

What Can Kesler Science Do for You?

4th - 8th grade science teachers love our Life, Earth, and Physical Science materials! With these easy and engaging materials, teachers can save planning time and put their focus back on the teaching that really matters.



5E LESSONS

Two-week lessons with over 100 topics



ESCAPE ROOMS

Engaging activities for review



INQUIRY LABS

Three different levels to fit every student



AMAZING ANCHORS

Anchoring phenomenon to book-end your lessons



SUB PLANS

Never worry about planning for a sub again.



WARM-UPS

Bellringers for the entire year



STATION LABS

Student-led exploration



INTERACTIVE NOTEBOOKS

Bring science journals to life.



WIKI TICKETS

Quick formative assessments



STEM CHALLENGES

Real-world STEM problem-solving



GRAPHING

Table and charts and graphs ... OH MY!



SCIENCE READING COMPREHENSION

Leveled reading passages with mini-activities



SPANGLER COLLABORATION

Exclusive Steve Spangler lessons and videos



WRITING PROMPTS

Writing activities covering 100+ topics

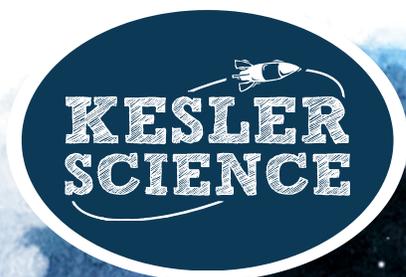


EXPLORIES

Story-driven units with integrated activities



The Kesler Science Professional Learning Network (PLN) group on Facebook has a huge community of engaged and supportive science teachers - come join us!



The Weird Life of Periodical Cicadas



A periodical cicada

Ah, summer! Cookouts, swimming... and the incessant buzzing of bugs.

In most areas, the sounds of cicadas are just part of the seasonal background noise. If you noticed that the summer of 2024 was a little noisier than usual, you could have been in the middle of a "cicada convergence" event!

Periodical cicadas live in the ground for most of their lives. They spend that time underground as nymphs, feeding off the xylem of tree roots. Then, like clockwork, a huge group of them will emerge for a few weeks. We're talking billions of cicadas pushing out of the ground!

Each population follows its own timeline for emerging, and scientists call those groups of little noisemakers "broods." There are 15 broods in the eastern US, each emerging on either 13-year or 17-year cycles. In 2024, the two largest broods, brood XII and XIX, emerged at the same time, over a lot of shared territory. That meant **trillions** of bugs.



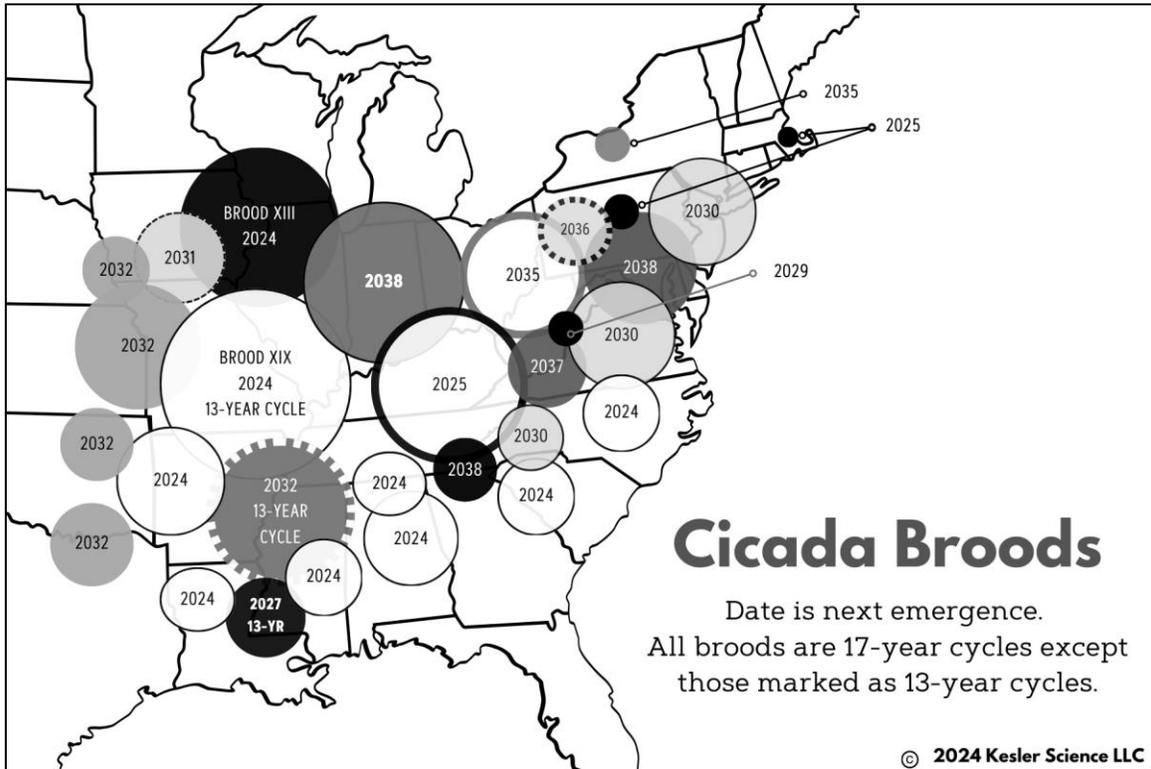
Two broods have emerged at the same time before, like the double brood in the summer of 2014, but they don't usually overlap geographically. Fun fact: the last time brood XII and XIX came out at the same time, Louisiana had just become a state!

