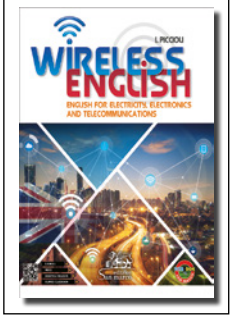

George Boole

George Boole (1815-1864) was an English mathematician, whose algebra of logic, now called Boolean algebra, is basic to the design of digital computer circuits.

Boole was almost self-taught in mathematics, apart from what he learned from his father, a tradesman, and during some years at local schools. When his father's business declined, George had to start working to support the family. He began teaching in village schools around the city of Lincoln when he was only 16.

During his free time he read mathematics journals in the Lincoln's Mechanics Institute. There he also read Isaac Newton's and Joseph-Louis Lagrange's works. He also began to solve advanced problems in algebra.

In 1844 he discussed how methods of algebra and calculus might be combined in an important paper for which he was awarded the Royal Society's first gold medal for mathematics. Boole soon realized that his algebra could also be applied in logic.

On the basis of his studies on this field, in 1849 Boole was appointed professor of mathematics at Queen's College, County Cork, even though he had no university degree.

Boole pointed out the analogy between algebraic symbols and those that can represent logical forms. Boole's general method of logical inference, fully stated in *Laws of Thought* (1854), allows one, given any propositions involving any number of terms, to draw conclusions that are logically contained in the premises. He also attempted a general method in probabilities, which would make it possible from the given probabilities of any system of events to determine the consequent probability of any other event logically connected with the given events.

Boole's reasoning, which was later called Boolean algebra, has led to endless applications, from telephone switching to electronic computers, which use binary digits and logical elements that rely on Boolean logic for their design and operation.

ACTIVITIES

1 *Read the text and underline the key words. Then, summarize it.*