



Lesson Plan: Fossils and Extinct Animals

Grade Level: 4

Subject: Earth Science

Duration: 45–60

NGSS 4-ESS1-1: Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.

Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** different types of fossils, including mold, cast, and amber fossils
- **Describe** the process of fossilization and the steps required for a fossil to form
- **Explain** reasons for animal extinction, such as environmental changes and competition



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(<https://newpathworksheets.com/api/guide/study-guide-science-grade-4-fossils-and-extinct-animals.pdf>)

- Worksheet - Fossil Formation Steps

(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-fossils-and-extinct-animals-1.pdf>)

- Assessment Worksheet (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-fossils-and-extinct-animals-0.pdf>)



- Vocabulary Matching Worksheet (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-fossils-and-extinct-animals-2.pdf>)

Lesson Procedure

Step 1: Introduction (5 minutes)

- Hook students by asking: 'How do we know dinosaurs existed if they lived millions of years ago?'
- Show images of extinct animals and fossils from the Study Guide. (<https://newpathworksheets.com/api/guide/study-guide-science-grade-4-fossils-and-extinct-animals.pdf>)

Step 2: Direct Instruction (15 minutes)



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Step 5: Assessment (10 minutes)

- Administer the Assessment Worksheet to evaluate understanding of fossil types and extinction. (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-fossils-and-extinct-animals-0.pdf>)
- Use the Lesson Checkpoint questions from the Study Guide as a final exit ticket.

Differentiation Strategies

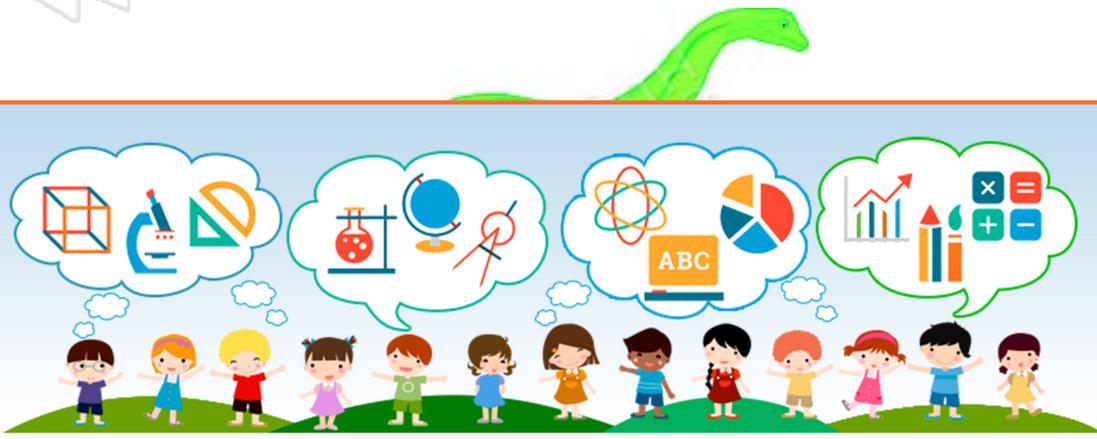
FOSSILS AND EXTINCT ANIMALS

Extinct Animals

Many animals have become extinct over millions of years. **Extinct** means that no longer living on Earth. When a species is **extinct**, it means there aren't any animals of that kind living on Earth. Animals that are extinct include dinosaurs, saber-toothed tigers, and dodo birds.

Lesson Checkpoint:
Name one animal that you know is extinct.

Reasons for Extinction



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the weaker animals may become extinct.

- Some animals may be extinct because of **human actions**. Many animals lose their habitats because humans destroy them by cutting down trees and building houses and roads where habitats existed. When an animal doesn't have a place to live, it often dies off, which leads to extinction.
- **Over hunting** is also another cause of extinction. Over hunting is when humans hunt animals too much and eventually the animal species that is being hunted dies off completely.

Endangered means an animal is close to becoming extinct but there is still time and hope for that animal species' survival.

