



11 Do's and Don'ts of Teaching Climate Change

Although the reality of climate change is not debated within the scientific community, it is one of the most politically contentious scientific topics of our time. Although most Americans [agree](#) that schools should teach about climate change, there are many [barriers to climate change education, including uncertainties](#) on the part of teachers and administrators about how best to discuss the topic with students.

The following quick list of dos and don'ts summarizes NCSE's views on effective climate change education.

✓ *Do incorporate climate throughout the science curriculum*

Climate is one of the big [unifying concepts](#) in science. It bridges Earth, atmospheric, ocean, and environmental sciences as well as biology, chemistry, and physics. Spiral climate change through the curriculum; teach it early and teach it often.

Each of NCSE's climate change [lesson sets](#) was designed to address specific misconceptions about climate change. They can be taught all together or inserted separately into appropriate units as a flexible way to thread climate concepts throughout the curriculum.

✗ *Don't be disrespectful or demeaning*

Be careful not to use language, activities, or resources that could be viewed as an attack on religious or political viewpoints. NCSE advocates a [no-conflict approach](#) that continually points students towards the science because students are more likely to [engage](#) with the content when they feel comfortable expressing their questions, concerns, and ideas.

✓ *Do pay attention to misconceptions and misinformation*

While the tone must always be respectful, [misconceptions and misinformation must be confronted](#) in the classroom. Teaching students how to identify misinformation or biased arguments, evaluate sources for validity and reliability, and analyze potentially misleading data helps them to resolve misconceptions and to be on the lookout for misinformation in the media they consume. It is important to let students share their ideas freely and use evidence and critical analysis to identify misconceptions and misinformation for themselves, with appropriate guidance from their teachers.

While all of NCSE's lesson sets were designed to address specific misconceptions, [Scientific Consensus: A Tsunami of Evidence](#) includes activities that teach students about analyzing arguments, misinformation, and logical fallacies often used by climate change deniers.

✗ Don't debate

Allowing students to debate scientifically uncontroversial facts about the causes and effects of climate change [misrepresents](#) the overwhelming consensus among scientists and scientific evidence that climate change is happening and is caused by human activity. It also presents a false model of the way in which science is conducted.

✓ Do present authentic data

Use [real data](#) (collected by scientists or the students themselves) to engage students in activities that parallel the way in which science is conducted whenever possible instead of using abstractions or hypotheticals.

NCSE's [Back to the Future: Climate Edition](#) is a great example of a lesson that allows students to analyze authentic data to form conclusions about historic climate trends.

✗ Don't ignore the social and political controversy

Ignoring a problem won't make it go away. The old saying, "I only teach the facts" just doesn't cut it when students come to class unwilling to learn about something based on a preconceived bias. Science and data are not partisan, though policy often is. Show students that it is possible to [understand and appreciate](#) climate science and climate solutions regardless of their religious, political, or economic philosophies.

✓ Do discuss the human side of the science

Science is a [human endeavor](#), and it is important for students to appreciate that it is conducted by humans. Engage students in learning about how scientific models of climate change have evolved over time and the scientists who have contributed to this work. Use narratives ([written or audiovisual](#)) of the scientists and science of climate change. Reach out to local experts like university science professors and meteorologists for help and reinforcement.

NCSE's [Understanding Climate Modeling](#) is one example of a lesson that allows students to

investigate how climate models are used by scientists and how these models have changed over time.

✗ *Don't let uncertainty stop you*

Just because we don't know everything about [climate change](#) doesn't mean we don't know anything about it. Take the opportunity to teach about the nature of science. [Appendix H](#) of the Next Generation Science Standards details the basic understandings about the nature of science that all students should master. These are particularly helpful when dealing with scientific uncertainty and climate change

✓ *Do emphasize the local effects of climate change*

[Show](#) students how climate change is affecting, or will affect, them [personally](#). Climate change isn't confined to melting glaciers and flooding coasts; it affects all regions, although in different ways. Consider local field trips or inviting local speakers to demonstrate the local impact of climate change.

NCSE's [Climate Change in Your Own Backyard](#) gives students the opportunity to investigate climate impacts on a global scale and then narrow their focus through various regional and community activities.

✗ *Don't overemphasize the climate crisis*

Focusing on only the gloom and doom of climate change may cause fear, guilt, and anxiety for students. In addition to the possible [emotional distress](#), this will make students less receptive to learning the content.

✓ *Do emphasize the reasons for hope*

Learning about climate change can trigger negative feelings, especially for students. To help stave off anger, fear, guilt, anxiety, and hopelessness, it is important to counteract the emotional impact of learning about climate change. This can be done by teaching about climate mitigation and adaptation [solutions](#), organizing school or community activities, and spending time in nature.

NCSE's [Climate Super Solutions](#) is a lesson meant to infuse students with hope by investigating the economic, social, and environmental impacts of climate solutions.