



Talk Climate: Tips for Scientists Discussing Climate Change

Start Where You Are

When we present the science and impacts of climate change to students or public audiences, it can be deeply concerning for kids and grown-ups alike. This handout focuses on how we can share climate information in age-appropriate ways that are clear about the urgency of the climate era while remaining sensitive to the discomfort that comes with this knowledge. Anxiety, anger, grief, and feelings of helplessness and hopelessness are natural responses to learning new, distressing information about our world. How we present the material, especially if we focus on purpose and empowerment, has a huge impact on how it lands for our students and the public. We *can* share climate information with honesty and in ways that leave people feeling empowered and capable to face the challenges of the climate era.

Many of us in science were taught, and many of our colleagues continue, to present ‘just the science’. This is akin to a health professional giving test results (just the science) and then failing to share ideas for treatment and healing. Like health professionals, scientists need to empower young people, students, and adults alike, with the tools for individual and collective actions needed to address and soften the landing into the new climate era.

“In the face of climate change, hope only comes in the form of action.”

[Jamie Margolin](#), 17, Zero Hour Founder

Talk and Encourage Action

Sharing personal climate stories, especially when they connect with your audience, is a powerful way to share information and relate it to things people care about. It helps audiences to better understand why you became a scientist and why you care about climate change, which in turn makes the story more tractable. Learn about the ways that climate change affects your community and what actions you can take individually and collectively. How you take action on climate is going to depend on how you choose to use your available resources for climate action. Your choice of action involves your voice, time, energy, and/or finances to make individual and collective changes. And it all starts with talking.

Start from the heart. Start by talking about why it matters to us, to begin with genuinely shared values.

Are we both parents? Do we live in the same community? Do we enjoy the same outdoor activities: hiking, biking, fishing, even hunting? Do we care about the economy or national security?

~ [Katharine Hayhoe, PhD](#)

Connect with local organizations and build community around climate action. Taking climate action as part of a community decreases isolation and increases connection and support. There are a number of climate organizations you can point your audiences to or join as a scientist. Here are just a few in the Seattle area: Front and Centered, Sunrise Movement, Got Green, Futurewise, 350.org, March for

Science, Union of Concerned Scientists, 500 Women Scientists, Fridays for Future, Parents for Future, Extinction Rebellion, and Climate Action Families.

Climate Justice

Climate change impacts people in front line communities who are already vulnerable today as well as future generations who cannot yet speak for themselves. The richest 0.54% (~42 million people) in the world emit more emissions of greenhouse gases than the poorest half of the global population (~3.6 billion). It is the wealthiest countries, corporations, and people in the world whose actions are causing climate change through high consumption lifestyles, and those who live in the Global South, and Black, Indigenous, and Latinx communities, who suffer most from the impacts. By the end of the century, climate related death rates in low income countries by [106.7 deaths per 100,000](#), while rich countries are projected to see heat-induced death rates decrease by 25.2 deaths per 100,000. Sea level rise, ocean acidification, and global warming are exacerbating air pollution, heatwaves, disease spread, hurricanes, fires, flooding, drought, food insecurity, mass extinction, and [driving climate migration](#).

Climate and environmental justice entails dismantling systems of oppression using a care and repair approach, with environmental reparations and an equitable sharing of resources at its foundation.

Some examples where this work is needed include:

- Fossil fuels burned in cars, airplanes, ships, buildings, and homes are responsible for [1 in 5 deaths](#), with most of the death in China (3.9 million), India (2.5 million), and parts of the US, Europe and Southeast Asia, according to a recent [Harvard study](#). Even children aged 0-4 are impacted with 876 deaths in North America, 747 in South America and 605 deaths in Europe.
- The healthcare industry is responsible for [10% of all US carbon emissions](#), and 9% of harmful non-greenhouse air pollutants. Health impacts of burning medical waste perpetuates environmental racism, as incineration sites are often located near communities of color.
- West Coast Wildfire Smoke disproportionately impacts the housing insecure, elderly, very young, and those with compromised respiratory and cardiovascular health. Community care and repair is exemplified by [mutual aid efforts](#) by community groups such as Got Green and The Station Cafe, in Seattle, Washington, responding to community need for box fan air filters and HEPA filters during fire smoke events.
- Ambient and household air pollution: children who live in homes that use methane ‘natural’ gas have a [42% increase in asthma symptoms](#), and a 32% increased risk of having current and [lifetime asthma](#). This is in addition to already [elevated incidence rates of asthma](#) for children in low-income, Indigenous, Latinx, and Black communities growing up in close proximity to fossil fuel infrastructure and freeways due to heightened exposure to toxic particulates such as PM2.5 and benzene. [Other health effects](#) from PM 2.5 include cardiovascular effects and cancer.
- Urban Heat Island Effect: Temperatures in cities vary greatly depending on the amount of tree cover and greenspaces in a neighborhood. The [hottest parts](#) of cities are historically [redlined neighborhoods](#) where discriminatory practices by homeowners associations, banks and insurance companies limited the purchase of homes by Black, Indigenous, Asian and Jewish people. For instance, days over 90F in [Seattle](#) have more than doubled since the 1940s. The number of days over 90F increased from an average of 3 days per year to over 6 days per year. Those living in redlined neighborhoods are most impacted by increased summertime heat and urban heat island effects.



As much as the science is heartbreaking, I think it's really important to say, "OK, well, we can't solve climate change or make it go away. It's here. But how can we still create the best of all possible futures for the people and the ecosystems and the communities that we love?"

