

Connecting Science to Real Lives

Developing Empathy with Climate Stories

Lisa Swenson, Marshall School, Duluth, MN, USA

Abstract

This article describes the development of empathy in 8th grade before students conduct interviews for a design thinking project on environmental sustainability. The goal of this lesson is for students to develop a better understanding of how people hold different views on climate change and their connections to the climate they live in. The use of the text *Unikkaaqatigiit: Arctic Weather and Climate Through the Eyes of Nunavut's Children* to demonstrate climate stories, as well as other texts, helps students be more prepared when entering into conversations with others about their needs in creating a sustainable society.

Keywords

empathy, climate stories, design thinking, interview, sustainability

Narrative Framing

Teaching Earth Science at a small independent school in Duluth, Minnesota, climate change is an integral part of my 8th grade course. Understanding climate science and how it is gathered, analyzed, and presented is important for both students and adults, as it helps dispel distrust in the scientific process. However, teaching climate science is like giving a 30,000-foot overview to this topic; its view is just too broad and overwhelming. Students need something tangible in order to feel like they can be a part of the change. I saw the need to create a human action-centered unit that would empower my students to see how they could make real change in our climate crisis. Over the years I sensed that my students were overwhelmed by what they were learning whenever we tackled environmental science topics. What follows is a description of a portion of this unit on how I developed empathy in my students using climate stories and interviews for a design thinking project on sustainability.

To bring this topic closer to my students, at a more 10,000-foot level, we began by discussing why there are different attitudes towards climate change. As we have been learning about climate science along the way, students wonder why some are still skeptical about the urgency of this issue. I also wanted to help them understand that some of the people they are going to talk to for this project have their viewpoints for a reason and to allay any concerns they may have about broaching this topic with them. So, at this point, I introduced my students to Yale's Program for Climate Communication's Global Warming's Six Americas (2025), which breaks down the different types of American attitudes on climate change. Students took the test themselves to see where they fall, and they discuss which category they think their family members might be. This prepared my students for the interview stage of the project and helps them empathize with their "users"—the people on which they focused their sustainability project.

Using Stanford's Institute for Design process for design thinking, empathy-building is one of the first steps in designing novel ways to solve a problem (Howard Plattner Institute, 2010, p. 2). Creating empathy for others' situations around climate change is a crucial step, as it helps us to see problems in a different light. Middle school students sometimes come into climate discussions with prejudgments on climate change, which can come out in the questions that they ask. Having an open mind and going in with genuine empathy is crucial for a productive interview (ibid). One way to do this is through engaging with first-hand accounts or stories. Connecting to fictional characters helps students absorb other people's perspectives while still holding onto their own

experiences. This broadens the student's worldview without them feeling threatened and shutting down their willingness to listen. (Abramson, 2021)

Part 1: Building Empathy Through Climate Stories

To ground this topic, I asked my students first write their own climate story, describing a place they enjoy using sensory details (Figure 1). My students really enjoyed this step and were eager to share their stories of life at the lake, time on the hockey rink, hikes in the Superior Hiking Trail. It was clear at this point that they were ready to step away from the science and wanted to make connections with others about the environment.