Periodical cicadas only live for a couple of months once they pop out of the ground. First, they molt, leaving behind those cool exoskeletons you can find on tree trunks later. Then they mate and deposit eggs beneath the bark of twigs on a host tree.

Periodical cicadas are famous for two reasons: their **huge numbers** and their **noise**. The gigantic population sizes are actually a pretty brilliant way to overwhelm potential predators. Keep that in mind as you see these bugs clinging to every object in the neighborhood.

Periodical cicadas can make noises up to 100 dB in volume - that's as loud as a lawnmower! It's only the males that produce noise, though. In order to get the attention of the female cicadas, males will activate little membranes in their abdomen called tymbals. These organs vibrate and the sound is amplified by their exoskeleton.

Should you expect periodical cicadas in your neck of the woods this summer? That depends on where you live. Check out the map, on the next page, of cicada broods in different states of the Eastern US.



1. In how many separate sites did cicadas emerge in 2024?

2. In the summer of 2025, where could you go to see a 17-year cycle brood emerge?

3. The map shows very little overlap between cicada emergence areas. Use your knowledge of ecosystems to predict why this is true.

Fun fact about periodical cicadas: they're edible. I'm sure you'll see videos of people chomping on cooked cicadas from that summer. 🙄

If you faced a cicada invasion in 2024, I hope you were able to enjoy the wonder of the impressive natural cycles that made it possible!

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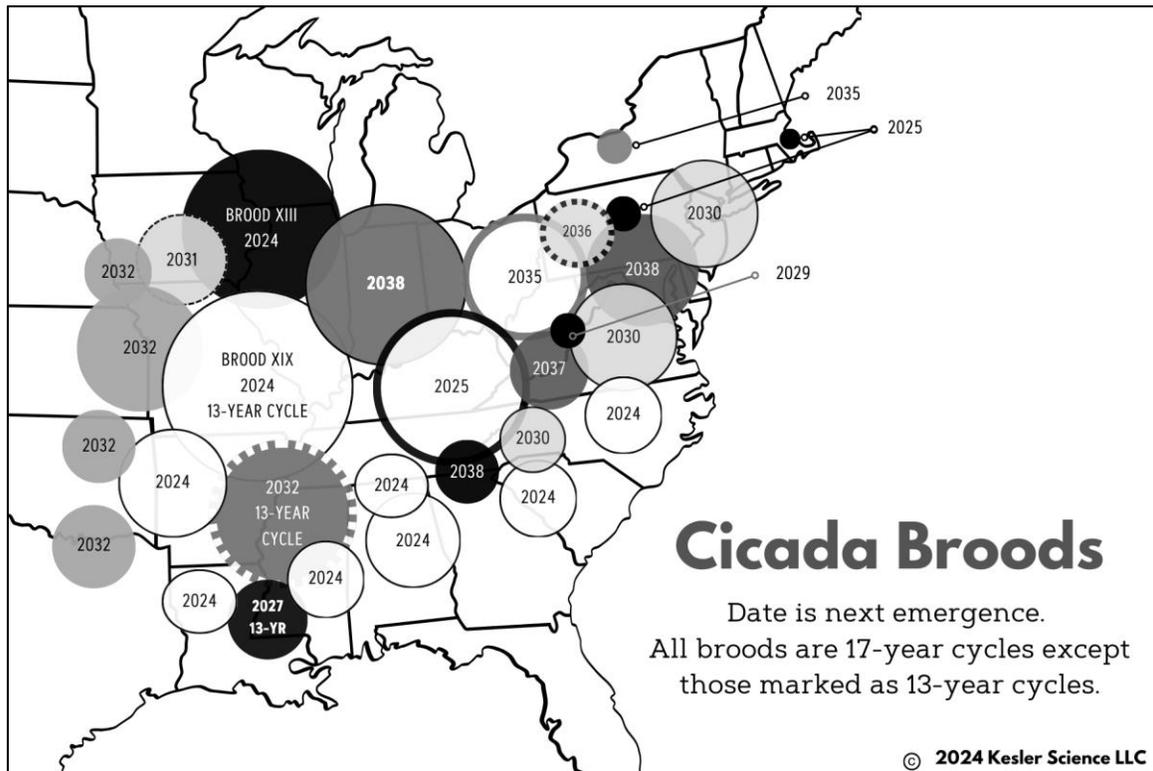
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1. In how many separate sites did cicadas emerge in 2024?

There are 17 different places where either the 17-year cycle or 13-year cycle broods emerged in 2024.

2. In the summer of 2025, where could you go to see a 17-year cycle brood emerge?

The 2025 emergence area covers Kentucky, Northern Tennessee, West Virginia, Virginia, Southern Ohio, and Indiana.

3. The map shows very little overlap between cicada emergence areas. Use your knowledge of ecosystems to predict why this is true.

Student answers may vary, but lots of competition over limited resources might harm cicada survival rate. There might also be physical boundaries, like mountain ranges or rivers, that separate the emergence areas.

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