

Process Paper

How did I choose my topic?

I discovered my topic while reading about the history of the numeral zero. Few people know who invented the number zero, one of the most important tools that we have. Zero is heavily involved in all of our modern technologies, especially computers. I found that the Indian mathematician Brahmagupta was the inventor of the number. He created zero completely from scratch, with no foreknowledge. I felt intrigued and decided to pursue the topic as it is not as often researched as other topics. I wanted to show zero's humble origins. Also, my interest in technology further encouraged me to pursue this topic.

How did I conduct my research?

Research was somewhat difficult since I chose a topic that was in early history. It was difficult to find primary sources from Brahmagupta who lived thousands of years ago. To find primary sources I could use, I contacted museums, societies, governments, and any other place I could think of so that I could hopefully find some artifacts; I could not find much. Even with fewer primary sources, I was still able to find pertinent sources about my topic through books, videos and other sources. There were pictures, such as zero being used in cultures that existed thousands of years ago. I was fortunate to get several interviews with people who frequently use zero and math in their jobs.

How did I choose my category?

I personally enjoy working with technology, so I felt that I could highlight my skills with a website. As I am involved in numerous extracurricular activities, a website was convenient for working at varied times and places. I made the right choice because using NHD WebCentral to create my website was a challenge, but I learned how to use the site. I enjoyed the freedom of making a website as I could independently create what I was interested in and include a variety of media. I employed my knowledge of the coding languages CSS and HTML to further enhance my website.

How does my topic relate to the theme?

Although it's not as obvious, Brahmagupta and his definition of zero are a great example of this year's theme - Breaking Barriers in History. Brahmagupta and his ideas broke numerous barriers of mathematical preconceptions, and his work helped shape the world that we live in today. Brahmagupta himself broke the barrier of the unknown, as he created something entirely new and abstract and gave it an identity. Furthermore, his definition of zero broke numerous scientific and technological barriers which some thought were unbreakable. His definition of zero plays a major role in our digital technology where it forms the basis of the code which is running this computer this instant. Overall, the legacy of zero is evident in our modern world as we have digital technology, calculus, and many other innovations which would not have been possible without the idea of "nothing".