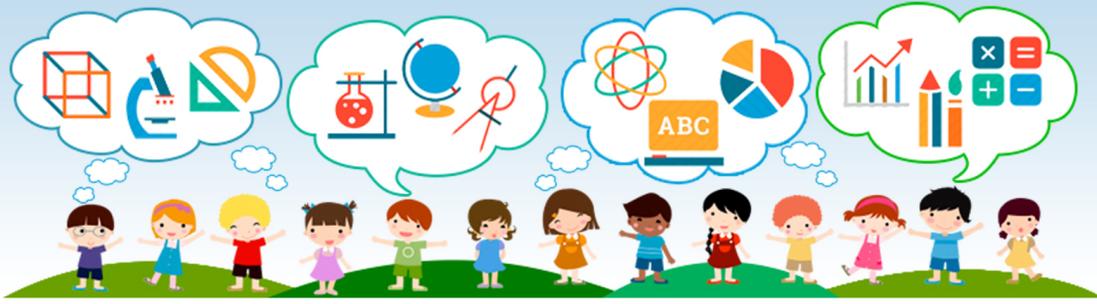
Lesson Checkpoint:
What is one reason animals become extinct?

Fossils

How do we know about animals that once lived on the Earth millions of years ago but are now extinct? Answer is...(drum roll please)...by studying **fossils!** A fossil is the **remains or evidence of a once-living organism** from long ago. Fossils form in sedimentary rock.

Steps to becoming a FOSSIL:

Step #1: The animal dies



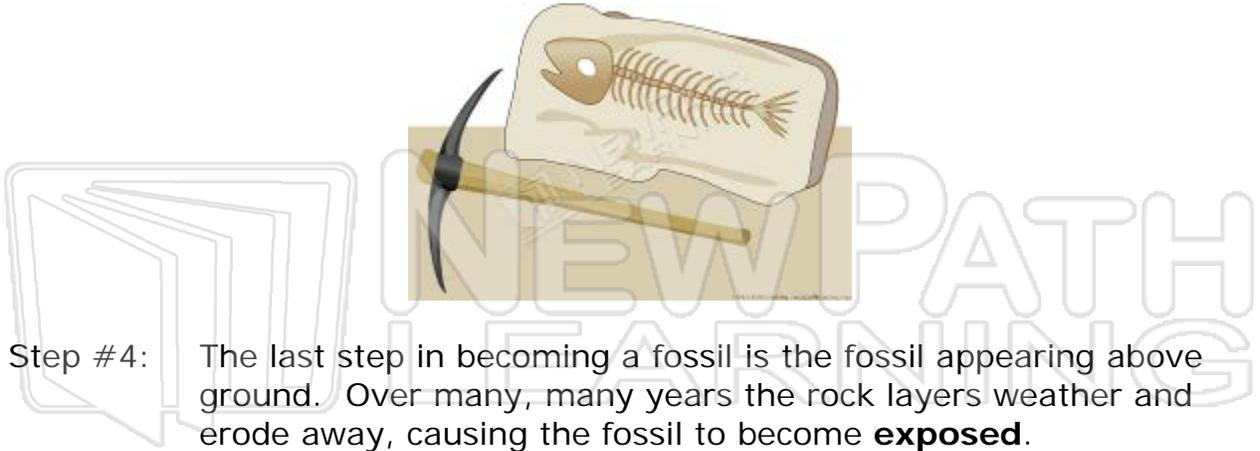
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(**sediment**) forming many layers on top of animal's remains.

