

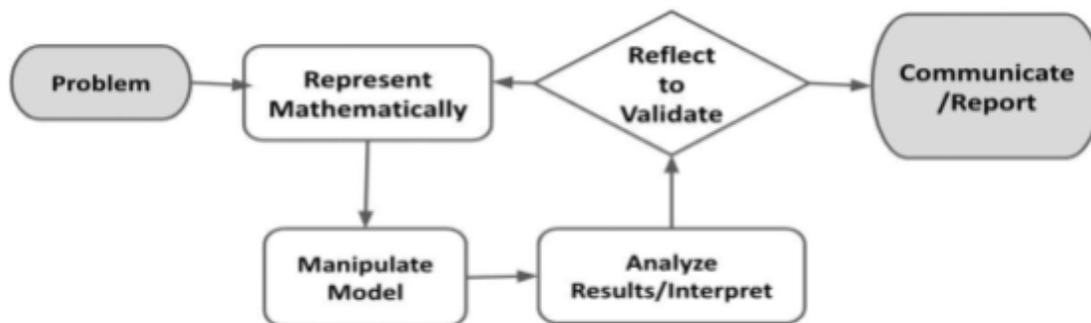
# M113B Performance Task

## Voting for Us!

### The Modeling Cycle

The United States is known for promoting civic engagement. However, these efforts do not always translate to voter turnout, especially with certain groups of citizens. Relatedly, data have been gathered that show which groups of people vote, which groups of people do not vote, and even why some people might decide not to vote. In this task, you will look at voter data trends and consider things like the consequences of groups not voting, all within the context of probability. To demonstrate your learning, you will identify a target audience, such as young voters or candidates running for office, and craft a message to that group which represents what you learned about voting trends and associated implications.

The process of modeling can help with tasks like this one in which you examine data, analyze trends, and predict outcomes. Mathematical models are used to make sense of ideas and phenomena in our world. As illustrated in the diagram below, the modeling cycle is a process of collecting data about an idea or problem, creating models of that data, analyzing the story told by those models, and reporting the results to the appropriate audience.



Source: *Diagram of Modeling Process*. From "Progressions for the Common Core State Standards for Mathematics."

In this task, you will be engaging with this mathematical modeling cycle to analyze data, evaluate findings, and identify trends related to which groups of people are voting in national elections. You will use the models and your takeaways from this task to identify a target audience and craft and deliver a persuasive message informing people about the proportional differences across groups of voters and the potential implications of those disparities. Your final product may be creative, but your ultimate message must be effective and supported by evidence. This task is designed to help support you in achieving this in your resulting product.

# Voting for Us

## Launch

### ACTION 1



Consider these quotes about voting and what they mean to you:

"Democracy only works when we work for it, when we fight for it, when we demand it."  
~Stacey Abrams

"By voting, we add our voice to the chorus that forms opinions and the basis for actions."  
~ Jens Stoltenberg, Secretary General of NATO

### QUESTION 1



Voting is an important decision. People must decide whether to vote or not. What are some factors that might contribute to a person's decision to vote or not vote?

*[This question is not meant to be scored. Look for reasonable responses (see teacher-facing guide for ideas). Expect students to answer individually on their own forms, as well as participate in a class discussion.]*

#### Student A

Voting is an important decision. People must decide whether to vote or not. What are some factors that might contribute to a person's decision to vote or not vote?

- their view on how much they can <sup>have an</sup> effect "does my vote matter"
- availability/accessibility
- candidates
- knowledge on candidates/political atmosphere
- family/friends participate in politics
  - ↳ "Do I care?" "Should I care?"
- Time
- Age
- citizen
- Felon

*Well-thought-out response. The student even included reasons a person might **not be able** to vote (citizen, felon) rather than just "deciding" whether to vote or not.*

## Student B

Voting is an important decision. People must decide whether to vote or not. What are some factors that might contribute to a person's decision to vote or not vote?

- The candidates
- opinions on policies
- accessible to polls
- does my vote matter?
- Family participate in politics?
- Do I care?

*Thorough response*

## Student C

Voting is an important decision. People must decide whether to vote or not. What are some factors that might contribute to a person's decision to vote or not vote?

