## GOALS AND STANDARDS

1. Manipulate a model to compare and contrast local, state, and national climate change beliefs.

2. Explore how scientists use models to understand a problem.

3. Interpret data from a model.
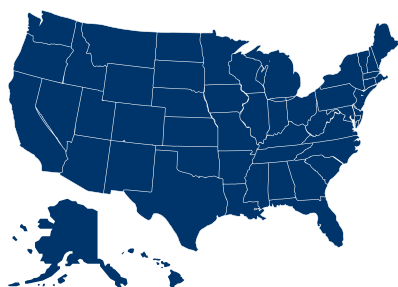
4. Make data-based decisions using a model.

**NGSS Science and Engineering Practices:** Analyzing and interpreting data; Engaging in argument from evidence; Obtaining, evaluating, and communicating information

**NGSS Standards:** MS-ETS1-1, HS-ETS1-1

## LEVEL

8-10 grade or anyone looking to practice data analysis, model manipulation, and storytelling skills in the context of climate change communication.
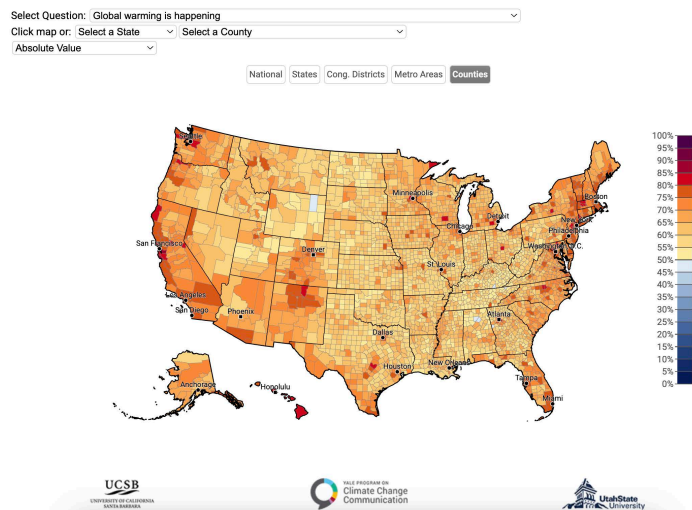
## BACKGROUND



The Yale Climate Opinion Maps (YCOM) allow users to visualize and explore differences in public opinion about global warming in the United States in unprecedented geographic detail. The Yale Program on Climate Change Communication regularly updates YCOM using national survey data in order to accurately reflect current public opinion. The interactive and up-to-date nature of this tool makes it a perfect model for students to manipulate in order to explore beliefs around climate change both locally and nationally.
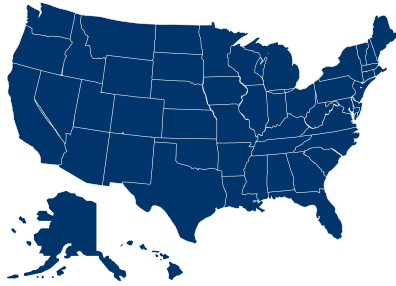
## ACTIVITY DESCRIPTION  (30 MINS)

Navigating the Yale Climate Opinion Maps is an activity that teaches students how to use the Yale Climate Opinion Maps by guiding them through its different features and functions. After leading students through some guided practice that has students explore climate beliefs in their own communities, the activity asks students to step into the shoes of a governor to make a data-based policy decision. An answer key has been provided following the Tips for Success.



## TIPS FOR SUCCESS

- Do the first couple of questions together as a class so students can become comfortable using YCOM.

- After students complete the question guide, talk about it as a class. What are the implications of having all of this data? Why is it important to have this data? What should we do now that we have it?

Welcome to the Yale Climate Opinion Maps. This tool is a fantastic way to examine how Americans' climate change opinions vary across the country. This question guide will help you navigate this interactive tool. You will be able to see how climate change beliefs in your own community compare to climate change beliefs across America as a whole.

## PART I: GETTING TO KNOW THE YALE CLIMATE OPINION MAPS

**1** Go to this link: **https://climatecommunication.yale.edu/visualizations-data/ycom-us/**

**2** Scroll down to where you see the image below. Do you see where it says, "Select Question"? Circle it! What question or statement is the map currently showing information about?

The map is currently showing information about the statement "Global warming is happening."
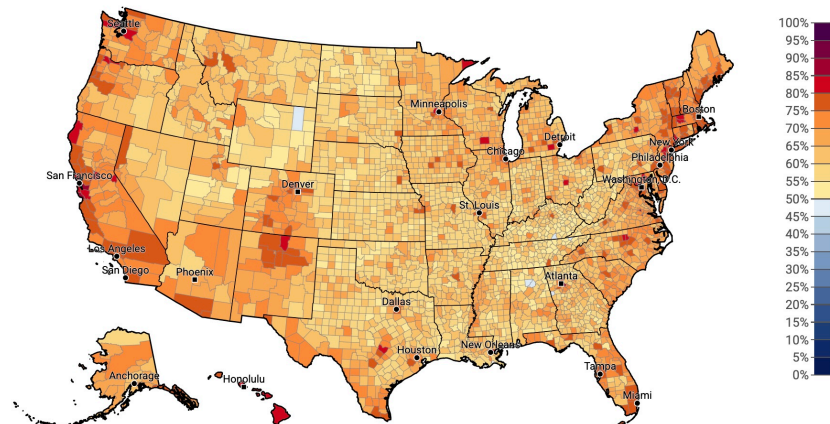
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Estimated % of adults who think that global warming is happening (nat'l avg. 72%), 2024

