Teacher's Guide: Speaking Your Mind About Global Warming

Recommended Grade Level: 6–12

Suggested Time: Three class periods, plus approximately five additional days spread out over a few weeks to complete video production

Activity Objectives

- Assess one's own understanding of global warming, including its causes, effects, and possible solutions
- Learn about the physics of the greenhouse effect and how human activities are intensifying this effect
- Learn about two proposed technological solutions for decreasing our contribution of greenhouse gases to the atmosphere
- Identify an idea that will serve as the focal point for a video about global warming and then develop that idea into a video treatment or storyboard and a script
- Produce a video that conveys this main idea (Note: Even if students won't be able to produce the video, completing the activity to the end of preproduction is a good alternative to a more standard quiz or essay assessment.)

Materials

- Computers with Internet access
- Materials and equipment for video production (which might include video cameras, microphones, headphones, lights, video editing software, as well as sources of stock video, images, and music)
- PDF handouts from this activity, including treatment-writing and scripting worksheets and tips sheets about camera techniques, audio recording, and editing

Overview

Global warming—and the larger issue of climate change—are topics that have gained increasing attention in recent years. The amount of information, and misinformation, that your students are exposed to has probably left some of them feeling overwhelmed and not knowing quite what to think or where to turn for clarity. Others may feel more certain and have strong ideas about how we as a society, or as individuals, should address this pressing environmental issue.

Having students create a video project is a good way to inspire them to think about what they know about global warming, to do research to learn more about the topic, and then to focus their thoughts and ideas into one clear presentation. The activity may also inspire students to take action in response to an important global issue—and to inspire others to act, too.

Creating a video that sends a coherent message requires more than just picking up a video camera and pressing "record." This activity walks students through the critical preproduction phase of video production to prepare them to begin acquiring and editing the material for their videos.

Before the Activity

- ❑ Review the activity online, and determine whether students will work individually, in pairs, or in small groups. You can wait to divide the class into teams at step 6 below if you want students to work individually or as a class on background content. If students will be working in teams, encourage them to discuss online and worksheet questions within their group and to hand in one worksheet per team.
- ❑ Provide an overview of the activity in order to establish your expectations about the work students will need to complete and what they will hand in at the end of the activity. If you decide to have them work in pairs or small groups, explain that they will need to work together to come up with a unified direction and to collaborate and share the work if their project is to be successful.
- ❑ Suggest a timeline for completing the different parts of the activity.
- ❑ Briefly describe the different steps they will go through as they develop their projects, and identify what they will have to do to demonstrate learning. For example, in addition to the treatment/storyboard and script they will write and the video production assignment they will complete at the end of this activity, tell students about any other printed work from the activity that they will need to turn in.
- ❑ Arrange computers so that students can work individually, in pairs, or in small groups, as you see fit.

The Activity

Introduction

With all the talk these days about the effects of global warming on our climate, many students may be overflowing with ideas about what climate change is and how to solve the problem. Others may be less inclined to give advice and more speculative about why climate change is occurring in the first place. Regardless of their views, your students may not have had the opportunity to develop and present an idea about global warming to their classmates.

This video production activity adds a creative and technical element to learning about global warming that will hopefully inspire students to explore the topic more deeply, and enable them to present their ideas in such a way that they will not only be heard, but also remembered. Activities such as this can also make young people feel more empowered about an issue that may otherwise seem too large or complex for them to do anything about.

Note: Although the concepts of “global warming” and “climate change” are often used interchangeably, they are not the same:

- Climate change is defined by significant changes in the average or typical weather characteristics of an area, observed over a decade or longer.
- Global warming refers to the increase of average global temperatures, especially since about 1880, a period in which Earth’s average temperature has risen by nearly one degree Celsius.

1. Starting with What You Know

This screen asks students to think about the very basics of climate science. A short video clip describes the physics of the greenhouse effect—the phenomenon that maintains a relatively consistent average temperature on Earth's surface and enables life to exist. The video also explains that human activities have intensified the greenhouse effect—and increased global temperatures—by increasing the quantity of greenhouse gases in the atmosphere. After watching the video, students are asked to print and fill out the Global Warming Connections worksheet. This is intended to help them assess their level of understanding about global warming and inspire further research. In the chart, they will place various things they know about global warming's causes, effects, and solutions into rows according to how well they understand the concept. You might suggest that individual students come up with at least six ideas and place each on the worksheet according to their understanding of those ideas; pairs and groups of students should probably generate more than six ideas. Let the students know in advance if they should hand in these worksheets or use them only for their own reference.

2. Global Warming—Our Contribution

To many people, global warming is an abstract concept. Your students probably know at some level that recycling or turning off unnecessary lights can play a part in slowing global warming. However, we don't often think that our activities can be measured in terms of the amount of CO_2 and other greenhouse gases they produce. This video clip assesses the greenhouse gas contribution of a variety of common societal practices and individual activities. After watching the video, students are asked to reconsider their Global Warming Connections worksheets and make any necessary changes or additions based on what they learned from the video. At this stage, students working in pairs or groups will want to discuss the revisions and additions they make to their worksheets.

