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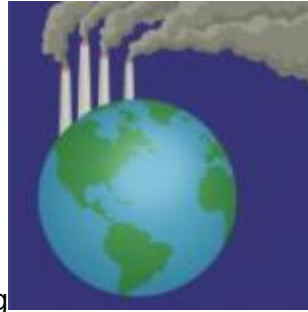
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My ecology unit started in an unusually urgent manner—with a call to the doctor.

"911, this is an emergency! Let's get some vitals on the patient, stat!" Now we weren't in an emergency room, nor had any student collapsed. Instead, we were in my classroom, my students were the doctors, and the patient was planet Earth. For the next few weeks, my students set out on a journey to take the Earth's vitals and diagnose our planet's condition.

How did we get to this point in my classroom? Well, for the first time this school year I was responsible



for teaching medical biology. This meant that I would be teaching the normal biology curriculum in the context of the medical world. As every teacher knows, your first year of teaching a new topic can be tough. So when it came time to cover ecology, I connected the unit to the medical field by treating Earth as the patient and having my students act as the doctors, taking an analytical approach to diagnosing Earth's current condition and working together to cure its ailments.

I started our analysis of Earth's condition by asking the students what we would need to know to confirm Earth should be rushed to the emergency room. Carbon cycling, the water cycle, biodiversity, solar exposure, all came up as we brainstormed how to measure the health of the Earth. As the list grew, it became obvious where our research needed to begin. My students decided that they needed to look at the patient's history, environmental factors, and current symptoms to assign a prognosis. As we talked about how to measure the Earth's health, my students were already discussing "treatments" for the Earth, and I knew that patient Earth was in good hands.

Over the next two weeks, I asked the questions that drove the students down new investigative avenues. Although I pointed my students in the right direction, they were the ones who really took off with the activity. We discussed human population dynamics, validity of data, and the current efforts to slow the rise of global temperatures. Ultimately, the students produced a complete and final write-up of Earth's condition. In the end it was the students, not me, who were talking about how climate change affects Earth's various systems. They used evidence from the past and present to diagnose the Earth with a big old case of anthropogenic climate change.

By the end of my ecology lesson, I could tell that the 'Patient Earth' activity had made a lasting impression on my students. There were a number of crucial pieces to the teaching approach that helped create an engaging and effective learning environment. By treating the Earth as a patient, we created a framework to couch a very large question that could have been potentially overwhelming to students. Also, instead of telling kids "the facts", my questions forced students to focus their research and utilize their critical thinking skills like professional scientists. In the end, even the few kids who felt that humans had no role in global climate change were convinced otherwise. If only we could get some adults to look at the data more objectively!

I'm writing this the day before the students take their ecology test, and I'm hopeful that their learning was as solid as I think it was. Does your next climate change unit need resuscitation? If so, I'd highly recommend putting your students in charge and "calling the doctor."

Brendan Casey is a biology and medical biology instructor at Granite Hills high school in El Cajon, California. He is on NCSE's teacher advisory board and a card-carrying member of the [NCSEteach](#) [8].

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