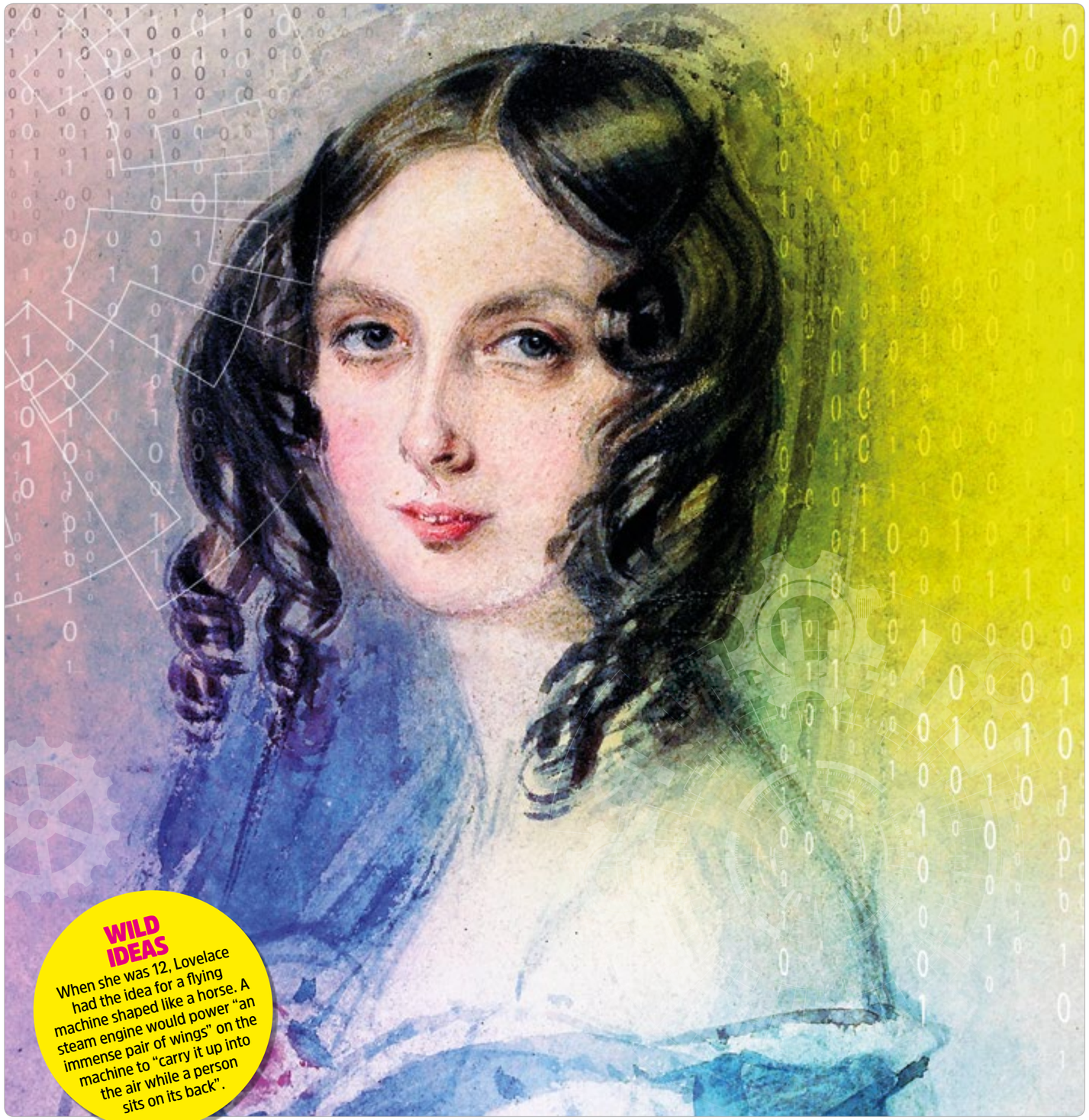

WILD IDEAS

When she was 12, Lovelace had the idea for a flying machine shaped like a horse. A steam engine would power "an immense pair of wings" on the machine to "carry it up into the air while a person sits on its back".

The first computer programmer

Ada Lovelace had a huge influence on modern computing.

On the second Tuesday of October each year, the world remembers the work of the first computer programmer (a person who writes instructions that tell a computer what to do). However, they didn't live in this century, nor even in the last. In fact, the first programmer lived more than 200 years ago.

A child of science

Ada Byron was born in London on 10 December 1815. Her father was Lord Byron, a famous poet who was known for his romantic relationships, scandalous behaviour and great charm.

Her parents split up shortly after she was born and Lovelace never saw her father again. Her mother, Lady Annabella, was determined that her daughter would not grow up like her father, so she kept her away from the poetry and literature that he loved. Instead, Ada learnt mathematics and science. It was unusual for girls at this time to study such subjects, but she showed a great talent for them.

The father of the computer

When she was aged about 17, Ada met the inventor Charles Babbage, who is now known as the father of the computer, and they became great friends. One of Babbage's inventions was the "difference engine", a form of enormous calculator that was turned by a handle. When Ada was able to see an early working model, she was fascinated. She studied and learnt more, becoming an expert in these extraordinary machines.

In 1835, she married William King, the first Earl of Lovelace, and together they had three children. However, she made sure that her marriage would not stop her studies. In a letter to a friend, she wrote, "Matrimony [marriage] has by no means lessened my taste for these pursuits, nor my determination to carry them on".

The Analytical Engine

Her most lasting contribution to computer science came in 1843. She was asked to translate an Italian article about Babbage's latest idea, the Analytical Engine. This was a groundbreaking new machine that could do complicated calculations, store them and print them out. If Babbage had been able to build this incredible device, it would have been the world's first computer.

The text in the article was very complicated and so Lovelace added her own thoughts and ideas to make it clearer. Her notes ended up being three times longer than the original article about the Analytical Engine and covered topics such as looping – where a computer repeats a series of instructions – and writing codes. Her talent and skill meant she could see the potential of the engines to do more than just calculations.

Lasting legacy

It wasn't until computer science really began in the 1940s and 1950s that Lovelace's work was recognised. Her ideas are credited as a major influence on modern computers. Today, computer programmers can write in Ada, a computer language named in her honour, and Ada Lovelace Day is held every year in October to celebrate women in science. In 2017 the Ada Lovelace Institute was opened. It aims to make sure artificial intelligence works for the good of people. So next time you turn on a computer, remember the remarkable woman who helped make the idea come true.

Ahead of her time

Lovelace also discussed artificial intelligence, although she did not believe that machines would ever be able to think for themselves. She even wrote a step-by-step guide describing how the engine could calculate a sequence of numbers. Her guide is now considered to be the first written computer programme. Lovelace predicted that in the future machines could make music, create pictures and help humans with their scientific research.

Sadly, her ideas were very far ahead of her time and far too complicated for most people to understand. As a result, her theories were largely ignored in her lifetime. Ada Lovelace died of cancer on 27 November 1852, in London, and was buried next to her father in Nottingham.