Royal BC Museum
675 Belleville Street
Victoria, BC V8W 9W2

Is it a fossil or is it a replica?

A fossil is the preserved remains, impression or trace of an organism from a past geological age. Fossilization usually begins when an organism is buried quickly by sediment such as mud, sand or silt, protecting it from decay and scavengers. Over time, additional layers of sediment accumulate and harden into rock. In many cases, mineral-rich water seeps through the remains, filling pores or replacing the original material with minerals. This process can preserve the organism's shape and structure as a fossil.

A replica is a copy of an object, made to look like the real thing. Sometimes a museum may make a replica of a fossil because the original is in bad shape, is too fragile to be displayed or because they are missing a piece to make a complete skeleton. Replicas can be just as good as the real fossil and can even be used for study.

Replicas of specimens may be sculpted and coloured to closely match a real specimen. Manufactured casting materials are usually light in weight. Light weight is very important for the reconstruction of large animals such as dinosaurs. Heavy weights in exhibits would mean additional expenses to support massive structure.

Sometimes the artist is clever and tries to make a replica look as real as possible. Note the hadrosaur toe bones are quite heavy and bone-like but the paint and textures are not exactly like the real bone.

Invite your students to look closely at the objects in this Provocation Pack so they can learn to tell the difference between a fossil and a replica. Watch out, there is a wild card in the bunch. Can you spot it?

Replica - Therapod Egg
The replica of the theropod egg is lightweight and nicely coloured and textured.

Replica – Coprolite
Coprolites are fossilized poop! They are classified as trace fossils, meaning that they are not part of the living thing's body, but rather evidence of its behaviour. Coprolites give us important information about the diet of ancient animals, extinct or otherwise.

Real Fossil– *Albertasaurus* Tooth
The *Albertasaurus* tooth in the durphy box is real. Note the finely serrated tooth margin. It is fragile. Please leave it in the durphy box.

Replica– *Edmontonsaurus* Skin
The theropod claws and the *Edmontonsaurus* skin are both replicas.

Real Fossil – *Phoenicites* Leaf Fragment & Angiosperm Leaf
The palm leaf fragment is of *Phoenicites*. On the other side is a fragment of an angiosperm (flowering plant) leaf. These real fossils are from the Vancouver Island Nanaimo Group rocks. The presence of palms suggests a warm climate during the Late Cretaceous about 75–80 million years ago.

Replica– *Hadrosaurus* Toe Bones
Hadrosaurus is a genus of dinosaur that lived in North America during the Late Cretaceous period (83 to 77 million years ago). Also known as duck-billed dinosaurs, they were four-legged and 7–8 m in length and around 3 m in height. They were herbivores, sporting a keratinous beak and complex teeth to break down and process foliage.

Replica- Therapod Claws
Theropods are a large group of dinosaurs that includes *Tyrannosaurus*, *Velociraptor*, and *Spinosaurus*. Their name is derived from the ancient Greek word *therion*, meaning “beast,” and *podos* meaning “foot.”

WILD CARD - Iron Oxide Rock (not a fossil nor a replica but a pseudofossil)
The iron mineral is very heavy and looks like a coprolite, but it is not. Minerals like these are common at some dinosaur sites in Alberta and can easily be confused with coprolite. A natural coprolite fossil may have seeds, fibres, bones and other debris in it that are recognized as once living.

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