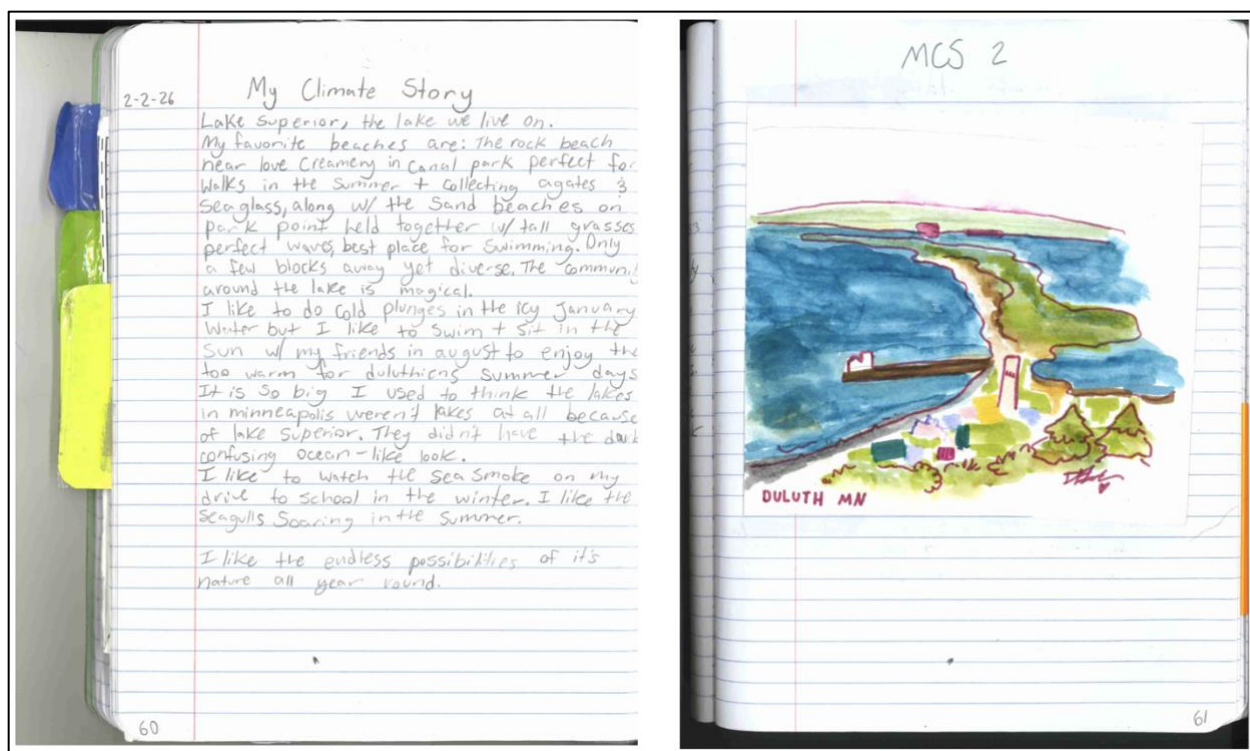


Figure 1: One student's climate story.

Next, we engaged with stories of the Inuit in Canada's Arctic. In the first book, *Unikkaaqatigiit: Arctic Weather and Climate Through the Eyes of Nunavut's Children*, we read first-hand accounts of Inuit life in the arctic from children and adults. Excerpts tell us about life in this area, shaping our understanding of how climate impacts culture: "The weather also affects our traditional clothing when they are made. When the women bleach the skins of a seal for women's kamik, they do this in April when the sun is not too hot to burn the leather" (Natcher, et al., 2013, p. 70). We discussed some of the ways of life for them, observing the pictures and language (text is in both native and English

text), comparing and contrasting to what we do in northern Minnesota. Additionally, we listened to interviews from elders about how life in the arctic has changed over the years due to climate change.

After engaging with the stories, I guided my students through questions after viewing the stories to help pull out possible “pain points” with the environment, or problems that are occurring. This was an important discussion, as it gave my students a sense of what kind of information we are looking for when they do their own interviews. I asked:

- What are some themes that you heard in these stories?
- What concerns did you hear/read?
- What kinds of motivations or goals do you think these people have for their lives?

At this point, I told students they would conduct their own interviews in the hopes of gathering climate stories and grounding our work with those around us. I required one parent and then someone who has a different viewpoint than the parent (going back to the Six Americas lesson) or someone with strong ties to the environment. They brainstormed questions in their groups (“Tell me about” or “Describe” as sentence starters), and I guided them to include these questions:

- Describe an outdoor place you feel most connected to.
- How has it changed over your lifetime? Please describe it to me.
- How does the environment where you live shape who you are or how you live?

We discussed the importance of asking “why” questions when interviewing, as it gets to the heart of the story, building empathy with the interviewee. With this list of questions, students were required to record the interview, take a picture with their interviewee, and submit a summary of what they learned.

Part 2: Define

In their sustainability groups, my students shared their interview stories. They recounted their experiences and the stories they gathered, and just like we did with *Unikkaaqatigiit*, helped each other identify the themes and pain points for each interview. They enjoyed talking with each other about what they learned from their interviewees and would have liked to continue for many more class periods talking about their experiences. This topic was now real to them. In reading through their reflections after the unit concluded, I was struck by the insight my students had about this point in the process (Figure 2).

What I learned from the stories is that the places had meaning to me and my interviewees. The places also changed over time or was affected in different ways. The stories always brought out the best in the place not the negative of it in the stories. Lastly the stories made the interview more interesting instead of just asking questions which brought up the mood.

When I was writing my climate story, I was thinking about how terrible it would be if my space was altered. I think that this is probably what helps create the empathy. Thinking about how terrible if your favorite place was altered, and realizing that someone else's is. My interviewees climate stories enforced this determination as well, I heard about someone else's favorite spot was being changed and that created an empathetic bond between us.

Figure 2: Screenshots from student reflections on the interview process.

Creating empathy through shared stories grounded the science in real life and helped my students during what is often the most challenging stage of design thinking: defining the users' needs (here, the interviewees) in order to bring clarity to the task at hand (Howard Plattner Institute, 2010, p. 3). They then created Need statements, which further clarified the problem, using the phrase, "how might we... so that.... ". For example: "How might we reduce the amount of trash Arctic animals get exposed to so that they don't get sick and die?"

Part 3: Ideate, Prototype, and the Summit

Connecting science and real-life experiences helped my students see that they could address climate problems, even if it was not about solving all of climate change. Several activities helped my students understand the design process: a rapid-fire brainstorming session for each Need statement, developing prototypes, and writing presentations of what they believed were novel solutions to an individual environmental concern.

As a result, my students came up with some novel solutions to help combat climate change and its impacts. This process helps them feel invested in being part of the solution to our current environmental challenges. The Sustainability Summit at the end of the unit was a success and inspirational. Parents, teachers, and students came to hear the pitches of their solutions, voting on which one they would "invest" in (Figure 3).

