## **Process Paper**

After previous experience with National History Day, we decided to start another project late last summer and introduced a new member to this project. We wanted a project that is STEM-related, and from one of our groupmates' current knowledge, we chose Ultra and the Enigma Code. We changed our topic a few times, first focusing on Alan Turing, then realizing the intricacies of code-breaking in World War II were more than just him. Alan Turing is part of our project but we're focusing on the Ultra operation as a whole. We're proving that Ultra's code-breaking efforts were effective in helping improve the odds of the Allies' victory. While proving this, we recognized a theme of how Ultra's strategic and reliable communication was successful in achieving their goals and winning the war.

While trying to gain a better understanding of our topic we took an approach to studying a variety of subtopics based on our thesis. Some ideas we wanted to explore were the contributions that many of the people involved in Ultra made, we also wanted a more in-depth view on the impacts that Ultra made which shaped World War II. Throughout our research, we already had many thoughts and perspectives and were aware of the complexities of our topic. While this topic can be profiled as communication in a literal sense, we had to figure out why this communication was such a pivotal moment in history.

During our selection process, we wanted to create something different than we had previously as well as factoring in our lack of materials; that's when we decided to choose website design as it would be easier to participate virtually. Our process involved slowly building from the central idea of the Ultra's role in the cryptanalysis of World War II into three sections, People

& Ultra, Communication, and Impacts & Influences. Within those sections we had created subsections, which references the evidence we collected and includes short analyses. Some sections were longer than others to further our historical context for understanding. We ran into challenges regarding website errors, our constant questioning of our evidence fitting our thesis, and challenges communicating during the global pandemic.

Ultra's prowess in code-breaking broke the enigma codes in World War II, showing exceptional communication during one of history's deadliest wars. Our topic is an example of the power that communication has with fatality and critical circumstances. Ultra's mission supported the result of a war where communication was the key strategy to winning it. Communication proved to be a vital component in World War II, whether communication provided information through spies, code-breaking, or even the lack of communication for the Nazis. Even if the strategies that Ultra used were untraditional—not everyone was trained to understand the specificities of coding languages—it brought together people from different backgrounds and was victorious. From what we've drawn from our research, communication is crucial to any effort and can be accomplished through any limitations.