



# Ice Excavation

Set up a paleontology dig and discover prehistoric life!

Paleontologists explore the past by studying fossils of animals and plants that lived long ago.

## Materials Needed:

Mixing bowl or Tupperware container, water, small plastic animal toys, salt, spoons, toothpicks. *Optional:* Eyedropper or dropper bottle, tweezers, chopsticks.

## Instructions:

This activity requires advance preparation. Set it up one to two days in advance.

**Step 1:** Set up your ice dig. Fill a mixing bowl or Tupperware container half full with water. Add small plastic animal toys. Place in freezer for at least 24 hours, or until fully frozen.

*Hint:* Try freezing the ice in layers; let the first layer of water and toys freeze, then add more toys and water. This will ensure the toys will not all sink to the bottom.

**Step 2:** Take the container out of the freezer. Run warm water on the outside of the container to make the ice pop out in one piece. Set the block of ice on a tray.

**Step 3:** Start excavating the toys! Remember that fossils can be fragile, so be gentle. Experiment with different methods: sprinkle salt over the ice; use an eye dropper or dropper bottle to pour warm water on the ice; use tools such as tweezers, toothpicks, or chopsticks to dig out the toys; move the block of ice around to dig from different angles.



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# Exploring the Past

Paleontologists explore the past by studying fossils of animals and plants that lived long ago. They can learn about the climate, environment, ecosystems, and living things of the past to help us better understand the Earth's history.



*Right: Excavating a fossil on the Colville River. Photo by Roger Topp.*



One way fossils can be preserved is by being buried in frozen soil, or permafrost. In 1979, a family of miners near Fairbanks discovered the frozen carcass of a steppe bison. University of Alaska paleontologists excavated the fossil very carefully. The animal was coated in a mineral that turned its skin a blue color, so scientists named it "Blue Babe".

*Left: Blue Babe on display at the UA Museum of the North.*

Blue Babe is a well-preserved ice age mummy! Radiocarbon dating showed that he lived about 36,000 years ago, during the last Ice Age. Tooth marks and blood under his skin also told scientists that an American lion killed it. The frozen ground preserved clues to tell the bison's story.

Other Ice Age animals have been discovered in places like Alaska and Siberia. The permafrost in these places can preserve animal remains for tens of thousands of years. The animals' insides are sometimes preserved too. Looking inside an animal's stomach, scientists can even tell what the animal had for dinner before it died! Examples of ice age mummies recently discovered include woolly mammoths, steppe bison, Arctic ground squirrels, and a Paleolithic dog.



*Right: Cast of a woolly mammoth calf at the UA Museum of the North. The original is on display at the American Museum of Natural History.*



Archaeologists also dig for clues to our past. They study how people lived in the past by examining the objects they leave behind, like tools and houses. In Alaska, archaeologists investigate history and culture of peoples who lived in Alaska as far back as 14,000 years ago!

*Left: Archaeological artifacts at the UA Museum of the North. Photo by Theresa Bakker.*