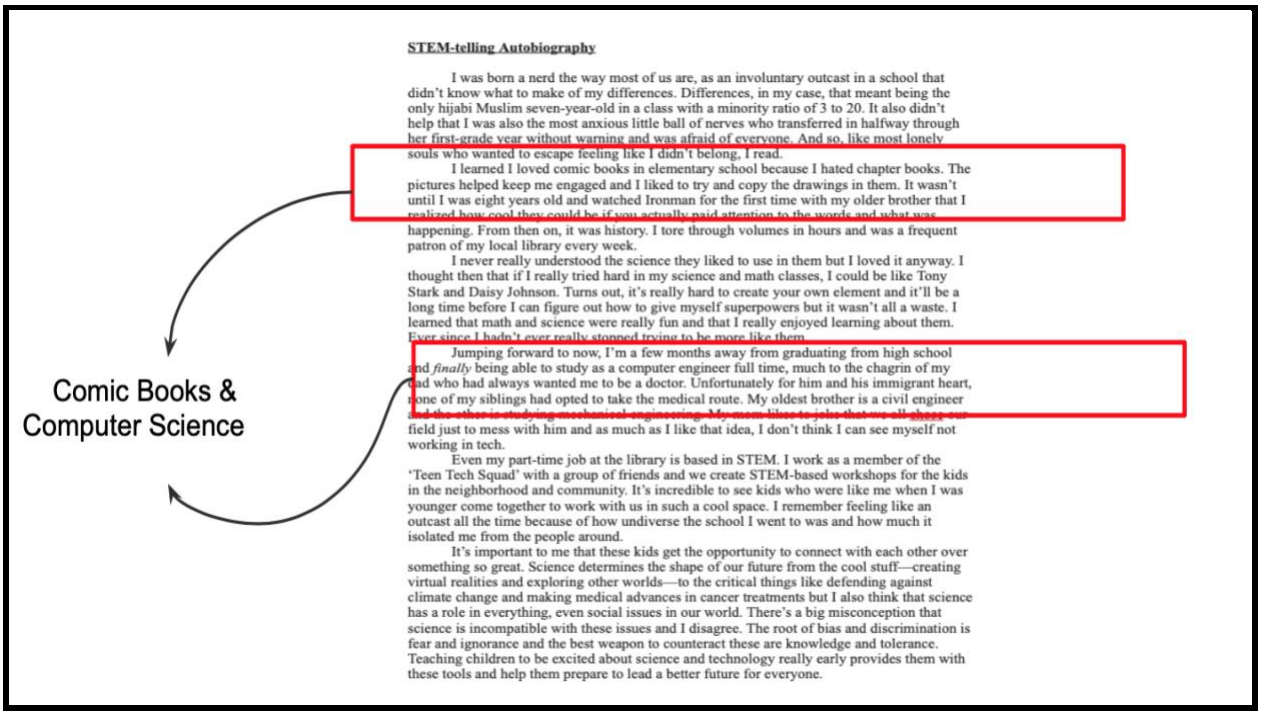
STEMtelling

STEMtelling: Narrative science practices for students to connect their own lived experiences, identities, and relationships to STEM.



STEM-telling Autobiography

I was born a nerd the way most of us are, as an involuntary outcast in a school that didn't know what to make of my differences. Differences, in my case, that meant being the only hijabi Muslim seven-year-old in a class with a minority ratio of 3 to 20. It also didn't help that I was also the most anxious little ball of nerves who transferred in halfway through her first-grade year without warning and was afraid of everyone. And so, like most lonely souls who wanted to escape feeling like I didn't belong, I read.

I learned I loved comic books in elementary school because I hated chapter books. The pictures helped keep me engaged and I liked to try and copy the drawings in them. It wasn't until I was eight years old and watched Ironman for the first time with my older brother that I realized how cool they could be if you actually paid attention to the words and what was happening. From then on, it was history. I tore through volumes in hours and was a frequent patron of my local library every week.

I never really understood the science they liked to use in them but I loved it anyway. I thought then that if I really tried hard in my science and math classes, I could be like Tony Stark and Daisy Johnson. Turns out, it's really hard to create your own element and it'll be a long time before I can figure out how to give myself superpowers but it wasn't all a waste. I learned that math and science were really fun and that I really enjoyed learning about them. Ever since I hadn't ever really stopped trying to be more like them.

Jumping forward to now, I'm a few months away from graduating from high school and *finally* being able to study as a computer engineer full time, much to the chagrin of my dad who had always wanted me to be a doctor. Unfortunately for him and his immigrant heart, none of my siblings had opted to take the medical route. My oldest brother is a civil engineer and the other is studying mechanical engineering. My mom likes to joke that we all chose our field just to mess with him and as much as I like that idea, I don't think I can see myself not working in tech.

