

Cogito Ergo Sum: Rene Descartes' Cartesian Revelation

Aaron Aldrin

Junior Division

Individual Website

Student Composed Words: 1200 words

Media Time: 2:56 minutes

Process Paper: 500 words

I chose this topic because of my love for mathematics and history, especially as I was starting a new lesson in school about the cartesian coordinates. This led me to the works of Descartes, whose brilliant unification of algebra and geometry created a whole new field in mathematics ‘Analytical Geometry’. I instantly fell in love with this topic. My appetite for coding is the reason why I picked up the website category, which allows me to paint the history of mathematics as a beautiful and compelling story.

I started my journey in the mathematical section of our local public library and read all the books on the topic of the history of mathematics. From Carl Boyer to Stephen Hawking, the breadth of the books I read allowed me to piece together a fascinating timeline of ‘before’ and ‘after’ chapters and the central character in this story – Descartes. I also watched documentaries from pbs/history channel, and researched databases such as JSTOR, Library of Congress, and Gallica (French equivalent of Library of Congress). I validated my research by conducting interviews with mathematical historians and authors.

For organizing my work, I prepared an outline in a google document with the key sections, images, and videos. This outline was then used to create a PowerPoint presentation where I also started mocking up the website. I then proceeded to create my website using the NHDWebCentral tool. Initially, I struggled to understand how this platform works. I watched tutorials provided and I kept tinkering with this tool. Once I got past the initial struggle, the platform worked out great and I was able to translate my Cartesian story into a website format.

My argument is that Descartes’ invention of Cartesian Geometry was a turning point in history because of how it led to the creation of modern-day calculus and eventually led to real-world applications. I asked myself questions such as why Descartes and not Fermat got all the recognition, how a sickly child ended up being part of some of bloodiest military campaigns in Europe, why despite all his political and religious connections, he chose to flee Paris. The answers were hidden in the many roles which Descartes played in his life – mathematician, soldier, philosopher, traveler and in the many places and people he experienced. It helped me piece together this remarkable turning point in the history of mathematics. I organized this story into 5 chapters - early **investigation** of mathematicians before his time, his political, religious, military, and philosophical **interactions**, his work including his **invention**, his **influence** on subsequent luminaries and lastly his **impact** on our day-to-day lives.

In conclusion, this journey from research to creation over the last many months has been very fulfilling. As I reflect on this journey, I am not only enriched by a deep understanding of the history of mathematics but also inspired by the connection between past and the present – how Descartes extended the ideas from before his time and how his ideas were extended by others after him.