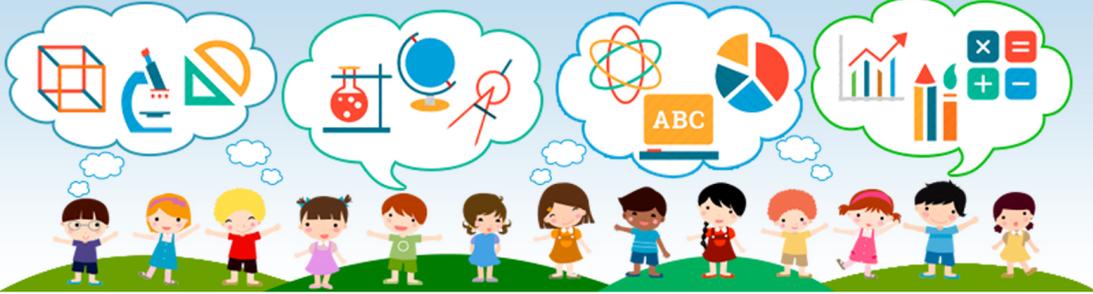


When the dead animal is covered in sediment, the materials in the animal's remains may be replaced with minerals in the sediment and harden into rock.



Step #4: The last step in becoming a fossil is the fossil appearing above ground. Over many, many years the rock layers weather and erode away, causing the fossil to become **exposed**.

Lesson Checkpoint:



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A fossil that is made when the mold of an animal in rock is filled in with other rock material is called a **cast**.

Some fossils are even found in **hardened tree sap**. Hardened tree sap is known as **amber**. Organisms' bodies can be preserved in amber for millions of years.



Fossils can form in tar pits as well. Some animals fell in **tar pits** millions of years ago and the soft body parts of the animals broke down and decayed but their **bones were preserved**.

Lesson Checkpoint:

What is one type of fossil and how is it formed?



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HOW OLD: Scientists can often figure out **how old** a fossil is according to the layer of rock it is found in.

Lesson Checkpoint:

What information do scientists get from fossils?

Not all living organisms become fossils. Conditions in the environment around a dead organism need to be just right in order for the animal to become a fossil. It is important for an animal's dead body to be **quickly covered** with sediment and to remain covered so the animal remains are not eaten or exposed to bacteria.

Paleontologists are scientists who observe, examine, and study **fossils** in order to find out about the past.

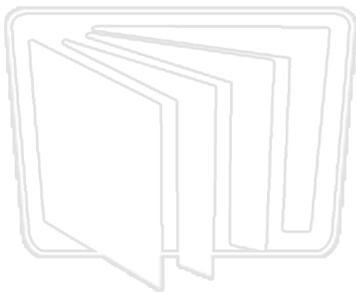


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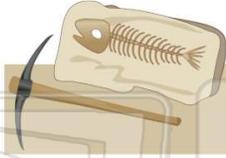
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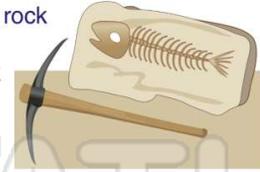
1 A _____ is **remains** or **evidence** of a once-living organism from **long ago**.

- A sediment
- B picture
- C rock
- D fossil



2 What kind of **rock** do **fossils form** in?

- A sedimentary rock
- B sand
- C igneous rock
- D granite



3 There are **several steps** an organism takes when **becoming a fossil**. The **first step** to becoming a fossil is _____.

- A the animal has babies
- B the animal drinks

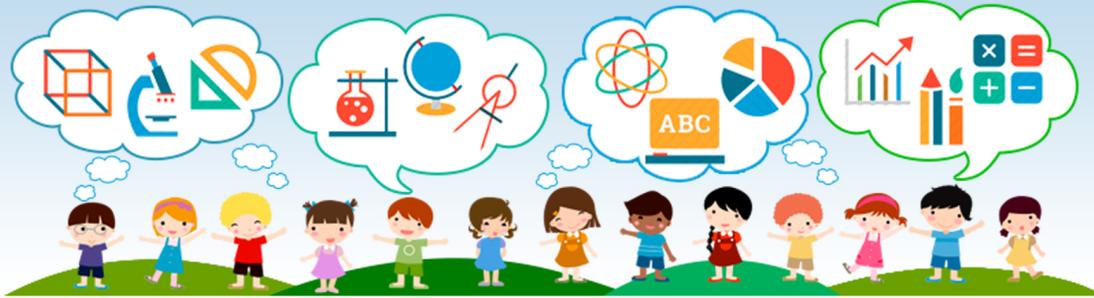


4 **After dying**, which of the following would be the next step of this fish **becoming** a fossil?