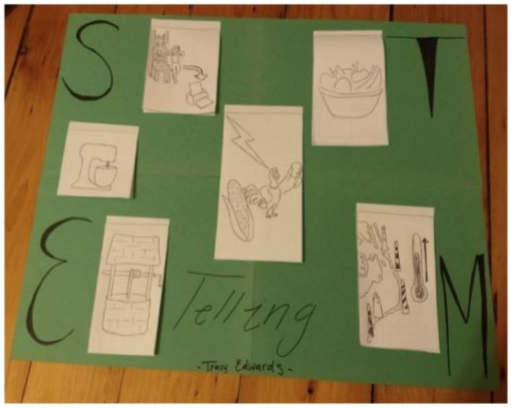
Even my part-time job at the library is based in STEM. I work as a member of the 'Teen Tech Squad' with a group of friends and we create STEM-based workshops for the kids in the neighborhood and community. It's incredible to see kids who were like me when I was younger come together to work with us in such a cool space. I remember feeling like an outcast all the time because of how undiverse the school I went to was and how much it isolated me from the people around.

It's important to me that these kids get the opportunity to connect with each other over something so great. Science determines the shape of our future from the cool stuff—creating virtual realities and exploring other worlds—to the critical things like defending against climate change and making medical advances in cancer treatments but I also think that science has a role in everything, even social issues in our world. There's a big misconception that science is incompatible with these issues and I disagree. The root of bias and discrimination is fear and ignorance and the best weapon to counteract these are knowledge and tolerance. Teaching children to be excited about science and technology really early provides them with these tools and help them prepare to lead a better future for everyone.

Segment of Hanan Barre's STEMtell she wrote in 2017 when she was in 11th grade. Hanan is now a freshman at the University of Minnesota pursuing a degree in Computer Science.

Example of a participant STEMtell poster

Example of a participant STEMtell powerpoint



Example of a participant STEMtell flipbook

Hobbies

The lens of biology is always shaping and improving one of my favorite hobbies: walking.

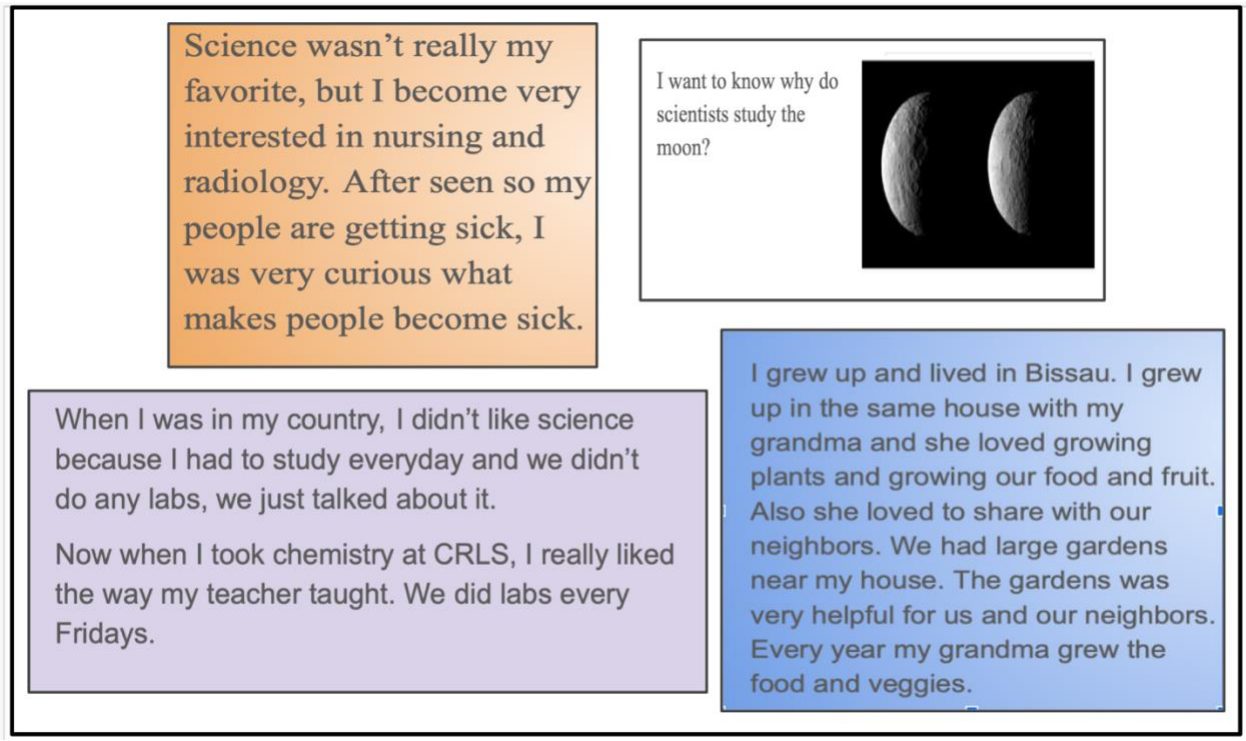
I'm always looking for patterns in nature. Spirals are extremely common in plants (the leaves often grow in a spiral fashion in order to maximize sun exposure).

Ecotones, which are biologically rich spaces where one ecosystem meets another, are always interesting to spend time looking through.

Heliotropism (plants growing toward the sun) is a nice phenomenon to be aware of because it can help you find south on cloudy days.

There's so much more to talk about, but, I've run out of room...

Examples of pre-service teachers' STEMtells created during their science methods class at Harvard Graduate School of Education, 2018.



STEMtells from students at Cambridge Rindge & Latin High School who are learning English while taking Biology, 2019.

STEMtelling at the Harvard Innovation and Ventures in Education (HIVE) pitch competition at the Harvard innovation labs, 2019.