Blaise Pascal: The Invention Of Digital Calculator

Blaise Pascal was born in Clermont-Ferrand, France on June 19th,1623. He lost his mother, Antoinette Begon, at the young age of three years old. His father, Etienne Pascal was a local judge and a member of the group, “Noblesse de Robes”, he also had an interest in science and mathematics, also Pascal’s father was the tax collector for the township of Rouen. Pascal had two sisters, Jacqueline who was younger than him and Gilberte who was older. He was a child prodigy educated by his father and worked on conic sections and projective geometry and later laid down the foundations for the theory of probability. In 1642 when Pascal was 18 years old, he invented and build the first digital calculator as a way of helping his father perform tedious tax accounting.

Pascal’s calculation device was called Pascal’s calculator, the Pascaline or the Arithmetique. As Pascal continued to make improvements to the design of his calculator over the next decade he ended up building fifty Pascaline machines in total. He worked so hard on this machine, it is said, that his mind was disturbed for the next three years. According to his sister Gilberte, Pascal’s exhaustion did not come from the labor he put into designing the machine, but rather in trying to make the Rouen artisans understand what it was all about. Only 8 or 9 of the 50 survive to the present day, and can be seen in private or museum collections

The first official Pascaline calculator could only handle 5 digit numbers, then developed to 6 digit and 8 digit versions over time. The build of the calculator had metal wheel dials which then turned to the appropriate numbers using a stylus. Then answers would appear in boxes at the top of the calculator. It was a polished brass box that was about 350mm by 125 mm by 75mm. It was small enough to be carried. On the top of the machine was a row of eight dials, with the numbers 0 to 9, which were used to add a column up to eight figures.

To us now in the future the machine could be considered very confusing, “The machine could add, subtract, multiply, and divide. Multiplication and division were somewhat difficult to do, by performing multiplication and division by repeated addition and subtraction” (Educalc.net). Apparently, the machine could really only add, since subtractions had to be performed by using complement techniques from which the number to be subtracted is first converted into its complement and then added to the first number. How it ended up working was you put in your calculations for addition, subtraction, multiplication, or division, pull on the handle and then the answer would appear at the top of the device.

Calculators have really blossomed over the years, especially nowadays. The calculator can range from basic arithmetic to complex mathematics. “Since it’s an invention, the electronic calculator has evolved from the machine that could only perform simple four-function operations (addition, subtraction, multiplication, division) into one that can now also execute highly-technical algebraic symbolic manipulations instantly and accurately. Each new generation of calculators builds on the previous one with heightened speed and more advanced capabilities” (The Role of Calculators in Math Education). There are many benefits of the calculator especially “to students to help make quick, accurate mathematical calculations, help them expand their mental abilities, help them better understand intangible concepts, through tangible means, and teach logical thinking, and problem-solving skills” (The Benefits of Using a

Scientific Calculator in the Classroom). The first calculator was bulky but was still able to be moved around with someone. Over the year calculator have gotten smaller and more portable. There are more advanced calculators that you can put notes on and do complex equations and graphs and simple ones for small math equations. We even have calculators on our phones to help with more simple fast math.

As a student myself I believe that the calculator was one of the best inventions for students. I have always had a hard time with math and being able to do it in my head correctly. With the calculator, I can check and make sure that I have the correct answer and type equation into it and get my answer. With math continuously advancing, there are some problems that you would not be able to solve without a calculator.

As we can see Blaise Pascal’s invention of the calculator has really helped the development of mathematical studied even more so into the present day. The calculator is still a huge device to this day. It sure has been changed as mathematics develops over the years, but the first calculator had really set a foundation for the future of mathematics.