- The politicians standpoint on certain issues
- How the country is doing
- Because they like the candidate

*Adequate response*

*If a student lists fewer than 3 reasons, encourage them to include more reasons after a class discussion.*

## ACTION 2



Watch [this video](#) about voting. Think about the trends mentioned and what exactly those being interviewed are advocating for. Think about what the video means to you and your understanding of being a citizen and voting.

## QUESTION 2



In the video, you found out that less than 50% of the largest and most diverse group of citizens in our country (those between the ages of 18-29) actually vote. What might be some of the implications of the largest group of citizens voting in such low numbers?

*[Again, this question is not meant to be scored. Look for reasonable responses (see teacher-facing guide for ideas). Expect students to answer individually on their own forms, as well as participate in a class discussion.]*

## Student A

In the video, you found out that less than 50% of the largest and most diverse group of citizens in our country (those between the ages of 18-29) actually vote. What might be some of the implications of the largest group of citizens voting in such low numbers?

- "biased" voting → diversity  
↳ our ideas are not being heard/considered
- voting trends = decrease — indefinite inequalities  
↳ - unequal representation ←

*Well-thought-out response. The student clearly understood if the largest, most diverse group of citizens did not vote, they are unlikely to be well-represented.*

**Student B**

In the video, you found out that less than 50% of the largest and most diverse group of citizens in our country (those between the ages of 18-29) actually vote. What might be some of the implications of the largest group of citizens voting in such low numbers?

- Our ideas are not being considered
- Our future is not being controlled by those who live it.
- Unequal representation

Adequate response

**Student C**

- They could have an effect in our election! Every vote counts so make sure your voice is heard

Doesn't really answer the question. No implications of voting in low numbers specified. The teacher should encourage this student to explain what is meant by "could have an effect in our election."

**QUESTION 3**

When people vote, they also must decide how they want to vote on certain issues. What are some issues that are important to you? How might you vote on those issues if you had the chance?

[Like questions 1 and 2, this question is meant to generate a discussion in small groups or whole class...AFTER students first respond to this question individually.]

**Student A**

Banning TikTok or other social medias → STOP  
 Representative leader  
 Abortion  
 Inflation → STOP

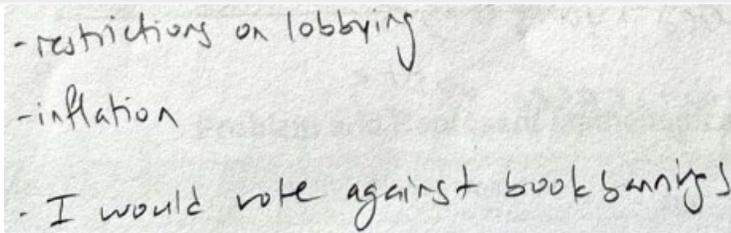
Look for students to list at least three issues. This student at least indicated "STOP" to indicate how they might vote on a couple issues.

**Student B**

abortion - separation of Church & State leave it up to the people.  
 Lobbying - "Charitable donations"  
 Inflation - rise in cost of living  
 Book banning  
 Tik tok  
 ↳ Government involvement in private businesses

Adequate response. This student listed several issues but did not indicate how they might vote on any of them. Students might be more comfortable just stating which issues are important to them without also indicating how they might vote.

### Student C



-restrictions on lobbying  
-inflation  
-I would vote against book banning

*Minimal but sufficient response. This student listed three issues and indicated how they might vote on book banning. Given these three representative responses, it looks like the class shared their ideas and it influenced individual student responses...which is acceptable for this question.*

## Problem and Represent Mathematically

In the **Problem** and **Represent Mathematically** sections, you will look at trends in voting data, consider outcomes, and create a data table. The **Problem and Represent Mathematically Checklist** can be used to ensure you have the necessary components before moving on to the remaining parts of the task.

### Problem

#### ACTION 3



In this task, you will examine voting trends for different age groups. You will consider the consequences of some groups voting in a higher proportion than others. In addition, you will determine the ideal target audience, such as young voters or candidates running for office, and decide how to share important information with them.

**Examine [this data](#)** for the November 2022 midterm election that provides breakdowns by different age categories. Before you access the data, conduct any research necessary to ensure you understand the purpose of midterm elections and their potential impact upon larger national elections.

#### QUESTION 4



What do you see in the data that might help you think about differences in voting trends by age group?

