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

Common Core ELA Standards: RH.6-8.1, RH.9-10.1, RH.11-12.1, RI.6.7, RI.8.7

Common Core Math Standards: MP.2, MP.5

LEVEL

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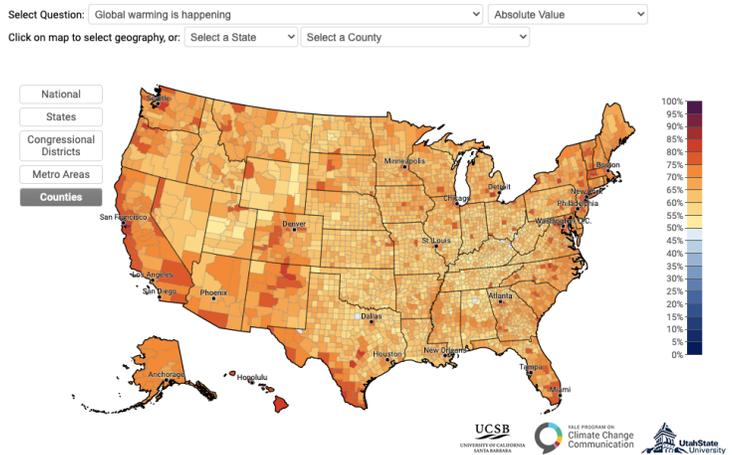
BACKGROUND

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.

Estimated % of adults who think global warming is happening (72%), 2020

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.

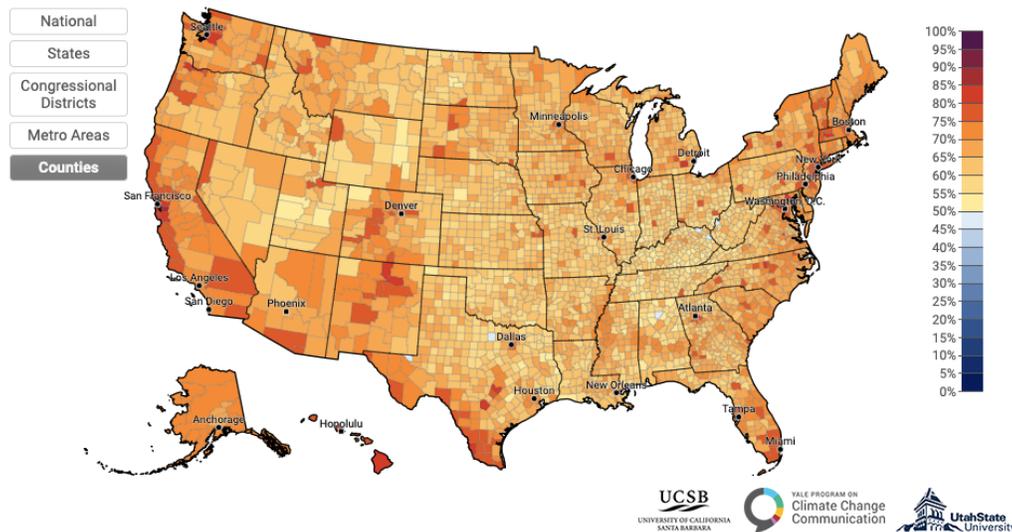## PART I: GETTING TO KNOW THE YALE CLIMATE OPINION MAPS

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."

Estimated % of adults who think global warming is happening (72%), 2020

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 to the <u>left</u> of 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 that are shaded 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 to the left of the map, we 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 September 2, 2020, 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, 74% of people believe that global warming is happening.

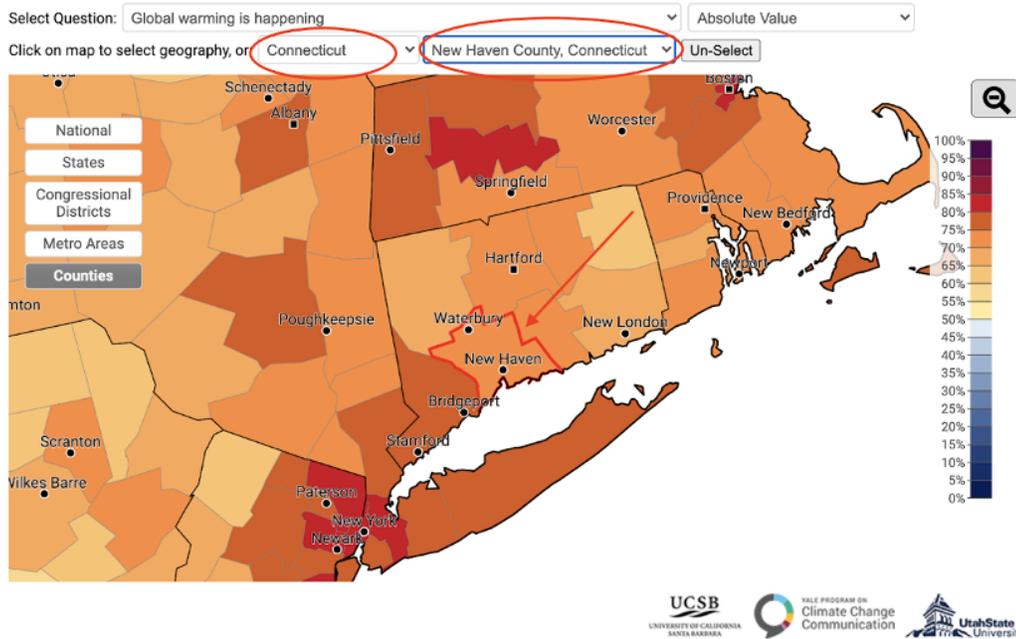b. Is this percentage higher or lower than the national average? **Higher**

c. Click on or hover your mouse over a 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, 77% of people believe that global warming is happening. This is greater than the percentage of people in Connecticut (74%) who believe that global warming is happening.

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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 global warming is happening (72%), 2020

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

I live in New Haven county. In New Haven County, 74% 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 *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?

Litchfield County borders New Haven County. Only 67% of people in Litchfield County believe that global warming is happening, which is less than New Haven County.

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	68% of people in my county (New Haven County) are worried about global warming.	68% of people in my state (Connecticut) are worried about global warming.	The same percentage of people in my county and 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 the same percentage of people in New Haven County and the whole state of Connecticut is worried about global warming. Since New Haven County is more urban than other parts of the state and has many educational institutions, I thought that the percentage of people in New Haven County worried about global warming would be higher than the state's percentage as a whole.

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?**

65% of Louisiana citizens believe that global warming is happening.

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

48% 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 funding research into renewable energy sources because according to the Opinion Maps, 82% of Louisiana citizens agree with this. Comparatively, only 76% of Louisiana citizens think that schools should be required to teach about climate change. Additionally, 65% of Louisiana citizens believe in expanding offshore drilling for oil and natural gas, meaning that only 35% of Louisianans support banning offshore drilling.

71% fund research 70% schools 63% expand offshore drilling 37% support banning

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 Louisianans already support funding research into renewable energy sources. The ad will also provide examples of types of renewable energy that we'll fund (i.e. wind, solar) and how it will help people (i.e. create new jobs, limit air pollution). It will tell the story of how a Louisianan was able to get a job in renewable energy and how their child's asthma attacks have become less intense and frequent. The ad will cut to different people from all over Louisiana telling this story.

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 funding research into renewable energy sources. According to the maps, 88% of people support this. They would also likely support a policy that would require schools to teach about global warming because 80% of people agree with that, according to the maps.

81%

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.