5-Minute Refresher: Fossil Evidence

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Fossil Evidence – Key Ideas

- Fossils are the preserved remains or traces of living things.
- Only hard parts of an organism leave fossils.
- Typically, organisms that are quickly covered with sediment are likely to fossilize.
- When a plant or animal dies, it has to be in the right condition to be fossilized. That is why we cannot find fossils of every living thing ever.
- There are places around the world where it is more likely to find specific types of organisms.

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Fossil Evidence – Key Ideas

- Evidence that shows common ancestry is found in anatomical similarities, embryological development, and fossil record.
- This evidence can also provide details of the environment.
- The fossil record shows that millions of types of organisms have evolved. Some have become extinct.

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Fossil Evidence – Prior Knowledge

- Students will likely be familiar with dinosaurs.
- They may be familiar with extinct organisms from the Ice Age.
- Students might have misconceptions about bringing animals back to life using original remains found in ice, amber, or tar pits.

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Fossil Evidence – Learning Objectives for Grades K-3

- Fossils can help us learn about environments.
- Fossils provide evidence about the types of organisms that have lived over time.
- Fossils are compared with living organisms.

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Fossil Evidence – Learning Objectives for Grades 4-6

- In layers of rock, fossils are found in order of youngest to oldest.
- Many different types of organisms existed over time, but not all were in areas that would have supported the creation of fossils.
- Fossils can be compared by looking at similarities in anatomical features and embryological development.
- Evolutionary history can be reconstructed using anatomical, embryological, and genetic evidence in comparison to living organisms.

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Fossil Evidence – Common Misconceptions

- Polar regions have always been cold and hot regions have always been hot.
  - **Reality:** Marine fossils have been found on the tops of cold mountains, while evidence of tropical plants have been found in cold regions. Environments have changed over time as evident in fossil remains.
- Fossils are pieces of dead animals and plants.
  - **Reality:** Dead animals and plants can be preserved in ice, tar pits, or amber. These are called original remains. This is very rare. You are more likely to find hard parts, like bones and shells, that do not decay easily.

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Fossil Evidence – Additional Information

Fossil reconstruction is how scientists use fossils to construct a model of an unknown organisms. To learn more about how fossils are used by scientists, have students investigate:

Fossil Puzzler

http://www.siemensscienceday.com/activities/fossil_puzzler.cfm

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