*[This question is looking for students to begin making sense of the data. It's not meant to be scored for accuracy at this point. That will come when students have to actually support their answer with data.]*

**Student A**

The total amount of registered voters,  
-age ↑ - % voters ↑

*While this is a minimal response, it does seemingly capture one of the trends apparent in the data. A conversation with the student clarified the student meant "as age goes up, the % of voters also goes up."*

**Student B**

What do you see in the data that might help you think about differences in voting trends by age group?

The youngest age group and oldest age group tend to have the least amount of people. However, the oldest group has one of the highest percent of registered <sup>and voted</sup> and youngest group has the lowest.

*This student addresses the youngest and oldest age groups in terms of number of people and registered and voting populations...which is the goal of this question. It would have been a more thorough response if the middle-aged group was addressed, but it is not necessary. This is an acceptable response.*

**Student C**

The younger people are more likely to not vote while the older people are more likely to vote

*Simple response and it technically meets the requirement of the question...which is just looking for the student's impressions of the data.*

## Represent Mathematically

### ACTION 3



Now, you will use the data you examined above to complete the table. **Complete** the table below to show the number of people in different age groups:

- Who were registered to vote and voted;
- Who were registered to vote, but didn't vote;
- Who were not registered; and
- The corresponding totals.

Considerations:

→ What does the data reveal about differences in registration and voting across groups?

Student A

the corresponding totals.

registered - voted

voting across groups?

Age Ranges (in years old)	Registered + Voted	Registered + Didn't Vote	Not Registered	Total
18-24	7372	5758	7387	20517
25-34	15396	8997	7252	31645
35-44	18401	7506	5285	31252
45-54	19546	6308	3910	29764
55-64	24115	5044	4000	33159
65-74	22369	3269	2775	28413
75+	14717	2563	1922	19202
<b>Total</b>	<b>121916</b>	<b>39505</b>	<b>32531</b>	<b>193952</b>

The student correctly completed the table and knew to subtract the number of people who voted from the number of registered voters to get the second column figures (registered + didn't vote).

### Student B

Age Ranges (in years old)	Registered + Voted	Registered + Didn't Vote	Not Registered	Total
18-24	7,372	5,759	7,387	20,517
25-34	15,396	8,997	7,252	31,645
35-44	18,401	7,966	5,285	31,252
45-54	19,546	6,308	3,910	29,764
55-64	24,115	5,044	4,000	33,159
65-74	22,369	3,269	2,775	28,413
75+	14,717	2,563	1,922	19,202
<b>Total</b>	121,916	39,505	32,531	193,852

The student made a minor error in totaling the last value (s/b 193,952). Even if the student made a few errors in this table, it shouldn't be a cause for concern. The opportunity for entering incorrect values with a data set this dense can be expected. During the consultation, the teacher should just point out any errors and ask the student to correct the data.

### Student C

Age Ranges (in years old)	Registered + Voted	Registered + Didn't Vote	Not Registered	Total
18-24	7,372	I can't find these numbers in the data table.	7,387	
25-35	15,396		7,252	
35-44	18,401		5,285	
45-54	19,546		3,910	
55-64	24,115		4,000	
65-74	22,369		2,775	
75+	14,717		1,922	
<b>Total</b>	121,916			32,531

The student did not know how to use the existing data to compute the "registered + didn't vote" column, which led also not being able to complete the "total" column. The teacher should work with the student to help his/her understand how to complete this table correctly.

### Problem and Represent Mathematically Checklist

Requirement	Fulfilled?
I have a complete data table with accurate cell data.	<input type="checkbox"/>
Teacher Consultation:	_____

## Compute and Interpret

In the **Compute** and **Interpret** sections, you will compute some probabilities to understand the voting trends of different groups of people. The **Compute and Interpret Checklist** can be used to ensure you have the necessary components before moving on to the remaining parts of the task.

### Compute

#### QUESTION 5



If a person who was **not** registered was selected at random, compute the following probabilities:

- The person selected is aged 18-24
- The person selected is aged 45-54
- The person selected is younger than 35

Choose 1 additional probability to compute based on the two-way table that will help contribute important information to your overall messaging for this task.

#### Student A

• The person selected is aged 18-24  $\rightarrow \frac{7387}{32531} = 0.227 = 22.7\%$   
• The person selected is aged 45-54  $\rightarrow \frac{3910}{32531} = 0.120 = 12\%$   
• The person selected is younger than 35  $\rightarrow \frac{614639}{32531} = 0.450 = 45\%$

1 additional probability...

