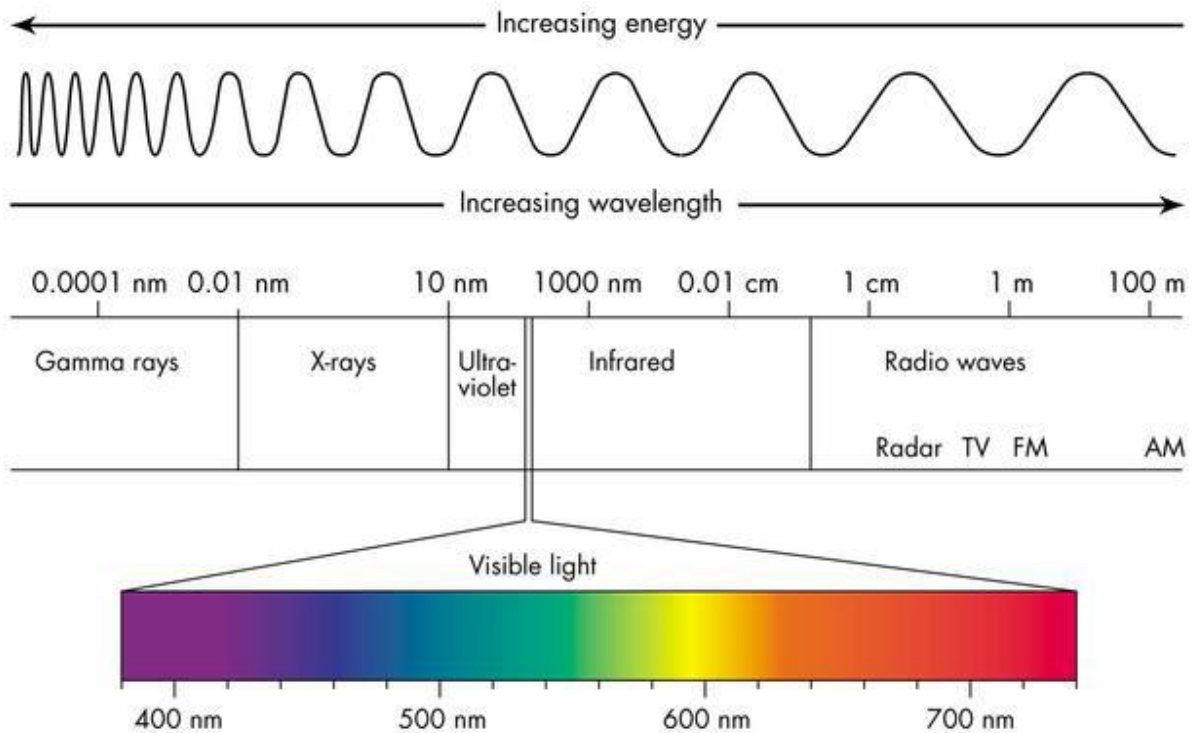


On trash cans and the Electromagnetic Spectrum

This is the Electromagnetic Spectrum:



We've all seen it. We've studied it and been tested on it, and many of us have taught it. But how many of us understand it?

I do.

The reason I understand the Electromagnetic Spectrum is not because I studied it or taught it, though I've done both. I understand the electromagnetic spectrum because one stormy Monday morning in 2014, I had a weird, irrational need to purchase a trash can.

I have no idea why I felt it necessary to get in my car and drive to Bed, Bath & Beyond in the middle of a thunderstorm in order to get a new trashcan, but that's what I did. As I was pulling into the parking lot, I saw a massive bolt of lightning strike on the other side of town. At the exact moment of the strike, the radio went to static, and before the thunder could follow several seconds later, I realized that I had EXPERIENCED the Electromagnetic Spectrum.

What happened is obvious: the radio station's transmission tower had been struck by lightning. What I realized in that parking lot listening to that static is that I had never truly understood what I had studied and taught so many times over the years. Bear in mind, when I had been taught the electromagnetic spectrum in school, I have no doubt whatsoever that I aced the tests and quizzes. I had been born to memorize and regurgitate.... It was my gift!

What I had not understood until experiencing that bolt of lightning was that radio waves and all of the other waves on the electromagnetic spectrum all travel at the same speed as light. The difference is not in the speed of the wave but in the wave's length. It suddenly seemed so obvious!

I was so excited by "my discovery" that I distinctly recall running into Bed, Bath & Beyond, hopping on their WiFi and sharing my experience on Facebook. I tried to explain what happened and why it was so significant to me, but I don't know that I could capture the magnificence of the experience. They would probably need their own relevant experience in order to make it real.

At Sci-Port, this is what we try to do. We provide an informal science education experience that we hope will complement the formal science education work that you and your students put in in the classroom. Our explicit goal is to provide the hands-on experiences, both through our activities and exhibits, to make concrete the abstractions studied in the classroom in order to encourage a passion for lifelong learning. We can't always produce a bolt of lightning—technically, I guess, we COULD—but we can produce snakes and alligators, liquid nitrogen demonstrations, scale models of planets, beds of nails, etc. – just the kind of practical, anchoring experience that can serve to spark curiosity about the world around us.

We are here to help inspire your students before a new unit, reinforce learning after a unit, review material through a fresh perspective or reward kids for a job well done. We are looking forward to your next visit, and we hope that you won't hesitate to ask if you think there is a way that we can help inspire your future doctors, engineers and astronauts!