~ Ayana Elizabeth Johnson, PhD

Laying a Foundation to Talk Climate with Young People

Let's be honest, talking about climate change with young people can feel downright scary and uncertain, especially if we've never done it before. Worry that we will terrify children can stop us in our tracks. The belief that we aren't "expert enough" can leave us feeling ill-equipped in bringing up the topic or answering basic questions. These experiences are normal, even amongst scientists who study and teach climate science! The reality is, young people are going to hear about climate change sooner rather than later. Talking about it in an informed and developmentally guided way helps build a strong foundation for them to weather the uncertainty and adversity of a rapidly changing world.

In addition to being a scientist you are likely also a caregiver, teacher, parent, grandparent, aunt, uncle, or mentor of children in your family or community. And with your scientific background, you are uniquely equipped to navigate climate conversations. Young people need us to help them understand how their climate is changing. It's especially important that we also empower them with the tools to advocate for a stable and healthy climate, planet and society.

Respond with Developmental-Attunement

Preschoolers are developmentally falling in love with the natural world and understanding their connection to it. This is a time to build awareness of ecosystems and connections between them, and all of us. Participate in activities such as tree plantings or park clean-ups, which emphasize the message that earth is our shared home that we love and care for.

Elementary-aged kids are learning cause and effect alongside basic science. Around age 7, focus on how actions can make a difference. Invite kids' natural problem solving abilities into making greener decisions and traditions at home, school and in community, such as gardening, camps, and clubs. Avoid messages that may elicit hopelessness, as research shows this can foster anxiety and fear of the natural world. Use art, music, and storytelling to help kids imagine and create a healthier and more just world.

Tweens and Teens are generally concerned with the world outside of home and are exercising independence. Adults can help them build on their innate desire to lead and take action. Teens and tweens are at a natural developmental stage to become independent leaders and drive their own climate actions with the support of adults in their lives. As adults our job is to say 'yes' and find ways to support their ideas. Young people are motivated by peer social interactions and often find satisfaction engaging in projects and actions where they can make a difference together. Actions can include joining or starting a youth climate action organization with friends and peers such as: Sunrise, Fridays for Future, or Zero Hour. Other actions include creating art, music, or stories with a climate or justice theme. Our role as adults is to find supportive ways to say 'yes' and to empower their ideas and projects.

While engaging in climate action is often a [protective factor](#) for mental well-being, [adolescents](#) appear to be more vulnerable to climate related anxiety, depression, and suicidality than younger children. Adults need to help connect teens who are exhibiting



concerning changes in mood, behavior, or functioning to mental health supports. If you think a teen is at-risk, look for [warning signs](#) of teen suicide and seek immediate [help](#). That said, building a healthy, adaptive relationship with the facts of our changing climate, is basically a required skill for adulthood in the climate era. Our responsibility as adults is to help the next generations stay informed while also processing the forms of grief that comes with knowing the facts and experiencing climate change.

ACTIONS speak louder than words

In order to make the necessary systemic changes, to soften the impacts of climate change and protect our future, we need everyone to actively work toward shifting culture. Cultural change comes from engaging, with frequent conversations, education, research, advocacy, actions, art, and activism. Below are a few ways you to contribute to collective action and address climate change:

1. **Talk Climate!** Research shows that talking about climate change within our sphere of influence, including with people at work, school, and with family, friends, and in our neighborhoods and communities, is the most important thing we can do to promote climate action.
2. **Climate Justice!** Elevate and participate in groups addressing systemic injustice, including racial, economic, and housing. As Ugandan climate activist Vanessa Nakate said, “We cannot achieve climate justice without racial justice.” Addressing long-standing systems of injustice are critical for getting to the root causes of climate change and helping those experiencing the greatest impact already.
3. **System Change!** It is systemic change that will ultimately allow us to address the climate crisis. At the same time, our individual choices have a ripple effect within our social circles. That shifts culture to affect the systemic changes needed to address the climate crisis.
4. **Empower Yourself and Young People!** Voice your climate concerns and ask for the specific changes you want from those in power. Research shows young people are influential in shifting the adults in their lives' views on climate. Involve and support students and young people in community and civic action, and in developing relationships with politicians and decision makers.
5. **Protect and Restore Nature!** Participate in projects and programs that repair and bring improvements in health to people and the planet. These can include community tree plantings, tree preservation, removal of invasive species, and garbage pickup events. Join a ‘citizen scientist’ group to collect information aimed at improving the health of communities, and of land, air, and water. Participate in or donate to food justice projects such as pea patches, food forests, and community-led farms. Encourage your town or city to adopt a school garden program and landscape practices that include native species or plants that can adapt to your changing climate (such as drought-tolerant, fire-resistant, heat-tolerant, pollution-tolerant plants and trees). If you have a lawn, explore ways to make it more climate-friendly such as: adding a vegetable garden or fruit trees; adding plants that support birds, bees, and butterflies; or installing a rain garden to protect waterways from pollutant runoff.



6. Individual Choices Ripple Out to System Change!

- Reduce gas fueled transportation including air and auto travel
 - Take a train or road trip instead of flying - explore your region
 - Make your next car 100% electric, and push for electric public transport
 - Bicycle, and advocate for more protected bike lanes, trails, and walkable neighborhoods
- Adopt a planet friendly diet
 - Eat local and organic as much as possible, and ask your school or work to offer organic and local options.
 - Reduce or stop eating meat and dairy, and ask your school or workplace to offer more dairy-free and meat-free protein options.
 - Start a garden or join a community garden.
- Reduce food waste
 - Plan meals and get creative with leftovers.
 - Groups like Buy Nothing can connect you with neighbors to share extra food.
 - Ask your city to offer composting service, or compost in your yard or community garden.
- Shift to renewable power and electric appliances
 - The most efficient cooking is electric induction.
 - Electric Heat Pumps are most efficient for heating and air conditioning.
 - Solar has dropped in price by more than half in a decade. Ask your city or state to build solar and wind energy that everyone can benefit from, and if you can afford to, install solar on your roof.

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