Given Registered + didn't vote  $\rightarrow \frac{2563}{39505} = 0.065 = 6.5\%$   
prob 75+

*The student answered this question thoroughly, even showing the values used to determine the probabilities. Expect students to give the probabilities in percent or decimal form.*

**Student B**

- The person selected is aged 18-24 ~~0.36~~ 0.22
- The person selected is aged 45-54 ~~0.13~~ 0.12
- The person selected is younger than 35 ~~0.24~~ 0.45

1 additional probability...

0.44 Percent of voters who registered and voted in ages 35 or younger

The student answered the first part of this question correctly (after initially making some errors), but the additional probability isn't supported by the data in the table. This answer warrants the teacher asking the student how they determined this probability. Mention that 35 or younger is technically incorrect as well. Younger than 35 can be found in the data, exclusive of 35.

**Student C**

If a person who was **not** registered was selected at random, compute the following probabilities:

→ 32,531

- The person selected is aged 18-24 →  $\frac{7387}{32,531} \rightarrow 22.7\%$
- The person selected is aged 45-54 →  $\frac{3910}{32,531} \rightarrow 12\%$
- The person selected is younger than 35 →  $\frac{14634}{32,531} \rightarrow 45\%$

1 additional probability...

18-24 registered + voted over total registered + voted  $\frac{7352}{121,916} = 6\%$

The student answered the first part of this question correctly, and even made sure the denominator was identified in the question (32,531). It makes sense that the additional probability chosen by the student dealt with the 18-25 age group. This calculation is also correct.

Note: Teachers are likely to see calculations here that are based on incorrect values the student included in the table in the previous action. If that happens, give credit for the student calculating the probabilities in Question 5 correctly by using the incorrect values in their table. However, when consulting with the student, encourage them to go back and make corrections to both parts.

## Interpret

### QUESTION 6



Considering the probabilities you calculated in Question 5 and the previous thinking you did around voting trends, answer the following questions:

- What might be some of the implications of those probabilities on the 2022 midterm elections?
- What do your computed probabilities mean related to the context of voter trends?

*[There isn't a correct way to respond to this question. Teachers should look for students to reflect on the work so far and make thoughtful observations.]*

#### Student A

Out of non-registered people, there is a 45% probability of a randomly selected person being under 35 years old. So many younger citizens are not projecting their opinions, and not even attempting to do so. More people 18-24 are registered and didn't vote over people that did vote. The underrepresentation of 18-24 ages for elections poses a problem of non-progressive ideas and more traditional support and media for voting.

*The student made some nice observations that are likely to influence their final message in Action 4. Supporting their conclusion about voting trends to the under 35-year-old age group with the actual percentage makes this a thorough response.*

#### Student B

- What might be some of the implications of those probabilities on the 2022 midterm elections?
- What do your computed probabilities mean related to the context of voter trends?

The implications on the 2022 midterm is that younger people's views and opinions aren't being represented in the election.

Older people tend to vote more than more younger people.

*The student made some relevant observations and answered this question completely, even if not connecting it to the actual probabilities already reported in earlier parts of this task. Again, this question isn't really graded for correctness as much as thoughtful responses.*

**Student C**

1. young people don't vote that much, resulting in them having less of a say than the other age groups in regards to voting

2. Voting trend wise, young people will vote less and less, and when they get older, they'll most likely still not vote = average decline in voting across all boards.

*The student attempted to make sense of the implications and voter trends, but it seems that this student thinks if a young person starts out not voting, they will continue to not vote as they age. The teacher needs to address this misconception with the student during the consultation. The goal is to help the student fully understand the data at this point, and the "correctness" of their response is not the point. It is advisable for the student to go back to the data and support their conclusion with data.*

**Compute and Interpret Checklist**

Requirement	Fulfilled?
I computed probabilities of specific events, and 1 additional probability.	<input type="checkbox"/>
I interpreted the implications of the probabilities I calculated on the 2022 midterm elections and on overall voter trends.	<input type="checkbox"/>
<b>Teacher Consultation:</b>	_____

## Validate, Reflect, and Report

In the **Validate, Reflect, and Report** sections, you will identify and explore additional resources that will help you finalize your message to your target audience. The additional resources should help you to further understand the differences across voters and the implications of those disparities. The **Validate, Reflect, and Report Checklist** will be used to ensure you have the necessary components before finalizing your work on this task.