- A body changes into rock
- B fossil is exposed
- C animal becomes sick



5



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- A sand
- B rock
- C soil
- D soil



- B becoming buried again
- C sinking deeper in the rock layers
- D melting under the earth's surface

9

A **space in a rock** which is in the **shape of an animal** that once lived on earth is a fossil called a(n) _____.

- A cast
- B amber
- C mold
- D bone fragment



10

What **type of fossil** is made when the mold of an animal in rock is **filled** in with other rock material?

- A amber fossil
- B a mold
- C a cast
- D an imprint

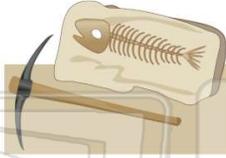




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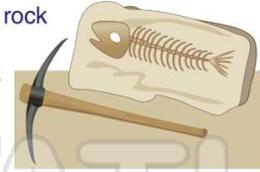
- A sediment
- B picture
- C rock
- D fossil



(D)

2 What kind of **rock** do **fossils** form in?

- A sedimentary rock
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(A)

3 There are **several steps** an organism takes when **becoming a fossil**. The **first step** to becoming a fossil is _____.

- A the animal has babies
- B the animal drinks



(C)

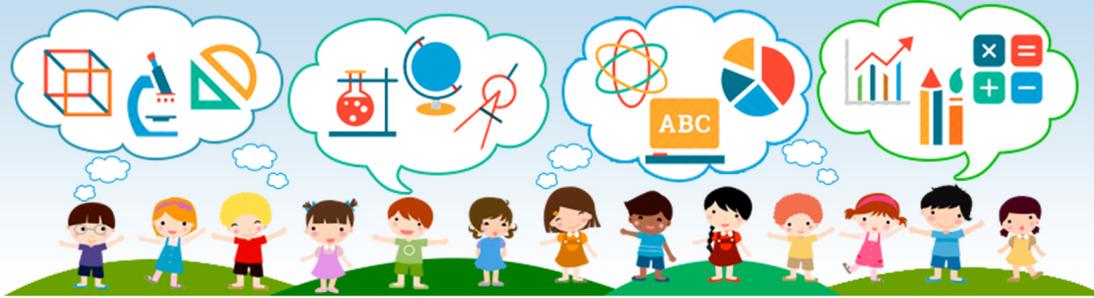
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(D)

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(A)

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(A)

9

A **space in a rock** which is in the **shape of an animal** that once lived on earth is a fossil called a(n) _____.

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- C mold
- D bone fragment



(C)

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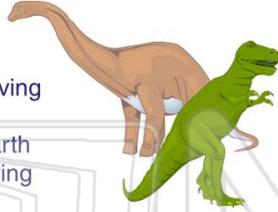
(C)



Name _____ Class _____ Date _____

1 What does the word **extinct** mean?

- A still living on earth
- B no longer living on earth
- C living on earth
- D only one living on earth



