# Alan Turing: The Enigma Man Who Deciphered the Unbreakable Code

Alan Turing was a British mathematician, logician, cryptanalyst, computer scientist, and philosopher. He is best known for his work on the Turing machine, which is a theoretical model of computation that forms the basis of modern computers. Turing is also known for his work on the Enigma machine, which was used by the Germans to encrypt their communications during World War II. Turing's work on the Enigma machine helped the Allies to break the German code, which was a major factor in the Allied victory in the war.

## Early Life and Education

Alan Turing was born on June 23, 1912, in Maida Vale, London, England. His father, Julius Mathison Turing, was a colonial administrator in the Indian Civil Service. His mother, Ethel Sara Turing (née Stoney),was the daughter of a wealthy landowner. Turing had an older brother, John, and a younger sister, Margaret.
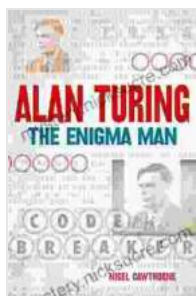
**Alan Turing: The Enigma Man** by Nigel Cawthorne

★★★★☆ 4.4 out of 5

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Turing's family moved to India when he was a young child. Turing attended boarding school in England from the age of 8. He showed an early aptitude for mathematics and science. In 1931, Turing entered King's College, Cambridge, to study mathematics.

## Work on the Enigma Machine

In 1939, Turing joined the Government Code and Cypher School (GC&CS),a British intelligence agency responsible for breaking enemy codes. Turing's work at GC&CS focused on breaking the Enigma machine, a cipher machine used by the Germans to encrypt their communications.

The Enigma machine was a complex electro-mechanical device that could be used to generate over 150 trillion different code combinations. The Germans believed that the Enigma machine was unbreakable. However, Turing and his team of codebreakers were able to develop a number of techniques to break the Enigma code.

In 1940, Turing's team developed the Bombe, a machine that could be used to automatically search for Enigma keys. The Bombe was a major breakthrough in the effort to break the Enigma code. By the end of the war, the Allies were able to read most of the German Enigma traffic.

Turing's work on the Enigma machine was a major factor in the Allied victory in World War II. It is estimated that Turing's work shortened the war by at least two years and saved millions of lives.

## Post-War Career

After the war, Turing continued to work on computer science and artificial intelligence. In 1948, he published a paper entitled "Intelligent Machinery," which is considered to be one of the founding documents of artificial intelligence. In 1950, Turing joined the University of Manchester, where he worked on the development of the Manchester Mark 1, one of the first electronic computers.

Turing was also a pioneer in the field of theoretical biology. In 1952, he published a paper entitled "The Chemical Basis of Morphogenesis," which is considered to be one of the founding documents of theoretical biology. Turing's work in this field laid the foundation for understanding how biological organisms develop.

## Personal Life

Turing was a homosexual. In 1952, he was arrested and charged with gross indecency. He was convicted and sentenced to two years of probation. As part of his probation, Turing was required to undergo hormone therapy, which was intended to reduce his sexual desire. The hormone therapy had a negative effect on Turing's physical and mental health.

In 1954, Turing committed suicide by eating a cyanide-laced apple. He was 41 years old.

## Legacy

Alan Turing is considered to be one of the most important thinkers of the 20th century. His work on the Turing machine, the Enigma machine, and artificial intelligence has had a profound impact on our understanding of computation, communication, and the nature of intelligence.

Turing's legacy is also marked by the tragedy of his untimely death. He was a brilliant scientist who was persecuted for his sexuality. His death is a reminder of the importance of tolerance and acceptance.

Alan Turing was a true pioneer in the field of computer science. His work on the Turing machine, the Enigma machine, and artificial intelligence has had a profound impact on our world. Turing was also a victim of prejudice and discrimination. However, his legacy as a great scientist and thinker will continue to inspire future generations.

## Additional Resources

* [The Turing Archive](https://www.turingarchive.org/) * [The Alan Turing Institute](https://www.turing.ac.uk/) * [The Enigma Machine] (https://www.enigmamachine.com/)
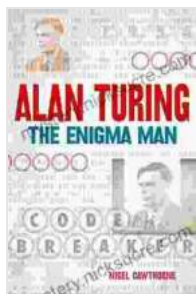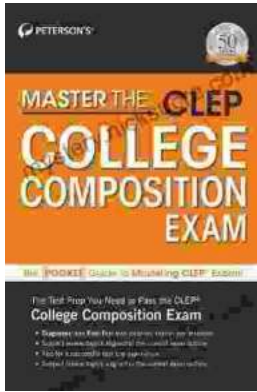
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