### Validate and Reflect

#### QUESTION 7



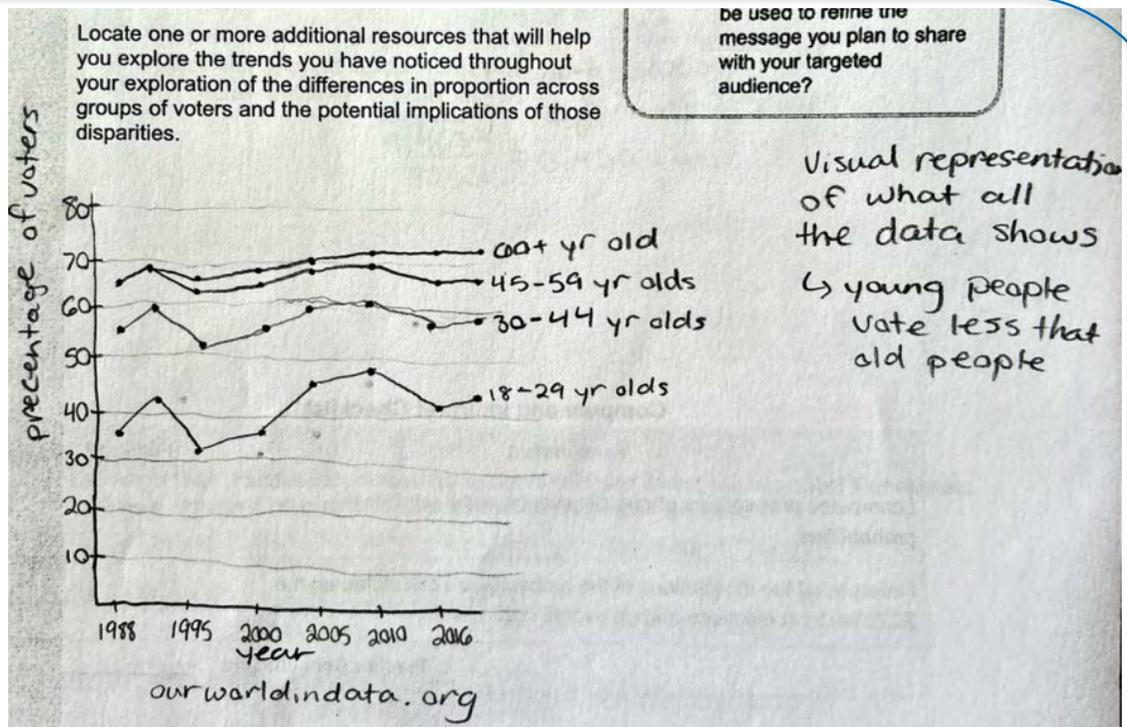
What other information do you think would be helpful as you finalize your message to your targeted audience?

Locate one or more additional resources that will help you explore the trends you have noticed throughout your exploration of the differences in proportion across groups of voters and the potential implications of those disparities.

Considerations:

- How might this information be used to refine the message you plan to share with your targeted audience?

#### Student A



The student met the requirements of this question by both locating at least one additional resource ([ourworldindata.org](http://ourworldindata.org)) that shows the differences between voting populations and concluding that “young people vote less than old people.” Recreating the visual found on the website is a nice touch, though not necessary.

## Student B

Pewresearch.org states the statistic of 52% of registered voters in the 2020 presidential election were ages 50 & older, which increased from 41% in 1996. They also state that the median age of registered voters overall increased from 44 in 1996 to 50 in 2019.

The student indicated another source of information (pewresearch.org) and gave some additional information found on that site, noticing that the median age of registered voters overall increased from 44 in 1996 to 50 in 2019. Nice bit of information around which to build a message in their final action.

## Student C

groups of voters and the potential implications of those disparities.

Pew ~~gov~~ research center  
Census.gov → 2022 results.

final message: Younger voters, primarily 17-24 years old ~~should~~ should actively participate more in politics even if only the presidential elections

National election studies  
the center for information and research on civic learning and engagement

federal election commission

The student indicated several new sources of information (Pew Research Center and Census.gov) and drafted a final message based on information found at those sites.

