Completion of Investigation Worksheet
Science Notebook Entries (as applicable)

Students can:

a. Use evidence to develop a scientific explanation for:
    1. What fossils tell us about a prehistoric environment
    2. What conclusions can be drawn from similarities between fossil evidence and living organisms
b. Analyze and interpret data to generate evidence about the prehistoric environment
c. Evaluate whether reasoning and conclusions about given fossils are supported by evidence

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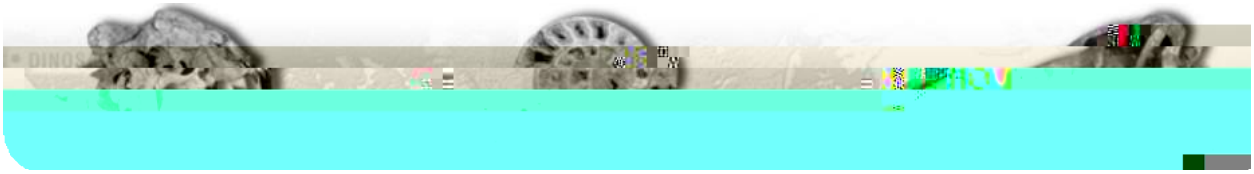
| | | |
|---|---|---|
| Age range | Biostratigraphy | Extinct |
| First appearance | Fossil record | Geologic Time Scale |

The science of is one way paleontologist estimate the age of rocks. By using the first appearance of a fossil in the fossil record or the co-occurrence of several fossils in the same rock, the rock's age can be approximated. This was one of the first ways that geologists were able to identify and correlate rock units across long distances and how the Geologic Time Scale was developed way back in the 1800s.

Organisms do not live forever. Rather, new groups are continually appearing in the fossil record while others are going extinct (disappearing forever). So, the presence of a particular fossil species or a group of fossils can be used to narrow down the age of the rock.

Fossils with a very narrow age range are very useful for determining the age of the rocks in which they occur, but even fossils with a wide range, when found with other fossils, can be useful. For example, if a rock unit contains two kinds of fossils, one that was alive from 100 to 13 million years ago to 50 million years ago and the other that lived from 55 million years ago until today, then we know that the age of the rock containing them both is probably between 55 and 50 million



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1 set of fossils:

Trilobite, Graptolite, Fern, Dinosaur Bone, Petrified Wood, Fish

1 set of fossil labels

10 hand lenses

10 Rulers

Geologic Time Scale

Geologic Map of Colorado

Investigation Worksheet

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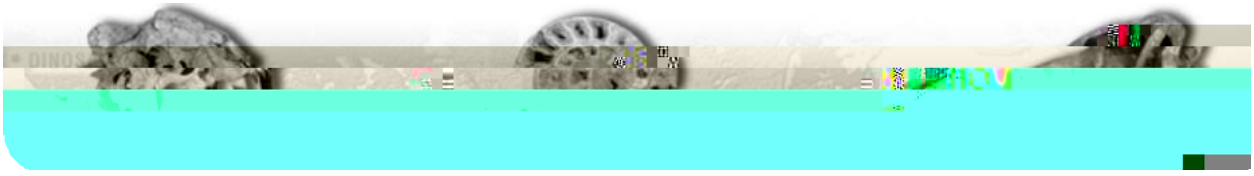
1. Introduce the Geologic Time Scale and age ranges.

Introduce students to the Geologic Time Scale. Show/explain that it is a way for geologists to refer to different time periods in Earth history. Tell students that the fossil record shows us that different fossil organisms lived at different times in Earth's History.

Life has changed a lot over the course of geologic time. When we look at the Geologic Time Scale, many of the units of time (or Geologic Periods) are defined by the different animals and plants that lived during those times. Also, the boundaries between the different time units are based on the first appearance of particular fossils and/or the extinction

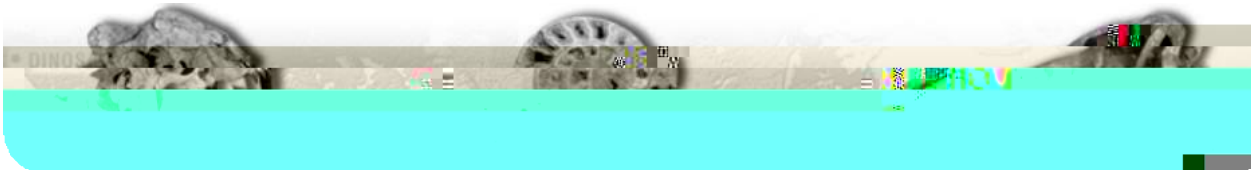


The amount of time a fossil organism is present in the fossil record.

– The science that describes rocks based upon their fossils. Even though the rocks can look different in different locations, the presence of the same fossils tells us that the rocks are the same age.

– When every single member of a species of organism is dead. For example, we know that the dinosaur is extinct because we have no living running around on Earth today.

– The first time a particular kind (or species) of organism appears in the fossil



Part A. Determine the age of each fossil using the identification cards:

1.

2.

3.

4.

5.

6.

Part B.

1. If you found a dinosaur bone in a rock, how old