The Interior News-Way

A Newsletter By Leaders for Kansas 4-Hers in the Geology Project

Vol. 1, Issue 2, Dec 2025

In This Issue

What’s That Specimen?

Can you identify the specimen below? No worries if you can’t! The image is taken from the weebly website, so take a look around and see if you can find it.
https://kansasgeology.weebly.com

Online Resources

We have a YouTube channel where videos and shorts have been posted as additional resources. Topics include putting together a box and an explanation of the rock cycle. The videos are also available through the weebly site. You can find the channel here: https://www.youtube.com/@KansasGeologyActionTeam

4-H Geology Workshop Day

Leaders Lesa and Rob Reves have set up a day of workshops in January.

Date: January 31, 2026
Location: Pottorf Hall, CiCo Park, 1710 Avery Ave, Manhattan, KS

Schedule (subject to change):

All day - collections, lapidary displays, educational displays, & others

9 am - Welcome and brief explanation about the Action Team & project future

9:15 am - Keynote speaker

10 am - workshops

10:30 am - workshops

11 am - workshops

11:30 am - workshops

Noon - lunch on your own (many restaurants located within 2 miles)

1-3 pm - Geology ID contest

1-3 pm - Geology ID of specimens

1-3 pm – people available to answer questions

1:30 pm – Quiz Bowl Juniors

2:30 pm - Quiz Bowl Seniors

4 pm – wrap up/feedback/questions/ideas for future workshops

There are some display boxes available to purchase and pick up, and more can be preordered for a later date. Look at the previous issue for more information on boxes.

There is no fee for the workshop day. Everyone is welcome to come and learn!

You can sign up for the workshop day here.
https://docs.google.com/forms/d/e/1FAIpQLSfuTtnEJ5DPjRjZZTTGtSUlWm2IF6wbMEv_ozpJBOwRZQZd_w/viewform

If you have a submission you would like to have considered for the newsletter, you can send them, along with your name and county, to Natasha Graham, the 4-H Geology Project Leader in Johnson County, at nlgraham95@gmail.com

Brachiopods

By Brenden Crouch

Do you know what fossil Brachiopods are? They are a phylum of shelled marine creatures that can be found in a lot of places in Eastern Kansas. There are still some around today, but not as many as there used to be. There were around 30,000 species of Brachiopods, now we have around 300. They thrived in the Paleozoic Era, and were more diverse than bivalves during that time period.

Brachiopods can be identified by their line of symmetry. Their shells are not mirror images of each other, they are more like a hamburger bun, with a different top and bottom. They did not have two mirrored imaged shells similar to your right and left hands like oyster shells. The line of symmetry on a brachiopod cuts through the center of the two shells the same way a hamburger would be cut in half if you could not eat an entire hamburger!

Photo from Serious Eats Blog.

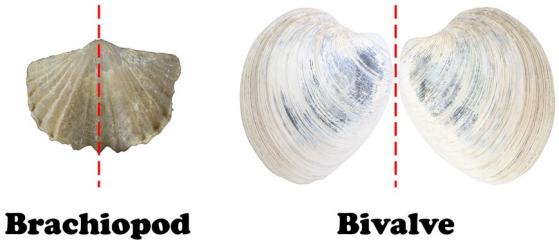

Photo from the Digital Atlas of Ancient Life.

Brachiopods only lived in salt water and not freshwater. Brachiopods were filter feeders. Instead of using gills, they had a lophophore which they used to breathe and filter food. They had a structure called a pedicle that helped them attach to the floor of the ocean on a hard surface or burrow in the sea floor. The pedicle came out of a hole in one shell called the ventral valve or pedicle valve. The other shell was called the dorsal or brachial valve. Once attached they remained stationary.

