Atlantic White Shark Conservancy
Education Programs

Fossil Excavation At Home Investigation

Facilitator Guide

Background Information:
Sharks have been around since before the dinosaurs, but how do we know that? We have learned about prehistoric sharks through fossil records. When people think of fossils they usually think of bones, but those are not the only type of fossil. A fossil is the remnant of something that was once alive. It could be a bone, a tooth, or a trace fossil (an imprint of something that was once alive). Sharks have a skeleton made up of cartilage, which unlike bone will break down over time. Everything we know about prehistoric sharks we have learned from their teeth. It is the only part of the shark that can survive over long periods of time. Excavating or removing a fossil can be tricky. A paleontologist must work very carefully to try and preserve the fossil and ensure it doesn't break. They also strive to leave the environment in which they found the fossil unharmed.

Objective:
For youth to create a plan for excavating their fossil, execute their plan, and then evaluate if the plan was a success or not.

Materials:
Tooth picks
Popsicle sticks
Ice cubes with fossils inside
Cups of salt
Paper plates
Cotton Ball
Tape
Towels
Fossils (or something to resemble a fossil)

Activity:
To Start: Explain to the students that each of them will be limited in their supplies. Scientists have to work within a budget and have a limited amount of resources, especially when working in the field. This will be important when deriving their plan. They don't want to break or use up all of the material, and then realize their plan didn't work and they can't get to their fossil.

Distribute Resources: Each student will receive a paper plate with 1 toothpick, 1 popsicle stick, 1 cotton ball, and a tablespoon of salt. Have them evaluate their resources and discuss how they could be used in excavating a fossil.

Excavation: Distribute an ice cube with frozen fossil to each of the students. Have them examine the ice cube, then follow their plan to excavate the fossil carefully. Remind them to work slowly and carefully to ensure the fossil isn't broken.

Once successfully excavated you can tell the students to examine and try to identify the fossil they excavated. Have them draw a picture and make notes to describe their findings.

Modification:
For younger students it might be good to walk through this together. Since the fossil is inside ice, ask them what kinds of things could remove the ice. They could chip away at it, use the cotton ball to apply friction heating the cube so it melts, the salt also helps in melting so they can apply the salt.