# Alan Turing and the

# Enigma Machine

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Individual Documentary

Process Paper:

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## Process Paper

Lots of people know about word mixes and other word games, but not many know about cryptography and how the military uses it for top-secret, life or death projects. I wanted to combine STEM (science technology engineering and math) with an edge-of-your-seat adventure tale. The National History Day topic this year is Communication. Cryptography is the top-secret form of communication, and I focused on cryptography during war time.

My historical argument is that Alan Turing was one of the greatest minds of the century. Turing cracked the unbreakable Enigma code, in part by building the first computer ever. Turing is significant in history because his analyses and his actions changed the world forever. Alan Turing was a mathematical prodigy, but to crack the code, he had to learn more about electronics, wires, and machinery, which allowed him to build Colossus, the first digital computer. Alan Turing truly changed the world through communication.

My research was mostly accomplished on the internet. I used Cornell Notes to organize my research, and a binder to hold everything I wrote down. Post-it note tabs were a great organizer, too. Every source got its own page. I

separated notes by type of source, for example, YouTube video, photo, news article, or webpage. Having all my pages separated and organized made finding information quicker.

I also used color coding in the page margins. Light green was Turing's childhood, dark green was his work before WWII, blue was work at Bletchley Park, pink was his impact on WWII, and so on. Each piece of research was separated into a color-coded time frame. The color coding greatly helped my organization.

When it came time to write my script, I pulled out all of my research coded light green (Turing's childhood). Once I wrote up Turing's childhood, I would move on to the next color. This was very helpful in combining all the sources and keeping a timeline.

In writing the rough draft of my script, I used all the information I had. Of course, when read aloud, my voiceover was fifteen minutes long. I had to cut out enough to fit the ten-minute time limit. One particular time-saver: I had extensively studied the details of Enigma's operation. I cut most of those details, since teaching it all would take too long and wouldn't move the story along.

I created my documentary with Wondershare Filmora 9, an advanced video-editing software. It allowed me to piece all my ideas together. In the software, I created folders to organize pictures, videos, and audio. I enjoy video editing since it requires both technological skill and creativity. Every single thing

you see on the screen is planned exactly. My animations are fun to make--they take effort and time. The documentary has some difficult-to-explain items, and carefully designed visual representations can make the material easier for the viewer to understand.

Alan Turing was one of the most outstanding minds of the century.

# Annotated Bibliography

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