Grace Hopper – Queen of Code
Note Sheet

Film Date: 2015

Standard 3 - Communication Technologies: Ideas can be communicated though engineering drawings, written reports, and pictures.

3.3: Identify and compare communication technologies and systems, i.e., audio, visual, printed and mass communication.

At the beginning of the film, Grace Hopper is described as being **DISRUPTIVE**

The film states that Grace Hopper would be an unknown if it were not for **THE ATTACK ON PEARL HARBOR (DECEMBER 7, 1941)**

World War II is described as a war of **SCIENCE** & **MATH**

In an effort to move this effort forward, groups of women were hired as **COMPUTERS**

At this time, Grace Hopper was working as a **MATH PROFESSOR** at Vassar College

She wanted to enlist in the Navy at first she failed the physical because she did not **WEIGH ENOUGH**

Once enlisted, she was assigned to work with Howard Aiken who was building the **MARK I** computer at **HARVARD**

In the early days of computing the code was punched onto **PAPER TAPE**

A few years later the Army developed the **ENIAC** computer

They hired **6 WOMEN** to make it work after it was built

The Mark I Computer processed **3** instructions per second and the ENIAC could process **5000** instructions per second

Hopper worked with John Von Neumann who was in charge of the **MANHATTAN** Project

One of the goals of this project was to solve a differential equation problem. It took **3** months to figure out. What Hopper and her co-workers did not know was that they were working on the implosion technology that was used to create the **NUCLEAR** bomb that led to the end of World War II

After the war, Hopper tried to get a job at Harvard but was unable to do so because they did not hire **FEMALE** professors

She was unable to stay in the **NAVY** because they eliminated the program that she enlisted under

She was a woman in her 40's with "nothing to do". Then she found a job with a commercial computer company named **ECKERT - MAUCHLY COMPUTER CORPORATION** which later became **REMINGTON-RAND**

During 1951 & 1952 she worked on the development of the **UNIVAC I** computer

In 1951, Hopper invented the **COMPILER**

This allowed non-math people to **PROGRAM** computers in **ENGLISH**

This made the programming process more **SIMPLE & REUSABLE**

The programming language that she created was called **COBOL**. This was an acronym for **C**ommon **B**usiness **O**riented **L**anguage

In the year 2000, **70**% of all active code was written in COBOL

Hopper spent her life working in **MALE DOMINATED** organizations

As a result of this experience, she did not believe that women needed **SPECIAL GUIDANCE/MENTORING/TREATMENT** to be successful in such organizations. The passage of time has revealed that this belief is **UNTRUE**

Hopper was once name the Computing **"MAN OF THE YEAR"**

In 1967, Hopper rejoined the military and worked her way up to the rank of **ADMIRAL**

She is referred to as the "**MOTHER** of Computer Programming"

She finally retired from active duty at age **80**

Once of her biggest pet peeves was when people said **"BUT WE'VE ALWAYS DONE IT THAT WAY"**

In her office she had a **BACKWARDS CLOCK** on the wall and a **PIRATE FLAG (JOLLY ROGER)** on her desk

Despite the important work done by Hopper and other female computing pioneers, the percentage of women in the computer field is still low. There is also a lack of knowledge about their historical importance so there are no **ROLE MODELS** to inspire women to enter the field

Hopper's importance to the world of technology has been compared to **THOMAS EDISON** but this has not been included in history books

Grace Hopper died on **JANUARY 1, 1992**

In 1994, 2 years after her death, 500 women attended the Grace Hopper Celebration. In 2014, 20 years later, more than **8000** women attended