Select Question: Global warming is happening
Click map or: Select a State    Select a County
Absolute Value

National    States    Cong. Districts    Metro Areas    **Counties**



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YALE PROGRAM ON
Climate Change
Communication

UtahState
University

**3** Notice that different parts of the map are shaded in different colors.
   a. **What do the shaded sections on the map represent? (Hint: look at the key <u>above</u> the map):**

   The shaded sections represent U.S. counties.
   _____

   b. **What do the different colors tell us? (Hint: look at the key to the <u>right</u> of the map)"**

   The different colors represent the percentage of people that agree with the question.
   _____

   c. **Which counties have a greater percentage of people who think that global warming is happening: counties in orange or counties that are shaded in blue?**

   Counties that are shaded in orange have a greater percentage of people who think that global warming is happening.
   _____

**4** **Looking at the key above the map, we can see that we can find how America as a country responds to the statement "Global warming is happening." Click on "National." What percentage of Americans believe that global warming is happening?**

   As of 2024, 72% of Americans believe that global warming is happening.
   _____

**5** **Great job! Now let's see how that *national* average compares to your *state*. Click "States." On the map, click on or hover your mouse over your state.**
   a. **What state do you live in? What percentage of people in your state believe that global warming is happening?**

   Sample answer: I live in Connecticut. In Connecticut, 75% of people believe that global warming is happening.
   _____

   b. **Is this percentage high or lower than the national average?** Higher
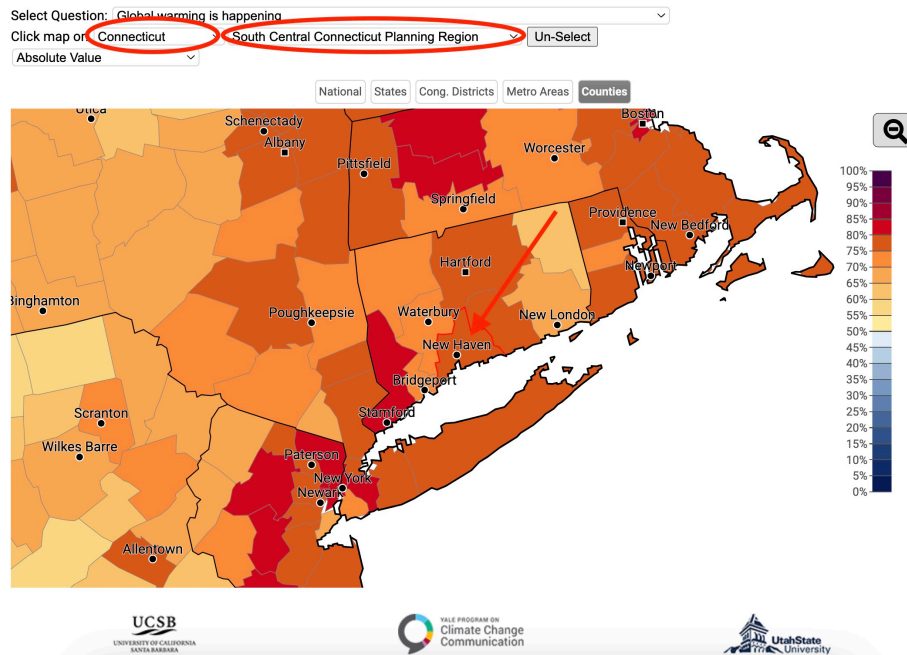                                                                    _____

   c. **Click on or hover your mouse over a state that borders yours. What state is it? How does its percentage of people who believe that global warming is happening compare to the percentage in your state?**

   Massachusetts borders Connecticut. In Massachusetts, 78% of people believe that global warming is happening. This is greater than the percentage of people in Connecticut (75%) who believe that global warming is happening.
   _____

**6** Let's zoom in even further. We will now see what percentage of *your county* believes that global warming is happening. Click on "County" in the key to the left of the map. Then, above the map, select your state and county. Your county will then be outlined in red on the map as seen in the example image below.



Estimated % of adults who think that global warming is happening (nat'l avg. 72%), 2024

**a. What county do you live in? What percentage of people in your county believe that global warming is happening?**

I live in the South Central Planning Region. In the South Central Planning Region, 78% of people believe that global warming is happening.

**b. Is this percentage higher or lower than the national average?** Higher

**c. Click on or hover your mouse over a county that underline borders yours. What county is it? How does its percentage of people who believe that global warming is happening compare to the percentage in your county?**

Naugatuck Valley Planning Region borders the South Central Planning Region. In Naugatuck Valley, 72% of people believe that global warming is happening, which is less than in South Central.

