

# Today I Learned What Americans Think About Climate Change

## Description:

When discussing climate change in the media, we are often presented with two opinions: either climate change is happening, or it is not. The reality of American opinion is much more complex. After an introduction to media literacy, students explore data from the Yale Project on Climate Change Communication.

## Skills & Objectives

### SWBAT

- Apply media literacy concepts to evaluate a message in the media.
- Understand that American opinion on climate change is not as simple as two sides, and that most Americans are concerned about climate change.
- Describe some patterns of American opinion on climate change.

### Skills

- Media literacy
- Data analysis
- Critical thinking

### Students Should Already Know That

- Statistical methods can be used to model a larger population from a smaller sample size.
- Policy changes at the national, state, and local level can have an effect on climate change.

#### Standards Alignment:

RST.11-12.9 Synthesize information from a range of sources  
HSN-Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  
HSS-IC.B.6 Evaluate reports based on data.

#### Disciplinary Core Ideas:

ESS3.D Global Climate Change



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## How To Use These Activities:



Pages with the circular “TILclimate Guide for Educators” logo and the dark band across the top are intended for educators. Simpler pages without the dark band across the top are meant for students.

Each of the included activities is designed to be used as a standalone, in sequence, or integrated within other curriculum needs. A detailed table of contents, on the next page, explains what students will do in each activity.

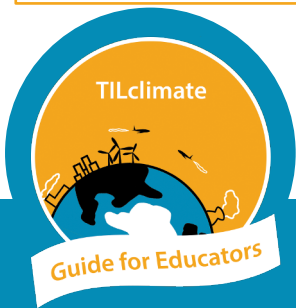
## A Note About Printing

All student pages are designed to be printable in grayscale, except for the graphs on page 6. A few copies of this page could be printed color for students to share, or the image projected in the classroom.

The worksheets do not leave space for students to answer questions. Students may answer these questions in whatever form is the norm for your classroom – a notebook, online form, or something else. This allows you, the teacher, to define what you consider a complete answer.

**Podcasts in the Classroom:** Throughout these Guides for Educators, we invite students to think about how they would share their learning with family and friends. One way to do this is to encourage your students to create their own podcasts - they're shareable, creative, and have multiple options for embedded assessment. We would love to hear any podcasts or see any other projects you or your students create! Email us at [tilclimate@mit.edu](mailto:tilclimate@mit.edu), Tweet us @tilclimate, or tag us on Facebook @climateMIT.

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## Detailed Table of Contents

You may notice that the estimated times have a wide range. Depending on your context, you may require simpler or more complex answers from your students. More complex answers will require more time.

Page	Title	Description	Time (min)
	Podcast Episode	Students listen to TILclimate: TIL what Americans think about climate change, either as pre-class work at home or in the classroom. <a href="https://climate.mit.edu/podcasts/e1-til-what-americans-think-about-climate-change">https://climate.mit.edu/podcasts/e1-til-what-americans-think-about-climate-change</a>	10-15
1-2	Media Literacy	A brief introduction to media literacy, followed by questions to practice evaluating a climate-related message in the media.	10-30
3	Cognitive Biases	An optional addition to the Media Literacy introduction. Students are introduced to two major cognitive biases that affect how we receive and evaluate messages.	10-20
4-6	Six Americas	Students are introduced to the work of the Yale Program on Climate Change Communication, which has defined six categories of American opinion on climate change. Students learn the six categories, make some predictions, and then evaluate the results of the December 2020 survey.	20-40+
7-9	Climate Opinion Maps (internet required)	Students explore data collected by the Yale Program on Climate Change Communication via an interactive map-based data visualization. Then, they are asked to evaluate the data for policy support and salience.	30-60+



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## What Americans Think

This Educator Guide includes readings, questions, and an investigation into data visualization. Educators may pick and choose among the pieces of the Guide, as suits their class needs.

Parts of this Guide may align with the following topics:

- Environmental science: climate change as a political matter
- History/social science: Politics, government, and public opinion
- ELA/nonfiction: Current events and media literacy
- Mathematics: Statistical data representation

For more on Media Literacy, visit <https://www.common sense media.org/news-and-media-literacy/what-is-media-literacy-and-why-is-it-important>

## MIT Resources

We recommend the following as resources for your own better understanding of climate change or as depth for student investigations. Specific sections are listed below:

- Climate Science, Risk & Solutions, an interactive introduction to the basics of climate change. <https://climateprimer.mit.edu/>
  - Chapter 01 A brief history of climate science
  - Chapter 02 The greenhouse effect and us
  - Chapter 07 Understanding risk
  - Chapter 09 How long can we wait to act?
  - Chapter 10 What can we do?
- MIT Climate Portal Explainers are one-page articles describing a variety of climate topics. <https://climate.mit.edu/explainers>
  - Greenhouse Gases
  - Carbon Pricing
  - Climate Targets
  - The National Climate Assessment