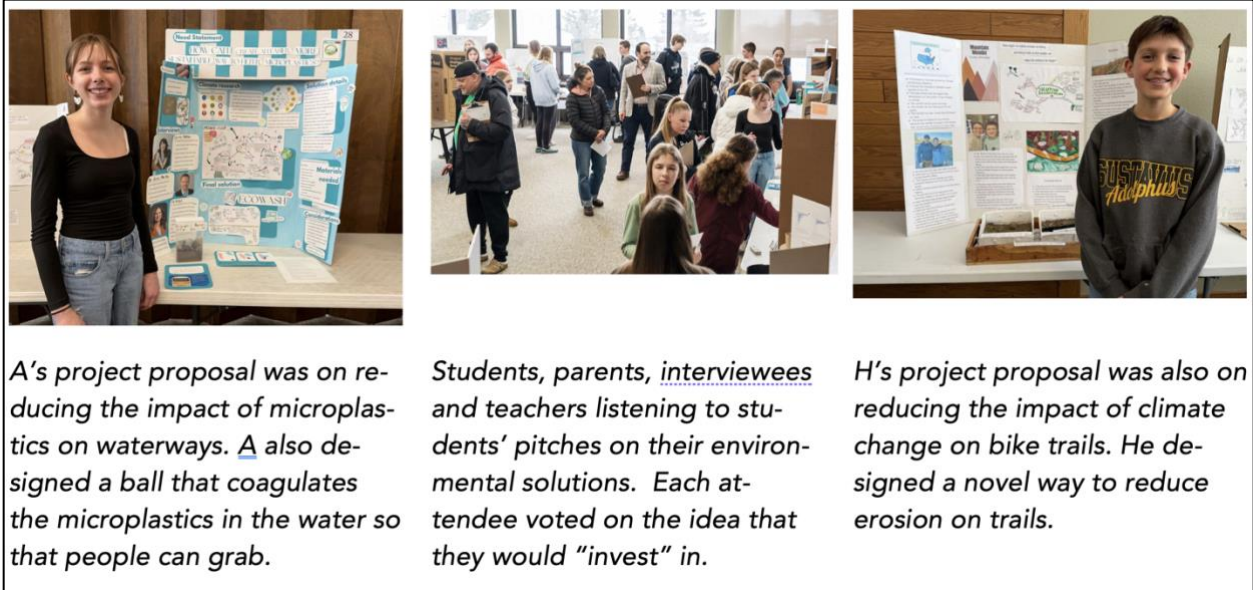


Figure 3: Photos from the Sustainability Summit

The Summit was an exciting time for my students to showcase their hard work and understanding of all the layers of knowledge it takes to make a climate solution a realistic one that addresses both a person's needs and that of the environment. They were able to communicate their knowledge to the public of the climate challenges that face us and the humans behind it. Creating empathy through climate stories was key for making this happen (Figure 4).

This project changed by thinking by making me feel more connected to nature. This is because I got to hear stories from many different people about how nature affects them. This could be the stories that caused my peers to come up with their solution, or my interviewees climate stories. These made me realize how much nature impacts people, making me realize how important it is and making myself appreciate it more.

This challenged my thinking because it forced me to think differently. This helped me create solutions that weren't only for myself, but for others to. It made me think about what is ethical. It also made me think about what is sustainable and what problems were bigger than others.

Figure 4: Screenshots of student reflections on the project.

At a Glance

Title	Connecting Science to Real Lives: Developing Empathy with Climate Stories
Unit Time	approx. 4 hours plus student-conducted
Grade Level(s)	8th grade
Core Text	<i>Unikkaaqatigiit: Arctic Weather and Climate Through the Eyes of Nunavut's Children</i> by Neil Christopher, David Natcher, and Mary Ellen Thomas (Eds)
Supporting Texts	• Inupiat Elder Delano Barr Talks about Climate Change in Shismaref, Alaska, 2019 (YouTube) • Subsistence, a Way of Life: How Climate Change Is Affecting Alaskan Traditions (website)
Climate Literacy Terms	climate change, solutions, climate stories
Objectives	Students will build empathy for others' individual experiences with the environment and climate. They will use this empathetic foundation to create a sustainable solution for the environmental needs of their "users" in a design thinking project.
Materials and Resources	• Climate Action and Sustainability Slide Show • Building Climate Empathy Slide Show

Going Forward

The types of need statements that my students initially came up with made me realize that I needed to guide them to ask about more day-to-day concerns. Need statements such as "Ms. F needs a way to clean the air so that she can canoe with her baby when there is wildfire smoke in the air" or "Mom needs a way to keep the temperature cool so the glaciers don't melt" were too broad and overwhelming. It was as though my students were going back to the 30,000-foot level of climate change with climate science and not empathizing with individual experiences with the topic. This may also be due to the high-level way adults often view this issue, so creating questions about their day-to-

day interactions with the climate rather than “climate change” may be a more effective way moving forward.

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