# Report

## ACTION 4



**Consider** what you have learned about the proportional differences across groups of voters and the potential implications of those disparities. Identify a target audience who you think would benefit most from hearing about these disparities and implications. In any traditional or creative medium of your choice, craft a message to be delivered to this audience.

- Think of who is in your target audience, what they need to hear/learn, as well as the medium which might be best to deliver your message for that particular audience so that it is as memorable and effective as possible.
- Don't let format limit you — you can think of anything from writing a speech, making an informational video or commercial, writing a children's book with an underlying message for the adults reading it, designing a poster or comic strip or graphic novelette, or anything unique and memorable you can use to communicate your message.
- Your communication format will ultimately determine what your product is. Your product should explicitly note who the intended audience is, how the product would best be delivered, and, if the message is not explicit in the product (e.g., not scripted in a speech or written in paragraphs), then a brief overview of the intended message. Be creative, have fun, and affect some change with your message!

*[Encourage students to be creative in their final products. Look for them include data to support their message where appropriate.]*

*See sample student work on the following pages.*

*Note: The students who participated in this performance task reported that they not only learned something about their age group, but they committed themselves to being a voice for encouraging young people to vote and have their voices be heard.*

### Validate, Reflect, and Report Checklist

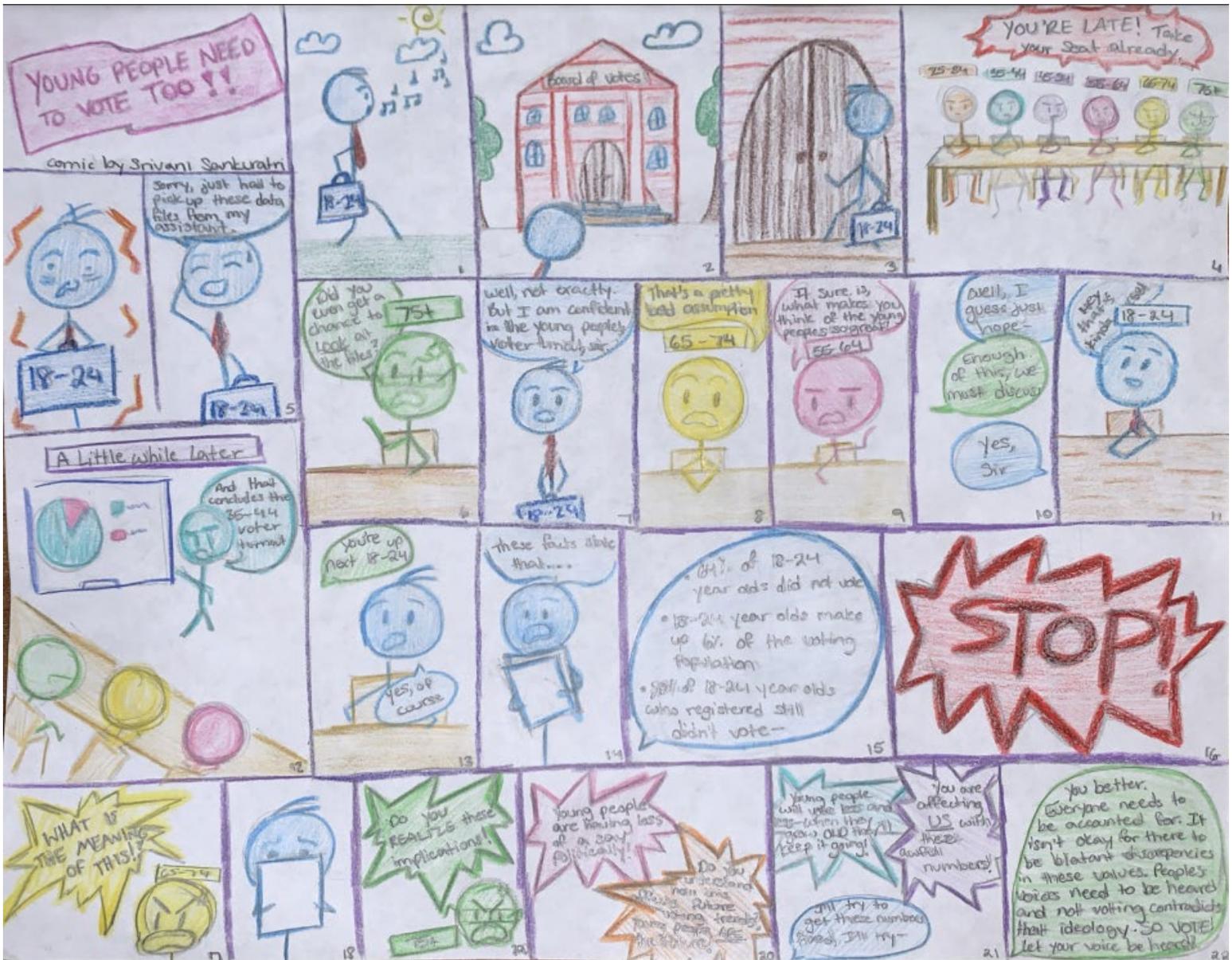
Requirement	Fulfilled?
I located at least one additional resource and used it to further explore the trends in voter turnout and the implications of the disparities.	<input type="checkbox"/>
I identified a target audience that would benefit the most from hearing about the disparities in voter turnout and crafted a message to be delivered to them.	<input type="checkbox"/>
<b>Teacher Consultation:</b>	_____