# Today I Learned What Americans Think About Climate Change

## Wrap-Up Discussion Questions

- Media literacy: Why is it important to pay attention to the who, what, and why of a message in the media?
- Six Americas: What do you think about these categories? How would you describe them in your own words?
- Six Americas: What events, stories, or people may have influenced the changes you noticed in the data over time?
- Climate Opinion Maps: What do you think impacts people's opinions on climate policy?
- Climate Opinion Maps: Were you surprised by any of the results?
- If you were designing a survey about people's opinions on climate change, what questions would you ask? Why?

## Climate Solutions

Climate solutions can be thought of as falling into four categories outlined below. Across all categories, solutions at the community, state or federal level are generally more impactful than individual actions. For example, policies that increase the nuclear, solar and wind mix in the electric grid are generally more effective at reducing climate pollution than asking homeowners to install solar panels. For more on talking about climate change in the classroom, see "How to Use This Guide".

### • Energy Shift

How do decision-makers make the switch from carbon-producing energy to carbon-neutral and carbon-negative energy?

### • Energy Efficiency

What products and technologies exist to increase energy efficiency, especially in heating and cooling buildings?

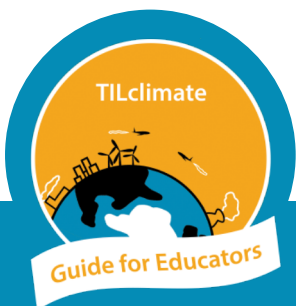
### • Adaptation

How can cities and towns adapt to the impacts of climate change?

### • Talk About It

Talking about climate change with friends and family can feel overwhelming. What is one thing you have learned that you could share to start a conversation?

What solutions are the most exciting in your classes? We would love to hear from you or your students! Images, video, or audio of student projects or questions are always welcome. Email us at [tilclimate@mit.edu](mailto:tilclimate@mit.edu), Tweet us @tilclimate, or tag us on Facebook @climateMIT.



# Today I Learned What Americans Think About Climate Change

“The media plays a super important role. And the reason is people, most people, do not read scientific reports. They really rely on the media to take these scientific reports and translate them into everyday language and sort of summarize them.”

*Prof. Parrish Bergquist, Georgetown University*

*TILclimate podcast: Today I Learned What Americans Think About Climate Change*

## Understanding the Media

News and entertainment media take many forms and influence our thinking about many things – not just climate science! *Media literacy* is the set of skills that can help us understand what we are being told and whether to believe it. The old saying “you can’t believe everything you read” extends to all forms of media. How do we decide what to accept and what to question?

## The Five W’s (and an H)

Taking a close look at any message can help us better understand it. Messages in this case can be news articles, podcast episodes, videos, advertisements... Really anything you read, hear, or watch. Be more aware of the messages you are getting by asking:



**Who made this?** Every piece of media was made by someone. Who are they and what are their credentials? Does that tell you anything about whether the message is trustworthy?



**Why was it made?** What is the goal of the message? Is it an advertisement, information, opinion? Is the goal clear, or does it seem hidden?



**What is missing from the message?** A content creator must choose what to include and what to leave out. What was left out?



**Who might benefit from this message?** Who would be happy to get this message? Who would be happy to have you receiving it?



**Who might be harmed by this message?** Who would be angry or hurt by this message? Who might not want you to hear it?



**How might different people interpret this message?** Is there background information you need to understand it? Does it assume you believe something?

# Today I Learned What Americans Think About Climate Change

## Who Is Talking About Climate Change?

Think of a recent message you have received about climate change. This could be a social media post, a news article, a video, a mention on radio or TV, or something else. If you haven't heard anything about climate change in a while, search a website or app you visit frequently for the term "climate" and see what comes up. These messages do not have to be formal news articles – they should be the kinds of things you see every day, however you interact with media.

## Question the Message



1. Briefly describe the message. What form did it come in? How did you find it?
2. Where did this message come from? Who made it? Was it made by the site where I am seeing it, or are they sharing someone else's messages? What are the credentials of the people who made it?
3. Why did they make this message? Are they trying to inform, persuade, cause an emotional reaction, or something else?
4. What is missing? If they include facts, do they say where they got their facts? If they do not include facts, are there facts that would help their argument?
5. Who might benefit? Is this message trying to persuade you to buy something, follow someone, or something else?
6. Who might be harmed? Is there language that would hurt someone? Is there information someone might not want you to have?
7. Would everyone see this the same way? Would someone who doesn't agree with you about political or other issues see this message the same way?

