Ada Lovelace Day - Assembly Plan

Introduction

Ada Lovelace Day aims to raise the profile of women in science, technology, engineering and maths (STEM) by encouraging people around the world to talk about the women whose work they admire.

The aim of this assembly is to celebrate Ada Lovelace, a pioneer who first saw the enormous potential of computers during the Industrial Revolution.

Learning Outcomes

Pupils will:

- Understand the significance of computer science;
- Learn the story of Ada Lovelace and her achievements;
- Understand the importance of women in STEM;
- Consider the future and problems that can be solved by computer science.

Plan

This assembly lasts around 5 minutes, and contains the following sections, each lasting approximately 1 minute:

- Part 1: The computer;
- Part 2: Ada Lovelace;
- Part 3: Ada's achievements;
- Part 4: Women in technology;
- Part 5: The future.

Further Resources

- "Finding Ada" website (findingada.com) - Contains lots of information and resources on Ada Lovelace and Ada Lovelace Day.

Part 1: The computer

[Ask pupils to put their hands up if they have used a computer today.]

In fact, unless you slept out in a forest last night, you will have all probably used lots of computers today, because computers are everywhere! A computer may have woken you up this morning, made sure that the milk in your fridge was cold, and computers in your car may have helped you get to school safely.

Although computers do so much now, they were originally only intended to be great big steam-driven calculators. The computer revolution wasn't started by men sitting in basements drinking coffee, but by a Victorian mother-of-three called Ada Lovelace.

Part 2: Ada Lovelace

Ada Lovelace was a pioneer, who first saw the potential of computers in the Industrial Revolution over 160 years ago!

Ada was the daughter of the famous poet Lord Byron, and the respected intellect, Annabella Milbanke. Lord Byron was known for having a pet bear and for drinking from a skull! Worried that Ada would inherit her father's volatile 'poetic' temperament, her mother raised her with an education focusing on science, logic, and maths.

As a child, Ada was fascinated with machines, reading all about the new inventions of the Industrial Revolution that filled the scientific magazines of the time. At just 13, she designed and made a mechanical bird that could flap its wings.

Part 3: Ada's Achievements

Ada's mentor, the mathematician and inventor Charles Babbage, shared the design of his 'Analytical Engine' with Ada. Although it was never built, the Analytical engine was a huge machine designed for performing calculations useful in engineering and nautical navigation. The calculation that this machine could perform would at the time have been undertaken by groups of mathematicians, who were called 'computers'!

When Charles Babbage asked Ada to translate an Italian article on the Analytical Engine, Ada added a few notes of her own, which ended up being twice the length of the original article! Ada's notes were not comments on the design of the machine, but more on the potential that she could see beyond just number crunching.

Ada's notes also included a method for programming the Analytical Engine to calculate a special set of numbers, and so Ada is also known as the first computer programmer. More impressively, however, Ada also wrote about the potential of the Analytical Engine to manipulate symbols as well as numbers, and theorised that the machine could be programmed to play music!

It was another 100 years until Lovelace would receive recognition, when her notes became one of the critical documents to inspire Second World War codebreaker Alan Turing's work on the first modern computers in the 1940s.

October 13th is Ada Lovelace Day, which celebrates Ada's achievements, as well as the achievements of other women in technology.

Part 4: Women in technology

Ada Lovelace Day is about shining the spotlight on her achievements, and inspiring more people (especially girls) into careers in the technology sector.

With women making up only 17% of the technology workforce in Britain, there is a hope that Ada Lovelace could inspire the next generation of female computer experts.

Here are some examples of women making an impact in technology today:

Olivia Hallisey, a 16-year-old from America won the 2015 Google Science Fair with her project to develop a fast and cheap test for the Ebola virus, which she says gives easy-to-read results in less than 30 minutes — potentially before someone is even showing symptoms.

María Celeste Medina is the co-founder of Ada IT, a software development and testing startup based in Buenos Aires, Argentina, focused on creating job opportunities for women.

Mai Abualkas Temraz is the Program Coordinator at Gaza Sky Geeks (GSG), an organisation that helps new tech businesses grow. She is the first Palestinian female licensed amateur radio operator. She holds a degree in Communications Engineering from the Islamic University, the top university in Gaza.

Juliana Rotich is the director of Ushahidi, where local people use web, mobile and location data to share updates during crisis situations, such as the Kenyan presidential election crisis in 2007. Originally from Kenya, Juliana studied IT at university and became a well known blogger.

Part 5: The future

You can see that computer scientists are creative problem solvers, artists, authors, and scientists. Lots of industries need computer scientists. They're needed in biology, video gaming, schools, medicine, and anywhere that innovation is involved. Computer science will be critical in solving the world's biggest problems. You could be one of them too.