Name: _____

Fossils: Clues to the Past

By Cindy Sherwood

Everybody knows that dinosaurs once roamed the earth. But how do we know that fact? Dinosaurs lived many millions of years ago and there were no photos taken of them (or any people around to take those photos!). Yet scientists do have proof of dinosaurs, thanks to fossils.

A fossil is what is left of an animal or a plant a long time after it dies. Fossils are the buried parts of living things that have been preserved from a different geological time period. You can think of fossils as the ancestors of today's animals and plants. To be considered a fossil, the remains must be at least 10,000 years old.

Usually when an animal or plant dies, it decomposes. That means it rots away to nothing over time. But sometimes, an animal gets buried at the bottom of an ocean in layers of sand or mud called sediment. Over many years, the animal's skeleton gets crushed by more layers of sediment. Eventually, the sediment hardens into rock over the bones, which decay. When that happens, minerals slowly replace the bones and make a cast of the skeleton in the same shape as the original. Millions of years later, the rock surrounding the skeleton surfaces after an earthquake or after erosion from wind and rain. The fossil is then just waiting to be found, perhaps by someone like you digging it up from the ground!

There are some other, more unusual ways for fossils to form. Scientists have discovered skeletons of animals that died instantly when a volcano erupted, their bones preserved in the ash. Small bugs or insects caught in tree sap can become fossils when the sap hardens into a golden material called amber. And animals trapped

in sticky natural asphalt or tar can turn into fossils. The most famous example of these fossils can be found right in the middle of California's biggest city, Los Angeles. Scientists have uncovered more than three million fossils from the Ice Age at the *La Brea Tar Pits*, including saber-toothed cats and mammoths. And scientists there continue to dig up more fossils all the time!

Huge dinosaur skeletons are probably the most famous kinds of fossils. The largest ever found is a dinosaur called *sauroposeidon* (sore'-oh-puh-sie'-dun). Scientists think this type of dinosaur was 60 feet long and weighed 60 tons—that equals 120,000 pounds! But fossils are not always huge. The tiniest dinosaur fossil was found in China. *Microraptor* was only about a foot long, which is about the size of a box of cereal. Even tinier are the smallest fossils ever discovered, blue-green algae that lived on some rocks in Africa more than three billion years ago. Blue-green algae are also the very oldest fossils ever found.

Fossils give us a wonderful window into our past. Today the science of studying fossils is alive and well. *Paleontology* (pay-lee-un-tall'-uh-gee) is the study of the history of life on earth, using fossils as the evidence. So if you love dinosaurs and you want to know more about what happened on Earth thousands or millions of years ago, maybe someday you can make your living by digging up fossils!

Name: _____

Fossils: Clues to the Past

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1. Which of the following statements is true about fossils?

- **a.** The oldest fossils on record date back to the time of the first humans living in North America.
- **b.** Only large animals, like dinosaurs, mammoths, and saber-toothed cats, are capable of becoming fossilized.
- **c.** It is becoming harder and harder for scientists to find fossils, so paleontology is a dying profession.
- **d.** You are more likely to find a fossil after it has been brought to the surface by wind or rain erosion, or even a natural disaster.

2. According to the information in the article, why are fossils helpful in studying the prehistoric past?

_____

_____

_____

3. Where are you most likely to discover a fossil?

- **a.** in North America, only
- **b.** in Asia, only
- **c.** all continents except Africa
- **d.** anywhere on Earth

4. Using the information in the article, describe one way a fossil can form.

_____

_____

_____

5. In your own words, describe what the *La Brea Tar Pits* are.

_____

_____

Name: _____

Fossils: Clues to the Past

By Cindy Sherwood

The following terms are vocabulary words from the article. Match the vocabulary word with its correct definition by writing the corresponding letter on the line.

1. _____ mammoths

2. _____ sediment

3. _____ amber

4. _____ cast

5. _____ asphalt

6. _____ algae

7. _____ erosion

8. _____ evidence

9. _____ skeleton

10. _____ preserved

a. small, non-flowering plants that include seaweed and single-celled organisms

b. an object that is made when material is shaped into a mold

c. maintained its original condition

d. the available information in support of a claim or proposition

e. a yellowish, see-through resin material that was produced by now-extinct trees in prehistoric times

f. a framework of bones and cartilage supporting an animal's body

g. ancient, extinct elephants from the time of the Ice Age

h. a process in which rock or other material that has been broken down by wind, rain, or water is carried away

i. material that settles at the bottom of a body of water

j. a dark, sticky mixture; natural tar or pitch

Name: _____

Fossils: Clues to the Past

By Cindy Sherwood

In the article, "Fossils: Clues to the Past," you learned that fossils help scientists learn about prehistoric animals, including dinosaurs and other extinct creatures, like mammoths and saber-toothed cats.

On the lines below, describe what kind of information scientists can learn about a prehistoric animal from studying its fossil. Base your answer on the information from the article and your knowledge of geology.

ANSWER KEY

Fossils: Clues to the Past

By Cindy Sherwood

1. Which of the following statements is true about fossils?

   a. The oldest fossils on record date back to the time of the first humans living in North America.

   b. Only large animals, like dinosaurs, mammoths, and saber-toothed cats, are capable of becoming fossilized.

   c. It is becoming harder and harder for scientists to find fossils, so paleontology is a dying profession.

   d. You are more likely to find a fossil after it has been brought to the surface by wind or rain erosion, or even a natural disaster.

2. According to the information in the article, why are fossils helpful in studying the prehistoric past?

   Fossils can tell scientists what prehistoric animals looked like, how big or small they were, and where and when they lived.

3. Where are you most likely to discover a fossil?

   a. in North America, only
   b. in Asia, only
   c. all continents except Africa
   d. anywhere on Earth

4. Using the information in the article, describe one way a fossil can form.

   Fossils form over thousands of years in hardened sediment when minerals replace bones or other remains. Fossils form when animal bones are preserved in ash, asphalt, or amber.

   (Answers may vary.)

5. In your own words, describe what the *La Brea Tar Pits* are.

   ***La Brea Tar Pits* is an area in central L.A. where scientists have found millions of fossils.**

ANSWER KEY

Fossils: Clues to the Past

By Cindy Sherwood

The following terms are vocabulary words from the article. Match the vocabulary word with its correct definition by writing the corresponding letter on the line.

1. g. mammoths
2. i. sediment
3. e. amber
4. b. cast
5. j. asphalt
6. a. algae
7. h. erosion
8. d. evidence
9. f. skeleton
10. c. preserved

a. small, non-flowering plants that include seaweed and single-celled organisms

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