

Fossils Tell Stories

Use fossil patterns to connect evidence with evolution.

SC.7.L.15.1 "Recognize that fossil evidence is consistent with the scientific theory of evolution that living things evolved from earlier species."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline three details that compare organisms from different times. Write 1, 2, and 3 beside the sentences, one in each paragraph, that explain why fossil patterns are consistent with evolution.

Evidence in the Rocks

- ① Fossils are preserved remains, traces, or imprints of organisms from long ago. Most form when sediment quickly covers an organism or its tracks, protecting evidence from decay. Rock layers usually build up over time, so lower layers are often older than layers above them. By comparing fossils in layers, scientists can ask how groups changed. Fossil evidence does not show that every organism stayed the same. Instead, it can reveal that organisms in older layers differed from related organisms found later.
- ② In Pakistan, scientists have found fossils of early whales in rock layers from about 50 million years ago. Some of these animals had bodies suited for swimming but also had large hind limbs and feet. Fossils of later whales show smaller hind limbs and bodies more specialized for life in water. Modern whales have tiny internal hind-limb bones and no external back legs. This series is consistent with the idea that whales evolved from earlier land mammals over many generations, rather than appearing in their modern form all at once.
- ③ Another fossil pattern involves birds and certain dinosaurs. Archaeopteryx lived about 150 million years ago and had feathered wings, a trait linked with birds. It also had teeth, clawed fingers, and a long bony tail, traits found in many nonbird dinosaurs. Later bird fossils show changes in some of these features, while living birds lack teeth and have shorter tails. This mixture of traits is consistent with evolution because it shows that related groups can share inherited features while changing over long periods.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What can scientists often infer from finding a fossil in a lower rock layer rather than a layer above it?

2 Describe one difference between early whale fossils and later whale fossils. How does that difference support evolution?

3 How do modern whales' tiny internal hind-limb bones add to the fossil evidence about whale evolution?

4 What traits of Archaeopteryx connect it with both birds and nonbird dinosaurs? Explain why this mixture of traits is consistent with evolution.

3 YOUR TURN _____ Your own words

A lower rock layer contains fossils of a plant with broad leaves and seeds in hard cases. A younger layer contains related plant fossils with narrower leaves and thinner seed cases. Write exactly two sentences explaining how this fossil pattern is consistent with evolution. Use both observations.

PART 1 • READ AND MARK

Underline three details that compare organisms from different times. Write 1, 2, and 3 beside the sentences, one in each paragraph, that explain why fossil patterns are consistent with evolution. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What can scientists often infer from finding a fossil in a lower rock layer rather than a layer above it?	The fossil in the lower layer is often older because lower rock layers usually formed before layers above them.
2	Describe one difference between early whale fossils and later whale fossils. How does that difference support evolution?	Early whales had large hind limbs and feet, while later whales had smaller hind limbs and bodies more specialized for water. This pattern supports evolution because it shows related organisms changed over many generations.
3	How do modern whales' tiny internal hind-limb bones add to the fossil evidence about whale evolution?	They are evidence of a hind-limb feature inherited from earlier ancestors, even though modern whales have no external back legs.
4	What traits of Archaeopteryx connect it with both birds and nonbird dinosaurs? Explain why this mixture of traits is consistent with evolution.	Archaeopteryx had feathered wings like birds, plus teeth, clawed fingers, and a long bony tail like many nonbird dinosaurs. The mixture is consistent with evolution because related groups can share inherited traits while changing over time.

PART 3 • YOUR TURN (SAMPLE ANSWER)

The older plant fossils have broad leaves and hard seed cases, while the younger related fossils have narrower leaves and thinner seed cases. This pattern is consistent with evolution because it shows that a related group changed over many generations.

Accept answers that accurately cite evidence from different times and connect the pattern to change in related organisms over generations. Students may use equivalent wording for inherited traits, ancestors, or species changing over time.