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

Mission: Raven Hill provides a place that enhances hands-on and lifelong learning for all ages by connecting science, history & the arts.

To: Friends and Family everywhere
From: Cheri and Raven Hill
Date: February 13, 2021
Re: Weekly Update

Happy Valentine's Day, Everyone!

For most of us, Valentine's Day is all about hearts and the color **red**, but it wasn't always so. It wasn't until the 1700's in Britain that the holiday started to be the Valentine's Day that we recognize today.

Legend has it that on February 14th, around the year 270 CE (formerly AD), Valentine, a holy priest in Rome in the days of Emperor Claudius II, was beheaded. While in jail, Valentine left a farewell note for the jailer's daughter, who had become his friend, and signed it "From Your Valentine." By [History.com Editors](#)

My sister found this "Valentine" in her button collection and shared a picture! Both our mother and grandmother were great button collectors. They enjoyed going to Button Club meetings and searching for special buttons to complete their competition cards. We have been exploring all the buttons we inherited—glass, pearl, bone, early plastics, wood and metal, including copper.



Speaking of buttons, Raven Hill's new indoor exhibit, "**Mother of Pearl Treasures: From the Banks of the Mississippi to the Oceans of the World**" opens this spring, as the pandemic allows.



Speaking of copper and the color **red**, this familiar metal has been used by man for over 10,000 years, either in its pure form or with tin to form the alloy bronze. Among its many uses, copper is used to make decorative objects, like jewelry and colored glass. "Eraclius's early medieval book, *De Coloribus et Artibus*, includes instructions for creating green and red glass by adding copper (probably in the form of ore or copper filings) to the batch, a method practiced since ancient times. With copper oxide added to clear glass with oxygen in the environment, **blue** cupric (Cu^{2+}) ions are formed. With no oxygen, which is a reduction environment, **red** colloidal cuprous (Cu^{1+}) oxide is formed. Then, if re-oxidized, **green** cuprous (Cu^{1+}) oxide results (think Statue of Liberty)"—all from copper! This explanation comes from The Oxford University Press. Gold is also used to color glass **red**. Gold or **ruby red**, more of a cranberry color, is made by adding gold salts to molten glass.

(Left) You can explore these two elements and the subtle shade differences of copper and gold red on the Periodic Table of the Elements at Raven Hill. You can also take art classes. Copper planishing (pounding) and fused glass are two of the most popular sessions for children and adults. Call 231.675.6025 to schedule a small group class, with adherence to all COVID guidelines for masking and social distancing.



Harvey, our human torso, shows off his heart and lungs in this close up photo.

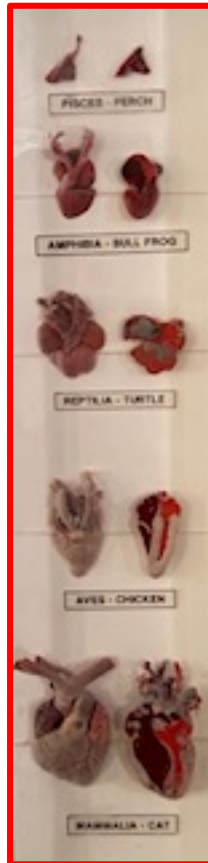
This spring, inside exhibits will be a one-way walk through, just for looking and learning.

For visitor safety during the pandemic, the only interactive exhibits at Raven Hill will be outside!

If you know someone who would like to receive weekly updates, please send their email addresses to info@miravenhill.org. I will add their names to the list. Previous updates are all available on our website—www.MiRavenHill.org.

I always enjoy getting your emails & phone calls. You can text me or call my cell at 231.675.6025 anytime. You can also email me, whenever you like. My email address is cheri@miravenhill.org.

Stay safe. Even after you get your vaccine, it won't hurt to wash your hands often, wear your masks, socially distance and stay away from crowds. Until we know for sure that this pandemic is truly under control, it only makes sense to be careful. Meanwhile, "Start each day with a positive thought and a grateful heart." Roy Bennett, *The Light in the Heart*



Yes, these are real hearts that have been injected with dyes to make the parts more visible!

Hearts are more than just Valentine's Day symbols here at the Center. They reflect our passion for the sciences and for "hands-on" learning. Raven Hill exhibits can encourage children to explore the various organs in their bodies, possibly motivating them to think about a future career in the health profession. Or visitors can compare vertebrate hearts, including fish, amphibian, reptile, bird and mammal.

Raven Hill is reopening and moving hands-on learning outside for 2021, just to be safe!

With the uncertainty of the pandemic, it only seems logical to make this change. The Center will be upgrading and adding to outdoor exhibits, as well as creating new learning opportunities, all in the open air.

The **Charlevoix Conservation District** Board of Directors has unanimously agreed to provide, at cost, some of the trees needed to upgrade our existing **Taxi Trail**.

Thanks for your support of Raven Hill!



Promoting natural resource conservation in Charlevoix County through partnerships, community outreach and landowner support, since 1948.



Stained glass and pressed flowers combine to fashion a beautiful heart.

Take care of yourselves and again, Happy Valentine's Day, **Cheri**