3. Climate and Our Water Supply

Because so many of us have yet to experience any obvious impacts from global warming, it is important to be reminded that not everyone is so fortunate. For example, millions of people in Asia and South America are facing a potentially catastrophic water crisis as a result of global warming. As the video clip on this screen explains, warmer temperatures are causing Himalayan glaciers that serve as the water supply to one-half of the world's people to shrink. Without a change in the warming trend, this could have disastrous consequences for countless people. When students are finished watching the video, they are asked to answer several questions about it and then to update their worksheets.

4. Technology to the Rescue?

This screen highlights two potential solutions to the global warming crisis. The videos here describe the benefits and costs associated with "clean coal" and solar technologies. These examples are intended to make students aware—if they aren't already—that there is a range of potential solutions to the complex problem of global warming. In addition to reducing our energy consumption, we might also need to produce energy in ways that contribute fewer greenhouse gases to the atmosphere than current methods do. When students finish watching the videos, they are asked to assess the two technologies and to suggest any other potential

global warming solutions they know about. They are also asked to weigh the importance of cutting back on our energy use versus developing new technologies to reduce greenhouse gas emissions. They should also make any needed additions or changes to their worksheets.

5. Students Speak Out

Videos about global warming can address many different subtopics in a variety of approaches and styles. On this screen, students have the opportunity to watch four videos produced by students, which together demonstrate the point that there is no right or wrong way to create a project such as this. After watching the videos, students will compare and contrast the approach and style of each one. They will also spend some time deconstructing the video they liked best, describing why they liked it, giving its main point, and explaining how the video went about reinforcing that main point. By analyzing the videos, students will begin to think about the type of global warming video they might make.

6. What Do *You* Want to Say?

One of the first and most important steps in video production is figuring out what you want to say to an audience. On the preceding screens, students reflected on what they already know about global warming, watched videos, and answered questions about causes, effects, and possible solutions to this environmental problem. On this screen, students are asked to distill what they have learned or thought about so far during the activity and then come up with a focus for their own video project. Several questions on the screen are intended to prompt the students and help them refine their focus. The screen also provides them with a list of additional global warming and climate change videos on Teachers' Domain that might help them find an idea for their video.

Although you may choose to have students work individually on their projects, working in pairs or in small groups can be a good way for them to generate and fine-tune their ideas. If your students have been working individually up to this point but you plan to have them work in pairs or small groups on their videos, this is a good time to have them begin working together. Students who collaborate on an idea early in the process tend to be more invested in the project going forward.

7. How Do You Want to Say It?

A video begins with an idea, but any one idea can be presented in many different ways. On this screen, students will develop a treatment or storyboard, which should identify many of the stylistic and visual elements they want their video to contain. To do this, they will need to make decisions about the approach and style of their video, who their audience is, what imagery they want to use, and how they want to convey their ideas—through narration, interviews, or some other method.

Before they begin creating their own treatments or storyboards, students can see samples of these documents created by the young filmmakers who produced the four videos they watched on the "Students Speak Out" screen. These samples are meant to provide ideas about the types of information their documents should contain. In the samples, students should also begin to see the connection between the concept as it's written in the treatment or storyboard, and as it appears in the final video.

To create these documents, students can use either the provided treatment worksheet, a blank sheet of paper, or a blank document on the computer. Ask students to turn in their work so that you can review it before they continue on to the next phase of scripting. Make sure each document conveys a clear idea of what the video will show, how it will present this message, how the proposed style will support the message, and who the intended audience is.

8. The Script

A script is often associated with feature-length films, but it is also an important part of documentary production. A script can be thought of as an expanded and more detailed version of the treatment or storyboard. It describes what the viewer will be seeing and hearing at any given time during the video and organizes visual and audio elements by scene and in the sequence in which they will be presented in the video.

On this screen, students will be introduced to the concept of the script and will read an excerpt from a script that was written for one of the videos they watched earlier. They will then write their own scripts for the video they plan to make either on the script worksheet or in a computer document. Although there is some flexibility in how a script can be written, make sure your students clearly present the visual and audio elements in their scripts. The two-column format used in the sample script is a good way to do this. If students are using this format, you can expect a script for a video with a target length of three minutes to be about two to two-and-a-half pages long.

Scriptwriting can be difficult at this early stage of production. The many unknowns can make it challenging for students to be specific about the elements their video will include and how it will be constructed. This is an important part of the process, however. It requires scriptwriters to identify what they know and don't know, and challenges them to think about how they will convey their ideas through strong visual and audio elements. As your students work on their scripts, encourage them to be creative but realistic about the audio and visual materials they hope their video will include. Encourage them also to keep their main idea in mind and to include only elements in the script that serve this idea. Remind them that a script is a working draft, and they should make revisions as they learn more and begin to gather the material they will actually use in their video.