**7** Now, you will get to do some of your own research. Do you see above the map where you can "Select Question"? Choose 3 questions and fill out the table below. The first row has been completed as an example:

| Question | Answer for your county | Answer for your state | Write a statement comparing the data from your county to the data from your state |
|---|---|---|---|
| Worried about global warming | 72% of people in my county (South Central Planning Region) are worried about global warming. | 70% of people in my state (Connecticut) are worried about global warming. | More people in my county than my state are worried about global warming. |
| Answers will vary. | | | |
| | | | |
| | | | |

**8** What are your reactions to your findings? What surprised you and why?

Sample answer: It was very interesting getting to explore public opinion about climate change in my county and state. I was surprised that more people in the South Central Planning Region than the whole state of Connecticut is worried about global warming. Since the state of Connecticut has many urban areas and educational institutions throughout the state, I thought that the percentage of people in the state of Connecticut worried about global warming would be higher than the county's percentage.

## PART II: APPLICATION: USING YCOM IN POLICY DECISION-MAKING

Imagine that you work for the governor of Louisiana and you are interested in passing a new policy to help combat climate change. But you are not sure what the people of Louisiana think about the issue. You'll have to do some research using the Yale Climate Opinion Maps.

**9** **What percentage of Louisiana citizens believe global warming is happening?**

63% of Louisiana citizens believe that global warming is happening.
_____

**10** **What percentage of Louisiana citizens believe global warming is caused mostly by human activities?**

49% of Louisiana citizens believe that global warming is caused mostly by human activities.
_____

**11** **Based on your responses to questions 9 and 10, do you think it will be challenging to get Louisiana citizens to vote for a policy to help combat climate change? Why or why not?**

I think that it will be challenging to get Louisiana citizens to vote for a policy to help combat climate
_____
change because the percentages of Louisianans who believe that global warming is happening and
_____
that it is caused mostly by human activities are both well below the national averages.
_____

**12** **You have been thinking a lot about what type of climate change policy to propose and you have narrowed it down to three options:**

   **a. Fund (pay for) research into renewable energy sources**

   **b. Require schools to teach about climate change**

   **c. Stop expansion of offshore drilling for oil and natural gas off the U.S. coast (In other words, ban drilling for oil and natural gas in the seas off of the U.S. coast).**

**Based on the data from the Yale Climate Opinion Maps, which of these three policies do you think Louisiana citizens would support the most and why? Make sure to use specific data to support your choice. (Hint: Check out the "Select Question" function to see how Louisianians feel about each of the climate change policies).**

Based on the data from the Yale Climate Opinion Maps, I believe that Louisiana citizens would most
_____
support schools teaching about climate change because according to the Opinion Maps, 73% of
_____
Louisiana citizens agree with this. Comparatively, only 68% of Louisiana citizens believe in funding
_____
research into renewable energy sources. Additionally, 68% of Louisiana citizens believe in expanding of
_____
offshore drilling for oil and natural gas, meaning only 32% of Louisianians support banning offshore drilling.
_____

**13** Now that you have decided which policy you would like to pass, how will you convince Louisiana citizens to vote for it? What will you say to them? How will you communicate with them (i.e. TV ads, social media, flyers, etc.)?

Sample answer: I will convince Louisiana citizens to vote for this policy by showing them the facts. Through a TV ad, I will show that the majority of Louisianians already support schools teaching about climate change. The ad will also provide examples of materials students will learn (i.e. climate change, extreme weather) and how it will help people (i.e. create new teaching jobs). It will tell the story of how a Louisianian child learned about increased flooding in school, grew up to study water management in college, and then went on to create a new drainage system in low lying areas to reduce increased flooding. The ad will cut to Louisianian residents telling their stories of how their homes no longer flood.

**14** In the box below, draw/represent your answer to question 13. For example, if you're going to make a billboard, draw what it will look like. If you are going to use social media to get people to vote for your policy, write a tweet, design an Instagram post, or storyboard a TikTok. Answers will vary.

**15** Reflection: Do you think that the Yale Climate Opinion Maps tool is an effective way to show how people think about climate change across America? Why or why not? Do you think there is a better way to convey this information (i.e. video, book, article, etc.)?

Sample answer: The Yale Climate Opinion Maps tool is an effective way to show how people think about climate change across America because it is so interactive. Since the maps are interactive and are not one single image, you can explore a wide variety of opinions across many different levels (nation, state, county, etc.) instead of being locked into only examining one aspect of climate change opinion on one level. It would be interesting to see this represented in a documentary. A documentary wouldn't necessarily convey this information better than the maps; it would just be a unique additional way to explore these questions.

**16** **Which of the three policies do you think that the people of your own state would support the most and why?**

The people of Connecticut would also most likely support schools teaching about global warming. According to the 2024 maps, 82% of Connecticut people support this. They would also likely support a policy that would support funding research into renewable energy sources because 81% of Connecticut people agree with that, according to the maps.

## EXTENSION SUGGESTIONS

- Explore how your state/county responds to questions from the Americans' Interest in Climate News 2020 map.

- Complete the Climate Change Communication Investigation activity, where you can conduct research about climate change beliefs in your own communities.