



2010 *Back to History* Lesson Plan “Dominion of War”

Team Members:	Julie Pratt Monica Klarer
Instructional Unit:	Inventions/Inventors
Title of Lesson:	Inventions Change the World/ The Enigma Machine
Grade Level:	3rd
Description:	During our unit of inventions/inventors, students will learn how one local inventor used technology in his job to develop a machine, and how that invention changed the world during World War II.
Standards: Include Standard, Benchmark Letters, and GLI numbers	3History 2: Timeline 3H 3G: Describe changes over time in technology 3Geography3: Maps 3G8: Identify systems of communication used to move ideas. 3SS Skills and Methods: Obtain information using maps, photos, oral histories, newspapers, artifacts 3SSM 3: Identify possible cause and effect relationships.
Duration:	40 minute lessons / 2 – 4 days



Materials and Resources:

- World map
- Books
 - * *WW II* (Eyewitness Books) by Simon Adams. New York: DK Children, 2007.
 - * *WW II: The War in Europe* by John J. Vail. Lucent Books, 1991.
 - * *A WW Two Submarine* by Richard Humble and Mark Bergin. Peter Bedrick, 2001.
- Timeline
- Venn Diagram

Primary Source Materials:

National Cash Register Co. photograph, Ohio Federal Writer's Project. Ohio Historical Society, Ohio Guide Photographs, State Archives Series 1039 AV, accessed at *Ohio Memory*,
<http://www.ohiomemory.org/u/?p267401coll34,2108>.

"Deutsches U-boot versenkt englischen frachtdampfer," Adolf Brock, 1941. Library of Congress Prints and Photographs Division,
<http://www.loc.gov/pictures/item/2008678875>

Enigma Machine and Bombe photograph by Laurie Minor-Penland from "Information Age: People, Information & Technology," An Exhibition at the National Museum of American History, Smithsonian Institution,
<http://photo2.si.edu/infoage/bombe.gif>.

Secondary Source Materials:

"The Dayton Code Breakers Project." Deborah Desch Anderson. September 2003. *Dayton History at The Archive Center*,
http://www.daytonhistory.org/archives/codebreaker_day.htm.

"The US Bombes, NCR, Joseph Desch, and 600 WAVES: The First Reunion of the US Naval Computing Machine Laboratory." John A.N. Lee, Colin Burke, and Deborah Anderson. *IEEE Annals of the History of Computing*, Vol. 22, Issue 3 (July-September 2000): 27-41.
<http://ei.cs.vt.edu/~history/WAVES.pdf>



Warm Up:

Students will need to understand the time period of WW II and the location of Germany compared to the U.S. Use a timeline to show the duration of WW II (standard 3Hist2) and the location of Europe/Germany (standard 3Geo3). Also, introduce the purpose of U-boats during the war. Provide books for students to read on their own. Review with students their study of Transportation Then and Now from 2nd grade.

Instructional Strategies:

Teacher led instruction giving background information of WW II and how hundreds of supply boats going from the U.S. to England were being attacked and sunk by German U-boats. After several years, England successfully developed an Enigma machine that was able to break the German codes and destroy the U-boats. The Germans then developed a more complicated 4 rotor code and began to once again sink supply boats.

The teacher continues and students begin gathering information about how Joe Desch from NCR, Dayton, was asked by the U.S. Navy to develop an Enigma machine. Teacher divides the class into groups of 3 or 4 and gives students facts of this process on 9 index cards. The students put the cards in sequential order of the development of the Enigma machine. Once the groups have them in order, the class comes back together and the correct order is given. A discussion will follow.

Homework and Practice:

Students will decode their spelling words that are written in code.



Assessment Question:

Explain how the development of the American Enigma machine was able to end WW II.

- 4pts. Response indicates that the student has a thorough understanding of the historical concept. The student has provided a response that is accurate, complete, and has correct sentence structure.
- 3 pts. Response indicates that the student has an understanding of the historical concept. The student has provided a response that is accurate but is lacking details.
- 2 pts. Response indicates that the student has a partial understanding of the historical concept. The student has provided a response that is too general or simplistic. Student omitted information or details.
- 1 pt. Response indicates the student has very limited understanding of the historical concept. The response is incomplete, may exhibit many flaws, and may not address all requirements of the task.
- 0 pts. Response indicates no understanding of the historical concept.

Re-teach Activity:

Compare Joe Desch's job and responsibilities to a job of an inventor at NCR in 2010.

Extension Activity:

1. Answer "What if?....." questions
2. Research other inventors, particularly local ones.
3. Decode Spelling words
4. Create their own code.
5. Create a machine from Legos or recycled materials.
6. Research women in the military (WAVES) in conjunction with Women in History Month (Feb.)