9. Producing Your Video

When your students finish drafting their scripts, they will have completed the preproduction stages of video production. This work will undoubtedly make the process of recording, assembling, and editing their projects more efficient, productive, and fulfilling.

The next stages of production are complex. How you will go about the process depends on many things: the time you can devote to the project, the equipment and other resources that are available to you, and what you would like the final outcome to be. What follows is a rough guide to the basic steps of video production, as well as additional resources you can use to help your students with their projects. If you would like a more in-depth and hands-on experience with all phases of video production, check out the teacher activity Learning Through Video Production.

The basic steps of video production include:

- Recording video
- Gathering stock images and footage
- Capturing digital assets
- Editing the video

Recording Video

If you have the time and equipment to let your students record their own videos, this can be one of the most enjoyable stages of production. Most students love experimenting with the equipment, recording each other, and playing back the footage. This experimentation and practice is an important part of production and will likely help students as they gather material for their videos. Still, it can be a challenge to keep students focused on capturing the material they will need. Recording quality video can be difficult as well.

To help students stay on task, you might suggest that they go through their scripts and identify the video and/or interviews that they will need to capture, and then come up with a plan and schedule for how they are going to gather this material. This list is what professional video producers refer to as a "shot list."

You can also help students avoid some common mistakes when they begin recording video by distributing and reviewing this handout: Tips for Recording Better Video and Audio.

Gathering Stock Images and Footage

Most videos include a mix of both original footage shot by the production team and preexisting, or "stock," video and images. Stock material enables your students to include images of Himalayan glaciers or Texas oil fields without leaving the classroom.

The number of sources of digital imagery online seems to grow every day. However, not all—in fact, very few—of these sources provide materials that your students have the legal permission to use. Media rights can be extremely tricky, so it's best to stick with sources that specialize in providing media for educational and other nonprofit projects.

You can find "open content" video clips in the *Teachers' Domain* Building Blocks collection. Other good sources of stock footage, images, and music that your students should be able to use are the Internet Archive, the WGBH Lab Sandbox, CC Mixter, and Creative Commons. See the complete list of these and other production resources at the end of this Teacher's Guide.

Capturing Digital Assets

The process of capturing digital assets into an editing system varies greatly from one hardware/software combination to another. Fortunately, this step has gotten much simpler in recent years. Often it is as easy as downloading a file from the Internet or uploading a file from a video camera or audio recorder and then importing the media file(s) into an editing system. The user guide that came with your editing software should be able to help you with this.

Editing the Video

Editing is one of the final steps in video production. It begins with assembling, or stringing together, the media assets you have recorded or acquired. Your students can begin this process before they have gathered all of their media. In fact, many editors assemble their videos as they capture each asset.

The script provides the blueprint for how the video should be assembled and where each asset should be placed. However, as mentioned earlier, the script is a working document and your students will have to be flexible in how they use it. They may not be able to get an interview or shot that they had hoped for when they wrote the script; they may also find or capture material that they couldn't have imagined earlier in the process.

As with writing, video editing is a process that requires multiple revisions. As they work on their videos, students might benefit from showing their early drafts, or "rough cuts," to you or their fellow students and getting feedback on their work in progress. Input about what works, what doesn't, and what could be shorter or longer can be invaluable during this important stage.

During the editing process, it is common for students to lose focus and get sidetracked by the technology. For example, they may want to add effects and graphic elements that are unnecessary and serve to distract the viewer from the main point of the video. This is natural, but encouraging them to emphasize their main ideas and to cut out unnecessary information and media elements will help them produce a better video in the end. Reviewing this list of Tips for Better Editing before they begin will also help them avoid some common editing mistakes.

Resources

Check out the following links for more resources about production and editing, digital storytelling, copyright law and open educational content, and sample releases.

Production and Editing

- Make Internet TV (http://makeinternettv.org/)
- One Minute Movies (http://www.bbc.co.uk/films/oneminutemovies/howto/)
- Video Nation (http://bbc.co.uk/videonation/filmingskills/index.shtml)

Digital Storytelling

- Center for Digital Storytelling (http://www.storycenter.org/resources.html)
- Digital Arts Alliance (http://www.digitalartsalliance.org/pre-production.html)
- Educational Uses of Digital Storytelling (http://digitalstorytelling.coe.uh.edu/)

Copyright Law and Open Content

- WGBH Lab (http://lab.wgbh.org/)
- Center for the Study of Public Domain: Bound By Law? (http://www.law.duke.edu/cspd/comics/)
- CC Mixter (http://ccmixter.org/view/media/home)
- Creative Commons (http://creativecommons.org/)
- The Free Music Archive (http://freemusicarchive.org/)
- The Internet Archive (http://www.archive.org/index.php)
- Podsafe Audio (http://www.podsafeaudio.com/)

Sample Releases

- UNC: Communication Studies Links (http://comm.unc.edu/mmlabs/help) (scroll to the bottom of the page for sample releases)
- NBPC: Producer Tool Kit (PDF) (http://www.nbpc.tv/media/files/3051/Insitute_Tool-Kit.pdf)