## To Trust or Not To Trust

8. After considering all these questions, do you think you should trust this message? Why or why not?
9. Would you recommend the source of this message to a friend? A family member? A teacher? Why or why not?

## Share

10. Media literacy is important for people of all ages. How would you explain it to a younger sibling, cousin, or friend? How about an adult friend or family member?

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## Cognitive Biases

Our brains work hard to decide which information to trust, and which to question. Some social scientists study how the human brain takes in and processes information. They have defined hundreds of *cognitive biases*. These are shortcuts that our brains use to help sort the information we are faced with every day. Without these shortcuts, we would be overwhelmed by choices all the time. Unfortunately, shortcuts can also lead to false information, biased thinking, and stereotypes.

There are hundreds of cognitive biases, but here are two that social scientists often point to when thinking about how we understand messages in the media and politics.



**Confirmation Bias** is an instinctive habit to accept new information that supports beliefs we already hold.

For example, if people have heard that red cars tend to speed more, they will notice when a red car zooms past them on the highway – even if five cars of other colors have already passed them.

Our brains *confirm* our existing beliefs by noticing the red car.



**Availability Bias** (also called the availability heuristic) is an instinctive habit to think things are more common if we have heard about them more often.

For example, if there have been a series of articles about a single shark incident at a beach, people are more likely to avoid the beach – even in areas where there are no large sharks.

Our brains make the shark stories more *available* to our thoughts.

## Check Your Biases

Thinking about the same message you considered on the previous page:

7. Is the source one that I tend to trust? When we get information from sources we trust, we do not tend to question it. This can lead to *confirmation bias* if our sources are biased or incomplete. On the flip side, if we do not tend to trust the source, we often will not accept information that we would otherwise. If your source is news media, you can check their rating on the Ad Fontes Media Bias Chart <https://www.adfontesmedia.com/>
8. Is the story one I have heard before? Even when our conscious minds know that we have seen a story before, our brains log each new reading as another time that the same thing happened. This can lead to *availability bias* and make us think that something is happening more often than it is.



# Today I Learned What Americans Think About Climate Change

"[Yale researchers] take a bunch of different questions about people's beliefs and attitudes about global warming and use them to categorize people into six different groups based on how concerned they are and how much people know about this problem."

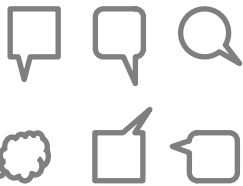
*Prof. Parrish Bergquist, Georgetown University*

*TILclimate podcast: Today I Learned What Americans Think About Climate Change*

## "Both Sides"?



In the media, discussions of climate change are often shown as a 'both sides' debate. We are presented with the opinion of a climate activist on one side, and a climate denier on the other. This makes it easy to believe that equal numbers of Americans fall into two separate camps when it comes to climate change.



Since 2008, scientists from Yale University and other institutions have surveyed over 22,000 Americans across all 50 states. They have found that people's opinions on climate change fall into six broad categories, not just two. Each of these categories respond to communication about climate change in their own ways.

## The Six Americas

According to the Yale Program on Climate Change Communication, the six categories of American opinion on climate change are:

### Alarmed

Convinced climate change is happening, is human-caused and is an urgent threat.

### Concerned

Think climate change is happening and human-caused, but impacts are distant.

### Cautious

Have not decided whether climate change is happening, human-caused, and/or serious.

### Disengaged

Know little about climate change and do not hear about it in the media or daily life.

### Doubtful

Do not think climate change is happening, or it is happening, but not human-caused and not urgent.

### Dismissive

Believe climate change is not happening, not human-caused, not a threat, and may be a hoax or conspiracy.

# Today I Learned What Americans Think About Climate Change

## What Do Americans Think?

1. What do you think about these categories? How would you describe them in your own words?
2. Which category would you\* fit into? What about your family or friends? Famous people you follow? How do you know what these people think?
3. What percent of Americans do you think fit into each category?
4. What information leads you to your predictions?
5. Do you think the number of people in each category has changed since 2008?