**Student A**

Premise:

- There is a Board of votes who come together and discuss voter turnout each election
- Each "person" represents a specific age group
- Person 18-24 reads out statistics regarding that age group
- All the other age groups rage and shout the implications

*Very creative presentation. The message about young voters was conveyed and included supporting data in the messaging.*



*This student focused on a “get registered and vote” campaign geared toward young people. Reminding them that their views and opinions won’t be represented if they don’t vote. Nice poster/flyer that can be used.*



**Student C**

*This student created a set of PowerPoint slides to present to their classmates in order to encourage them to vote. They provided statistical evidence and research to help support their message.*

# Voter Turnout In Young Americans

## Point

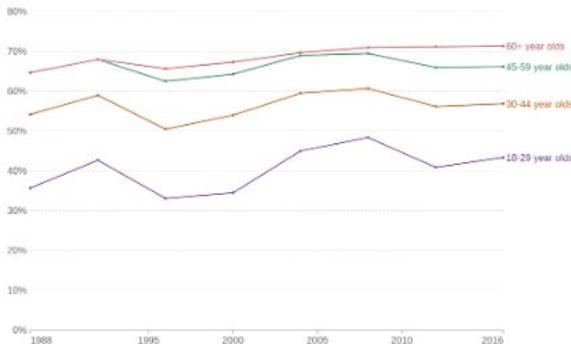
Younger Americans (18-24) are not voting at a high percentage compared to other age groups.



## Evidence

**Election voter turnout rate by age in the United States**

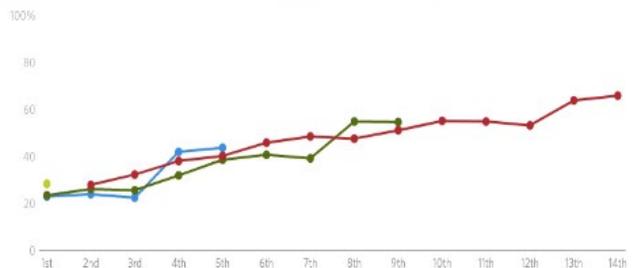
Percentage of voting-age citizens in the United States who voted in the presidential election.



Data source: United States Elections Project

OurWorldInData.org/usa-electoral-turnout | CC BY

— Baby Boomers (born 1946-1964) — Gen X (born 1965-1980) — Millennials (born 1981-1996) — Gen Z (born 1997-2012)



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## Reasoning

According to a Harvard poll on youth voting, only 49% of people 18-29 years old said they would “definitely” be voting in the 2024 presidential election. This is a decrease from the 2020 presidential election where 57% of people in that age group gave the same answer. One reason for this could be a dislike for both candidates. The study also gives the reason; “Most young people do not feel their high school experience adequately prepared them to vote.”



## Solution

A solution to this issue would be to further encourage youth voting. Massive voting campaigns were put out for the 2020 presidential election and youth voting had record numbers. Further education about elections, voting, and election cycles in high school would also be great for voter turnout and voter education.



## Sources

<https://iop.harvard.edu/youth-poll/46th-edition-fall-2023>

<https://www.npr.org/2023/02/06/1154172568/gen-zs-political-power-new-data-gives-insight-into-americas-youngest-voters>

<https://ourworldindata.org/grapher/voter-turnout-rate-by-age-usa>