



04737 Fuller Rd | East Jordan, MI 49727  
231-536-3369 | info@miravenhill.org | MiRavenHill.org

Raven Hill Discovery Center, incorporated in 1991,  
is a 501(c)(3) tax-exempt corporation.

Open 10am-4pm weekdays, 12-4pm Saturdays and 2-4pm Sundays.  
Open holidays and other times by appointment.

**MISSION:** to provide a place that enhances hands-on and lifelong learning for all ages by connecting science, history and the arts.

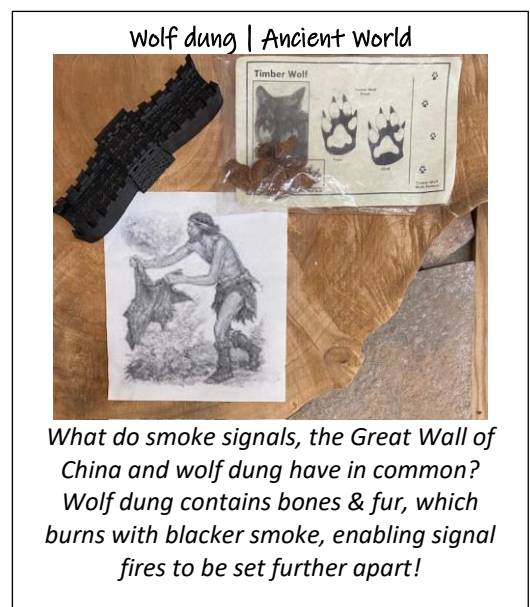
## WHERE SCIENCE HISTORY AND ART CONNECT

To: Raven Hill friends  
From: Cheri  
Date: August 10, 2024  
Re: *Very Early Technology*

Raven Hill Discovery Center has been at the forefront of innovative exhibits since its inception in 1992. The Evolving Technology (ET) Building opened in 2015 and illustrates the journey of human innovation from the Stone Age to the Information Age. The ET Building represents a glimpse into the vast history of the technological innovations in everyday life. Each advancement not only improved efficiency and convenience, but also shaped entire cultures.

A key technological highlight across various areas of daily life was the control of fire. This was a monumental step in human evolution, allowing for the cooking of food, which led to changes in diet and physical development. But fire was also important for other things, like communicating. For several years, a computer printout of a cave dweller making smoke signals hung in the Ancient World area of the ET Building timelines. I would tell visitors that I was waiting for someone to make a diorama of a person sending smoke signals, because it was an early method of communications.

One day a family was exploring inside the main museum and as we talked, I thought they might enjoy seeing the Evolving Technology Building. I invited them to walk through the exhibition with me. As we walked back in time, we came to the Ancient World display and I went through my usual little story about wanting a diorama to illustrate smoke signals as a form of communication. The grandfather was Chinese and he said that we should have some wolf dung as part of the exhibit. When I asked why, he said that wolf droppings were used in the signal fires on the Great Wall of China. The bone and hair in the dung burned with blacker smoke, so they could set the signal fires further apart. With that in mind, I figured that the Great Wall of China would be perfect as the "smoke signal" diorama. With the help of our 3D printer expert, John Clements, and one highly creative volunteer, Gayle Levengood, we now have a diorama of the Great Wall of China with smoke signals AND we even have some timber wolf "Repli-scat" to show visitors what wolf dung looks like!



*What do smoke signals, the Great Wall of China and wolf dung have in common?  
Wolf dung contains bones & fur, which burns with blacker smoke, enabling signal fires to be set further apart!*

Smoke signals | Ancient World



*A 3D printed model of the Great Wall of China hangs in the Ancient World section of the Evolving Technology Building illustrating another form of communication.*

It's also fascinating and enjoyable to highlight the clay oven featured in the Ancient World's daily life section. As far as 9,000 years ago, there is evidence that humans had mastered the art of baking bread in clay ovens. They used buffalo chips (dung) as fuel, which produced a cleaner, whiter smoke compared to wolf dung. This early use of dung as fuel was a unique and innovative solution that highlights the ingenuity of ancient daily life.

Bread oven | Ancient World



*A clay oven similar to this one would have been covered with "buffalo chips," dried dung of buffalo or other herbivores used as fuel for baking bread and cooking food.*

Raven Hill will be open to visitors during regular hours even while the bridge is under construction. Those hours are daily through the end of August—10am to 4pm on weekdays, noon to 4pm on Saturdays and 2pm to 4pm on Sundays. As usual, between Labor Day and Memorial Day, the Center is open Saturdays from noon to 4pm and Sundays from 2pm to 4pm, as well as by appointment during the week and on holidays.

Regular admission is \$10 per person. Admission will be reduced to \$5 per person at the **Pop-up Main Museum**, when the road is closed for the bridge replacement. Those wanting the adventure of traveling the detour and exploring the Main Museum may call for reservations. Otherwise, the Main Museum will be closed during the construction period. The outdoor exhibits will be open for exploration via the detour. Feel free to call Cheri at 231.536.3369 or email [info@miravenhill.org](mailto:info@miravenhill.org) to make reservations to visit the Main Museum, for more information or with any questions you might have.

Cheri

**Note #1**--Don't forget to join us at Raven Hill as we watch for meteors together on August 11<sup>th</sup>. Rod Cortright, NASA ambassador, will present a short pre-program about the causes of meteor showers. The indoor program begins at 8:30pm and then everyone will reconvene near the Observatory up by the Schoolhouse at sunset, which is around 9pm. Grab blankets or chairs, bring your friends and family and enjoy the breathtaking spectacle of shooting stars lighting up the night sky. Don't miss this enchanting experience. We look forward to seeing you there! Please register by emailing [info@miravenhill.org](mailto:info@miravenhill.org) or calling 231.536.3369. This event is weather dependent, so check in with Raven Hill, if the skies are cloudy or if it's raining.

**Note #2**-- The current target date for Fuller Road closing for the Deer Creek bridge replacement is now August 19. Construction cannot start until all the parts have arrived, so stay tuned for future news!