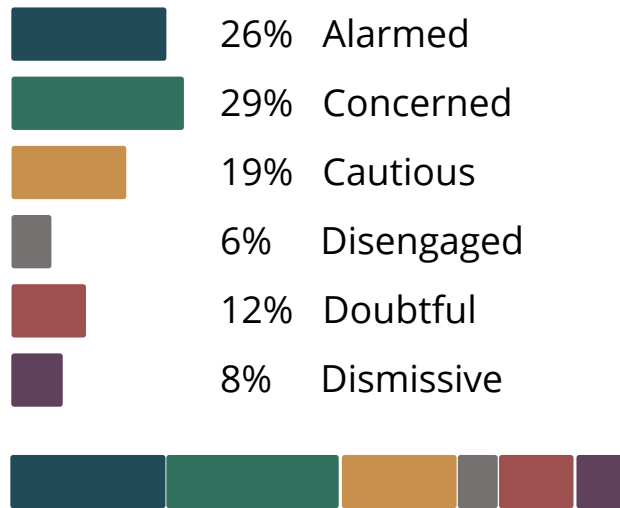
(\*Optional: take a 4-question quiz at <https://climatecommunication.yale.edu/visualizations-data/sassy/>)

On the next page, you will find the 2020 Six Americas results. After you read this page, come back to answer the following questions.

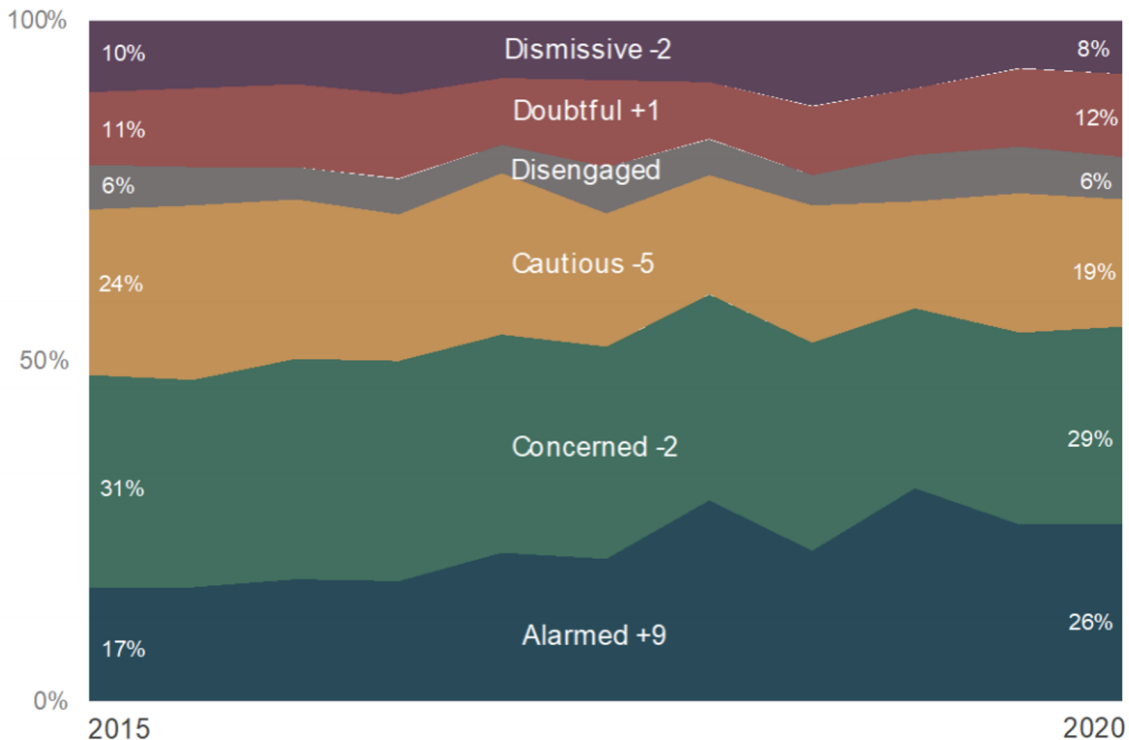
6. How close or far off were you?
7. Why do you think your predictions did or did not fit the collected data?
8. Are you surprised about these results? Why or why not?
9. Which of these categories of Americans would you expect to support or oppose climate-related policies?
10. How did American climate opinions change between 2015 and 2020?
11. What events, stories, or people may have influenced the changes you see?
12. What further questions do you have based on what you notice?

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## The Six Americas, December 2020



## The Six Americas Over Time



Data from 11 waves of the *Climate Change in the American Mind* national survey  
 October 2015 – December 2020 ( $n = 13,381$ )

<https://climatecommunication.yale.edu/about/projects/global-warmings-six-americas/>

Yale Program on Climate Change Communication & George Mason University Center for Climate Change Communication

# Today I Learned What Americans Think About Climate Change

“We can kind of think of two dimensions of public opinion about a particular policy. One is how popular the policy is. The other is how salient it is, which is how much people care about it.”

