexico.

1610: Lowest CO₂ recorded in polar ice cores in the last 1000 years.

Disease in the Americas wipes out indigenous peoples. Forests regrew, and took CO₂ out of the atmosphere.

Event Description

Geologic time is broken down into Ages (the smallest subdivision), Epochs, Periods, Eras, and Eons (the largest division). Today we are officially in the Phanerozoic Eon, the Cenozoic Era, the Quaternary Period, and the Epoch of the Holocene. Some scientists suggests we have entered the Anthropocene. But should this be a new Age? A new Epoch? Should we recognize the Anthropocene at all? That partially depends on how important we view ourselves as the human race. Divisions in geologic time are divided based on major events in Earth history that are recoded globally in the rock record. The bigger and more important the event, the higher the rank in geologic time. For example, the Cenozoic Era began with the asteroid impact that killed the dinosaurs 66 million years ago. It is indisputable that we are leaving our mark in the rock record as a species, but just how big of a mark is it?

Lesson Description

Students will be given facts about human impacts on the rock record, and then hold a mock debate: Should we instate the Anthropocene as a unit of geologic time?

After a powerpoint on geologic time and the proposal of the Anthropocene, the class will be split into two groups and each will be given a fact sheet. Students will spend a few minutes formulating an argument, either pro- or anti-Anthropocene, and then have a short debate about if Anthropocene should be added to the geologic time scale. Have the students take a vote after the debate! As an optional activity, you could discuss when the Anthropocene should start, which is probably the most controversial part of the Anthropocene proposal.

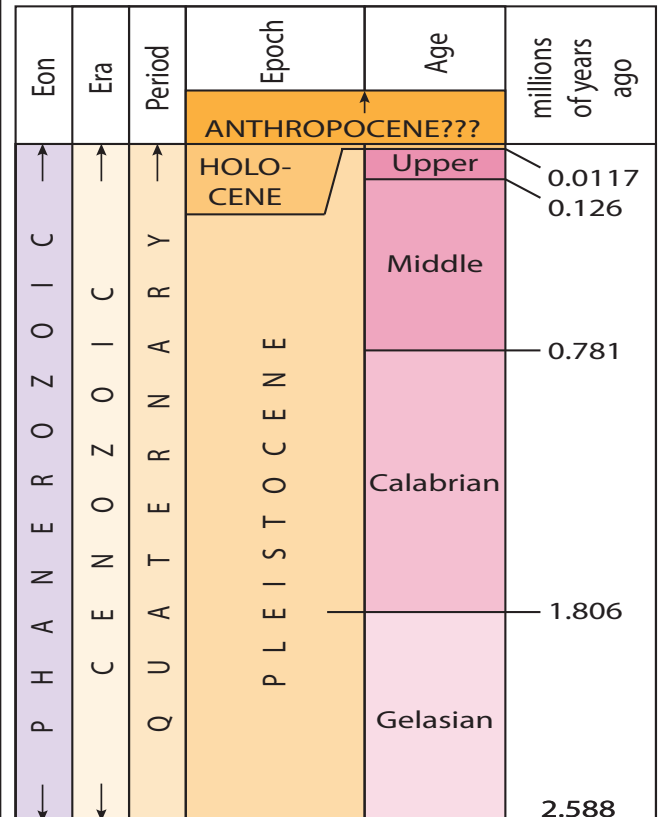
Lesson Materials - download from the SciNews website

- (1) Anthropocene powerpoint:** A brief overview of geologic time and the divisions between different Eras, Periods, etc.
- (2) Pro-Anthropocene fact sheet:** Facts about how we have begun to change the Earth and rock record in the last couple of centuries, supporting that we have entered a new geologic age.
- (3) Anti-Anthropocene fact sheet:** This provides counter-arguments for why creating the Anthropocene could be more confusing than helpful for geologists.

Next Generation Science Standards

MS-ESS1-4: Rock strata and the geologic time scale
MS-EES3-4: Human impact on Earth's systems

www.sites.psu.edu/scinews/



A geologic time scale of the Quaternary Period. We have barely entered the Holocene Epoch. Have we entered the Anthropocene? If so, when? And just how important should it be on the geologic time scale?

Additional Media (see SciNews website for links!)
Powerpoint illustrating why 1950 has been dubbed "The Great Acceleration".

Alternative Lesson Plan: (link provided on the SciNews website)

Check out some great interactive maps to help students visualize the human influence on Earth systems over the last 2000 years.



Created by Michael Hudak & Erin DiMaggio
PSU/NASA Space Grant Fellows

Funded by PSU/NASA Space Grant
<http://pa.spacegrant.org>

To subscribe to the SciNews listserv send a message with your name, affiliation, & email address to scinews@ems.psu.edu