

What does an average high schooler know about the US Constitution? In order to start to answer that question, I coded an online quiz (<https://mayarobinson613.wixsite.com/constitution/quizzes>; click on “General Constitution Quiz”) about the Constitution which I shared with peers. It turns out that coding a quiz was not quite as straightforward as I imagined that it would be. Though such quizzes may look simple on their surface, even getting my code to open a graphical window with a title and a clickable button was a huge achievement at first. I spent hours fixing problems like making a window disappear when the test-taker is done with a question so the next can pop up; disabling buttons after the user responds so that it is impossible to double-click an answer and get twice the points; and emailing results to my email inbox so that I could track scores and specific answers. Achieving these goals required me to substantially deepen my knowledge of the computer language Python, including object-oriented programming and graphical user interface programming, as well as to find and utilize helpful code modules in books and online to solve specific problems.

When the general quiz was finished (copy of questions and answers attached; quiz code available on request), I sent it out to peers to collect data. The tables below show data for 15 test-takers, of which 14 go to my high school.

Question	Correct Answer	Number of correct responses	Most common mistake
1	A	15	N/A
2	D	12	1 A, 1 B, 1 C
3	C	8	3 A, 4 D
4	A	8	7 B
5	B	7	4 A, 2 C, 2 D
6	C	8	1 A, 1 B, 5 D
7	B	7	1 A, 5 C, 2 D
8	D	14	1 C
9	D	14	1 C
10	A	7	4 B, 4 C

Mean score (out of 10):	6.67
Median score:	7
Mode(s):	6 and 8

My sample size was limited, so it is difficult to generalize from the data. However, I noticed that all 15 of these test-takers got Question 1 correct, so they must have known the basics about the 13th Amendment. At my school, the eleventh grade history curriculum focuses partially on the history of slavery in the United States, which could be a factor in the perfect score. In order to test this, I would use a larger sample size at my own school and also test students at other schools to determine what factors affect high schoolers’ knowledge of the Constitution. An ideal future experiment would sample a larger number of students from multiple schools in various grades and compare their results.

In terms of analyzing current data, it was particularly interesting to see which answer students guessed when they were incorrect. For example, everyone who did not know that Alexander Hamilton signed the Constitution on behalf of New York guessed John Jay in Question 4. From information like this, I can gauge what other high school students know about the Constitution.

Once I had coded one quiz, I had the blueprint to create more (<https://mayarobinson613.wixsite.com/constitution/quizzes>). All I needed to do was to write more questions. Of course, quizzes test knowledge, and I wanted to teach as well. So, I also created a larger educational website (<https://mayarobinson613.wixsite.com/constitution>) composed of original explanations that I wrote, along with links to pre-existing informative resources. In doing so, I strengthened both my knowledge of and appreciation for the US Constitution and its history.

To market this final product, I would reach out to principals and educators of high school students as well as to students themselves. To reach them, I would first buy a mailing list of high school administrators across the country and send an email explaining what my website is and how I think their students would benefit from learning from it. I would learn how to use so-called SEO (search engine optimization) to make my website show up in related Google searches such as “What is the Constitution” or “Learn about the Constitution.” I would also create a social media presence to attract teenagers to my website.

In order to keep the website free to users, I would have to bring in enough money to keep it running. I would plan to do this with advertisements. For this, I would learn how to host advertisements on my website and choose appropriate education-related ads to display. Even though I have not yet taken these steps, now that the website has been created, I plan to share it with teachers, administrators, and peers at my own school as a resource for fellow students.