TOEFL Listening Lesson 3

Setting: A lecture in a Paleontology class

Questions

What kind of fossils are dinosaur footprints classified as?

A) Body fossils

B) Trace fossils

C) Mineral fossils

D) Skeletal fossils

What information [illegible]

D) The time of year the footprints were made

According to the professor, what do multiple parallel dinosaur trackways at a single site suggest?

A) The dinosaurs were hunting alone

B) The dinosaurs traveled in groups

C) The dinosaurs lived underwater

D) The dinosaurs were nesting

Why does the professor mention that some trackways show smaller dinosaurs scattering away from larger prints?

A) To argue that dinosaur footprints are often misinterpreted

B) To illustrate how footprints can show predator-prey interactions

C) To suggest that smaller dinosaurs made more durable footprints

D) To explain why fossilized footprints are rare

Why does the professor point out that wet mud and dry sand preserve footprints differently?

A) To explain why some footprints are found near fossilized plants

Script

Professor:

When most people think about fossils, they imagine bones—skeletal remains preserved over millions of years. But in fact, another type of fossil, known as a trace fossil, can tell us just as much, if not more, about how ancient creatures lived. Today, we'll be focusing on one of the most fascinating types of trace fossils: fossilized footprints, and what they reveal about dinosaur behavior.

Fossilized footprints are formed when dinosaurs walked across soft surfaces like mud or sand. Over time, these impressions hardened, and

One of the first things paleontologists analyze when they find a set of fossilized footprints is the size and shape of the prints. From these measurements, they can estimate the size of the dinosaur that made them. The length and width of a footprint, as well as the depth, can suggest not only the species but even the weight of the animal. Larger, deeper impressions might indicate a heavier dinosaur, while smaller, lighter prints might belong to juveniles or smaller species.

In addition to the size of the footprints, scientists examine the spacing between them—what we call the stride length. By calculating the distance from one footprint to the next, researchers can estimate the

speed at which a dinosaur was moving. For example, longer stride lengths suggest faster movement. Some fossilized trackways show evidence of dinosaurs moving at a run, while others show slow, deliberate walking patterns.

Fossilized footprints can also offer clues about social behavior. One famous example is a site in Texas called the Paluxy Riverbed, where numerous sets of tracks suggest that herds of dinosaurs moved together. Multiple parallel trackways, all moving in the same direction at roughly the same speed, point toward group behavior, rather than solitary movement. Similarly, evidence from sites around the world indicates that some species of herbivorous dinosaurs, like hadrosaurs,

marks left by ancient rivers or near fossilized plant material. This helps researchers reconstruct ancient ecosystems. In some cases, a set of tracks may suddenly change direction or become erratic, suggesting that the dinosaur might have been startled or fleeing from a predator. In one particularly famous discovery, smaller dinosaur footprints seem to scatter away from larger, carnivorous prints, possibly recording a chase.

Footprints can even reveal anatomical details that bones sometimes miss. For example, tracks have shown that some dinosaurs, like certain theropods, walked with their toes close together, while others splayed

them outward. Fossilized skin impressions occasionally appear alongside footprints, providing additional evidence of the texture of dinosaur skin, which is very rare to find preserved elsewhere.

There are, of course, limitations to what fossilized footprints can tell us. For instance, the same dinosaur might leave different kinds of footprints depending on the surface it walked on. Wet mud would record a much deeper and more distorted footprint than dry sand. Additionally, it is often impossible to match a footprint precisely to a known dinosaur species, because footprints preserve behavior, not bone structure. Thus, paleontologists use a separate naming system called "ichnotaxonomy" to classify footprints, often based on their shape, size,

scientists can reconstruct how dinosaurs moved, traveled, interacted, and even what the ancient environment looked like. Each footprint is a snapshot—a brief moment in time that has survived millions of years to tell a story.

In our next class, we'll look more closely at some famous dinosaur track sites and the debates that continue over how to interpret them. Thank you for your attention, and be sure to read the assigned chapter on trace fossils before our next meeting.

Answers

What kind of fossils are dinosaur footprints classified as?

B) Trace fossils

What information can scientists estimate by measuring the stride length of dinosaur footprints?

C) The speed at which the dinosaur was moving

According to the professor, what do multiple parallel dinosaur trackways at a single site suggest?

B) To illustrate how footprints can show predator-prey interactions

Why does the professor point out that wet mud and dry sand preserve footprints differently?

B) To emphasize that environmental conditions affect footprint preservation