*Prof. Parrish Bergquist, Georgetown University*

*TILclimate podcast: Today I Learned What Americans Think About Climate Change*

## Yale Program on Climate Change Communication

Since 2008, scientists from Yale University and other institutions have surveyed over 22,000 Americans across all 50 states, and more than 3,000 counties. By studying climate attitudes at the state and local level, researchers are better able to model and visualize the diversity of public opinion across the country. The survey questions go into detail, which allows researchers, communicators, and others to ask about specific beliefs, risk perceptions, policy support, and behaviors.

## Climate Change vs Global Warming



You may notice that the Yale Program on Climate Change Communication uses both the terms “global warming” and “climate change.”

Carbon dioxide acts like a blanket, trapping heat from the sun. This is natural, but as we burn fossil fuels like coal, oil, and natural gas, we release a great amount of carbon dioxide into the atmosphere.

This extra trapped heat is warming the atmosphere, land, and ocean around the globe (global warming.)

Warmer air, water, and land are causing dramatic changes in climate patterns such as storms, heat waves, and flooding (climate change.)

A build-up of heat-trapping gases cause global warming, which causes climate change.

## What Are Your Questions?

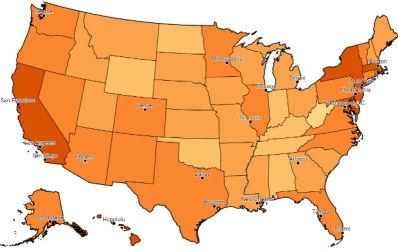
Think about what you know and have heard about climate change and public opinion.



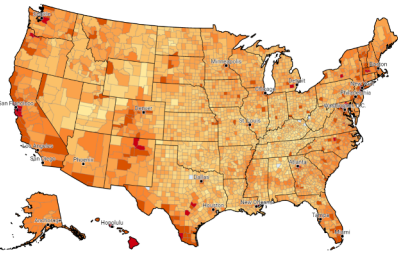
1. If you were designing a survey of your community, what questions would you ask? Consider each of the following categories of questions:
  - a. Agreement with the science of global warming.
  - b. Sense of risk from the effects of climate change.
  - c. Support for policies or laws related to climate change.
2. Which of these categories of questions are you most interested in?
3. What patterns would you expect to see across the US for these questions?

# Today I Learned What Americans Think About Climate Change

## The Yale Program on Climate Change Communication



Since 2008, scientists from Yale University and other institutions have surveyed over 22,000 Americans across all 50 states. Public opinion polling is often done at the national or state level, which gives a broad idea of American opinion.



The team of scientists at YPCCC have developed a statistical model that allows them to estimate opinions at the congressional district and county levels. This makes for a richer dataset that shows the variation in Americans' thoughts about climate change.

## Explore the Data

Visit <https://climatecommunication.yale.edu/visualizations-data/ycom-us/>

Explore the data, changing the questions from the drop-down menu.

1. What do you notice?
2. What questions do you have?
3. What happens if you zoom in on your state, or another state of interest?

Switch between National, States, Congressional Districts, Metro Areas, and Counties on the left side.

4. How does this shift change how you see the data?
5. Does each area on the map have the same population? Why is this important?
6. If you were showing this map to someone else, which scale would you use and why?

Scroll down to the bars that show national average answers to all questions.

7. What do you notice?
8. Which method of showing the data do you like best? Why?
9. Think about the questions you wrote on the previous page. Do you still have the same questions about American opinions on climate change? What new questions do you have?

# Today I Learned What Americans Think About Climate Change

## Policy Support and Salience

Visit <https://climatecommunication.yale.edu/visualizations-data/ycom-us/>

Scroll down to Policy Support. The estimated percent of Americans who agree with the statement are shown in orange (left), while those who disagree are shown in blue (right.) Undecided or unsure answers are shown in white in the middle.

Agree/Support

Unsure/Undecided

Disagree/Oppose

The first nine questions ask about specific policies related to energy production and use.

1. What do you notice about these nine policies? Are there any surprises?
2. What percent of people are undecided on these policies?

The second eight questions ask about who should address climate change.

3. What do you notice about these eight questions? Are there any surprises?
4. What percent of people are undecided on these questions?

Just below Policy Support are two questions about climate-related communication.

5. Given the answers to these questions, as well as what you observed in Policy Support – how *salient* do you think climate change is for most Americans? In other words, do you think most Americans think about climate change in their daily lives?
6. Why do you think this is?
7. What do you think impacts people's opinions on climate policy?

For an even deeper dive into the impact of demographics and politics on climate views, visit <https://climatecommunication.yale.edu/visualizations-data/americans-climate-views/>