2 When a species is **extinct**, it means there are **not any living** _____ of that kind on earth.

- A males
- B females
- C species
- D young



3 Which is an example of an **extinct** animal?

- A saber-toothed tiger
- B tiger
- C lion
- D cheetah

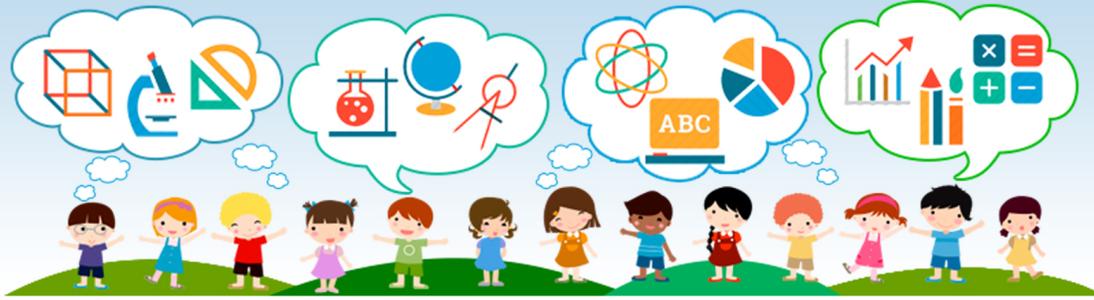


4 **Dinosaurs** roamed the earth long ago. It is believed by scientists that the last of the dinosaurs **became extinct** about _____ years ago.

- A sixty-five hundred
- B sixty-five thousand



5



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destruction of animals' habitat



- C moves away
- D stays in open spaces

9

Many animal species that once lived on earth are now **extinct**.

True or false?

- A true
- B false



10

An **endangered species** means _____.

- A the species is close to becoming extinct
- B the species is gone but will return
- C the species is gone forever
- D the species is alive and well





Name _____ Class _____ Date _____

1 What does the word **extinct** mean?

- A still living on earth
- B no longer living on earth
- C living on earth
- D only one living on earth



(B)

2 When a species is **extinct**, it means there are **not any living** _____ of that kind on earth.

- A males
- B females
- C species
- D young



(C)

3 Which is an example of an **extinct** animal?

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- D cheetah



(A)

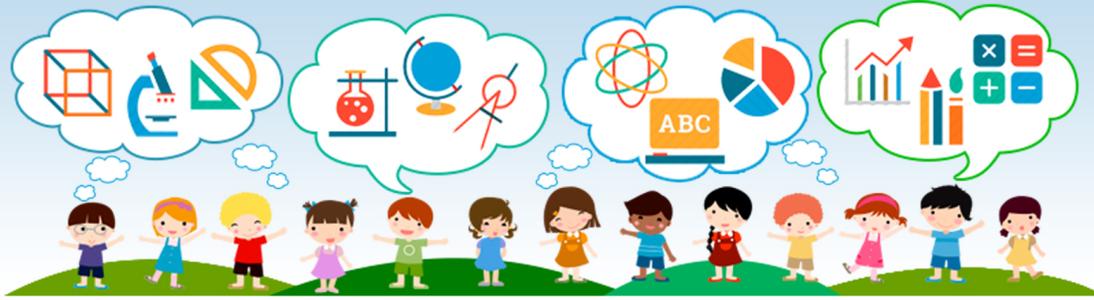
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(C)

5



(B)

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(B)

destruction of animals' habitat



- C moves away
- D stays in open spaces

9 **Many** animal species that once lived on earth are now **extinct**.

True or false?

- A true
- B false



(A)

10 An **endangered species** means _____.

- A the species is close to becoming extinct
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- C the species is gone forever
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(A)



Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Greenhouse effect

Ice age

Latitude

Endangered

Paleontologist

Fossil

Extinct

Mold fossil

1. _____ - organisms that are in danger of becoming extinct



2. _____ - a species no longer living on Earth



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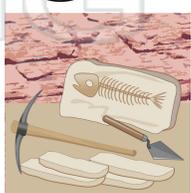
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7. _____ - a space that is found in rock that is in the shape of
an animal that once lived on Earth



8. _____ - a scientist who observes, examines and studies
fossils in order to learn about the past





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Fossil

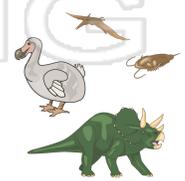
Extinct

Mold fossil

1. **endangered** - organisms that are in danger of becoming extinct



2. **extinct** - a species no longer living on Earth



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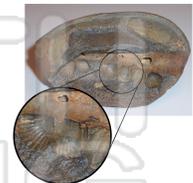
5. ice
latitud

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6. lati
degree

7. **mold fossil** - a space that is found in rock that is in the shape of an animal that once lived on Earth



8. **paleontologist** - a scientist who observes, examines and studies fossils in order to learn about the past