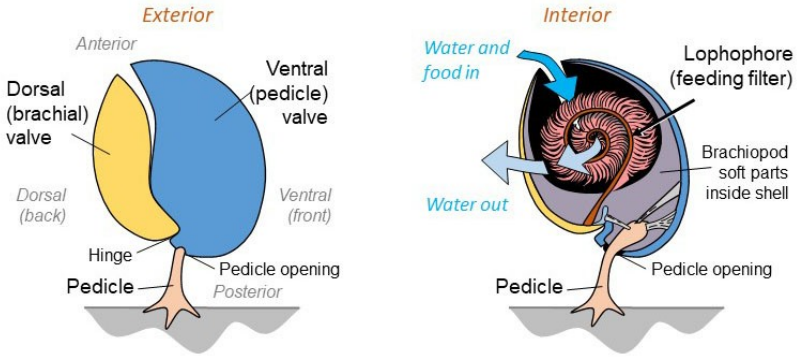

Diagram from Kentucky Geological Survey.

Brachiopods used to be divided into two classes as Articulata and Inarticulata. But testing done at a molecular level has revealed that there is a better way to classify these organisms. They are now divided into four classes: Strophomenata, Rhynchonellata, Lingulata and Craniata. Strophomentata and Rhynchonellata are both part of the previous Articulata class. Ligulata and Craniata make up the previous Inarticulata class.

Some common Kansas fossil Brachiopod genera in the Strophomenata Class are Chonetinella, Echinaria, Hystriculina, Meekella, Derybia, Reticulatia, Neochonetes, Meekella, Linoproductus, and Juresania. In the Rhynchonellata Class common Kansas fossil brachiopods include: Composita, Crurithyris, Dielasma,

Enteletes, Hustedia, Neospirifer, Phricodothyris, Punctospirifer, Rhipidomella, Schizophoria, and Wellerella. In the class Lingulata you can find the genus Orbdiculoidea and in the class Craniata you can find the genus Crania here in Kansas.

Hope this information helps you understand the way Brachiopods lived and how they survived in the ocean.

Works Cited

Kansas Geology, May 2025, kansasgeology.weebly.com/.

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My Kansas Septarian Nodule

By Joshua Seeger

Found June 14, 2025 – Blue Hills Shale, Jewell Co, KS

On June 14, 2025, I found the largest septarian nodule I've ever found, an absolute beast pulled from the Blue Hills Shale of Jewell County, Kansas. When I finally got it cut open, polished it, and cleaned it, it felt like I was holding a piece of Earth's history in my hands. And in a way, I was. Septarian nodules may look like simple "mud balls" from the outside, but inside they hold a story that began almost 100 million years ago.

Back in the Cretaceous, Kansas wasn't prairie, it was seafloor. The Western Interior Seaway stretched from the Gulf of Mexico to the Arctic, and anything that died in that shallow sea—plankton, plants, tiny animals—settled into the mud. As that organic material decayed, it released gas that disturbed the surrounding sediments. Over time, that soft, organic-rich patch hardened first, creating the early form of what would become my concretion. Minerals like aragonite and calcite began to cement the mud together, forming a solid ball around whatever lay at the center.

As the concretion dried, it shrank, and that shrinking created the star-like cracks called septaria, which are the thin fractures that sometimes resemble turtle shells or lightning bolts when the rock is cut open. Later, mineral-rich groundwater flowed through the area, depositing layers of calcite inside those fractures. That's what gives these nodules their iconic golden veins. After millions of years of erosion, Kansas finally gave one up to me.

Once I got the nodule home, the real work started. It was far too large for a standard rock saw, so I attacked it with a reciprocating saw and a grinder. It took over an hour of steady cutting before the concretion finally split open, but the result made every minute worthwhile. After cutting, I washed the whole piece thoroughly, especially the big calcite pocket it held, because any leftover dirt would scratch the surface during polishing.

Then came grinding. Using a grinder with a sanding disk, I leveled out all the high spots to get a flat, smooth surface. Once that was ready, I switched over to polishing pads on a variable-speed corded drill, working from 50 grit all the way up to 6000. I went around the surface twice with each grit, keeping everything wet so I wouldn’t burn the stone or leave scratches. When the polishing was finished, I washed the piece again, let it dry, and used a foam pad with auto rubbing compound to bring out the shine. One final rinse later, the whole surface glowed.

What started as a mud ball on an ancient seafloor is now one of the most striking pieces in my collection. The process was long, dusty, and loud, but seeing the yellow calcite veins flash in the light made it more than worth it. The best part is that this method works on almost any rock, but few reveal a story as old, or as beautiful, as a Kansas septarian nodule.