## Instructional Unit Title: Geologic Events through Time

## Science 7<sup>th</sup> Grade

The teacher may provide examples of various time lines (i.e., chronologically, event, interval) so that students can begin to understand that time can be broken down in different ways. The teacher may introduce important events in time (i.e., ice age, mass extinction, impact event, evolution of life) so that students can comprehend how the geologic time scale was created and divided into eons, eras, periods, and epochs.

The teacher may lead a discussion on eons so that students can describe what the Earth was like during each eon and explain what led to the Cambrian explosion. The teacher may lead a discussion around the events that mark the beginning and end of different eras so that students can evaluate the eras in the Phanerozoic eon based on why and how the eras are separated.

The teacher may allow for exploration of various fossils so that students can describe how fossils are formed and identify the different types of fossils.



The teacher may introduce the concept of geologic columns using samples, videos, or photography so that students can interpret and analyze data from the fossil record to support claims that life and the environment on earth has changed over time. The teacher may provide opportunities to explore cross sections of rock so that student can compare and contrast absolute and relative dating and learn to use direct and indirect evidence to interpret the sequence of events in geologic time.

The teacher may use various methods to introduce the Paleozoic and Mesozoic Era so the student can begin to understand that life is complex and developed over time through transformation, originating from the oceans to terrestrial life.

The teacher may lead a Socratic seminar discussing how the past is used to tell a story about the present so that students can model how fossil evidence contributes to understanding of life on Earth over time. **PERFORMANCE ASSESSMENT:** A company was contracted by the National Science Foundation to extract a geologic column. They have asked you, a paleontologist, to investigate this geologic column. The goal of this investigation is for you to explain the history of what has happened in the area where the column was pulled.

You must create a geologic time scale that outlines major events that shaped this area modeled on Earth's geologic time scale. You must create your own name for various eons and eras, indicating when major events occurred. You must include evidence of life, the age of various rock layers, and other evidence that leads you to your explanations of the column.

This unit was authored by a team of Colorado educators. The unit is intended to support teachers, schools, and districts as they make their own local decisions around the best instructional plans and practices for all students. To see the entire instructional unit sample with possible learning experiences, resources, differentiation, and assessments visit <u>http://www.cde.state.co.us/standardsandinstruction/instructionalunitsamples</u>.