

ALBERT EINSTEIN

Einstein was born in Ulm, Germany, in 1879. As a child he had speech difficulties. He studied mathematics and physics in Zurich, Switzerland, then from 1902 to 1909 he worked in the Swiss Patent Office in Bern.

In 1905, at age 26, Einstein wrote four papers for the German scientific publication *Annals of Physics*. In one article he said light could sometimes be described as particles, or “quanta.” The article explained some puzzling¹ experimental results, such as the photoelectric effect, and it became the starting point of quantum physics.

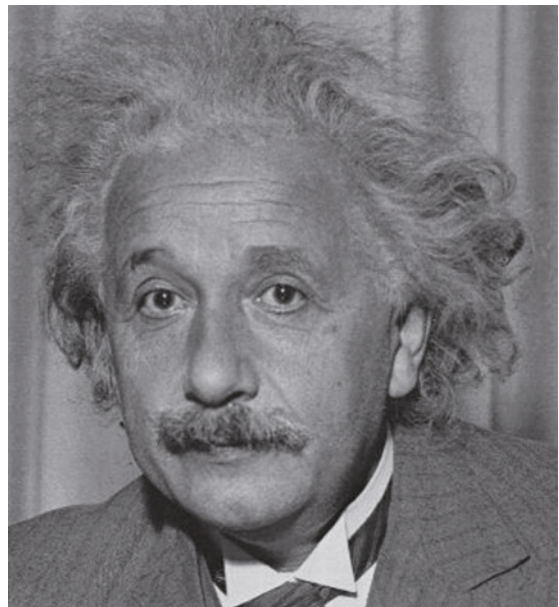
In another famous paper, he outlined his special theory of relativity, which says that the time between two events depends on the speed of the observer measuring it. Time, in other words, is “relative.” In a follow-up paper later that year he showed another aspect of relativity, namely that energy and matter are equivalent. This is expressed in his famous formula:

$$E=mc^2 \text{ (Energy equals mass times the speed of light squared).}$$

In another paper, he explained Brownian movement, the irregular movements of particles in water. He showed that random² collisions of water molecules would exactly produce the motion. This is considered one of the first proofs of the existence of atoms.

Beginning in 1909 Einstein accepted various teaching positions in Europe. Then, in 1933, Nazi Germany took away his citizenship, property and positions because he was Jewish. He therefore moved to the United States and took a position at Princeton University.

In August 1939, he wrote a letter to President Franklin Roosevelt, urging³ him to provide government help in creating an atomic bomb, and warning that Germany might already be working on one. The bomb was later used to end World War II. He died in Princeton in 1955.



GLOSSARY

- 1 ambiguous
- 2 casual
- 3 asking persistently

READING COMPREHENSION

● Answer the following questions.

- 1 When and where was A. Einstein born?
- 2 What did he study?
- 3 How did he describe light?
- 4 What does the theory of relativity state?
- 5 What is Brownian motion?
- 6 Why did he move to the United States in 1930s?

ACTIVITIES



VOCABULARY

● Match a term in the first column with one in the second column, then provide the Italian equivalent.

- | | |
|--------------|----------------|
| 1 Speech | A molecules |
| 2 Patent | B physics |
| 3 Scientific | C office |
| 4 Quantum | D war |
| 5 Random | E difficulties |
| 6 Water | F publication |
| 7 Teaching | G collisions |
| 8 World | H positions |