

OBERLIN HIGH SCHOOL  
BUSINESS EDUCATION DEPARTMENT  
INFORMATION TECHNOLOGY

Grade 8

**Unit 1**

Topic: **The History of Computer**

Duration: 3 weeks

Date: October 5-23, 2020

At the end of the lesson Students should be able to:

1. Define the terms:  
Information Technology, computer
2. Identify the different development of computers.
3. Explain the use of each computer invention and how each invention came about.

**What is Information Technology?**

Information Technology is the technology involving the development, maintenance, and use of computer systems, software, and networks for the processing and distribution of data.

**What is a computer?**

A computer is an electronic device that receives data (input), process data, stores data and produces results (output).

**Early Computer Development**

Over the year's humans have been seeking ways to make counting, calculating and processing large amount of data easier in a short period of time. The first aspect of counting was using our fingers, counting sticks and counting stones. As the ages modernized new ways and devices were discovered for calculating. The computing devices invented are:

- a. Abacus
- b. Pascaline

- c. Leibniz Calculating Machine
- d. Jacquard's Loom
- e. The Difference & Analytical Engine
- f. The Tabulating Machine

### **The Abacus**



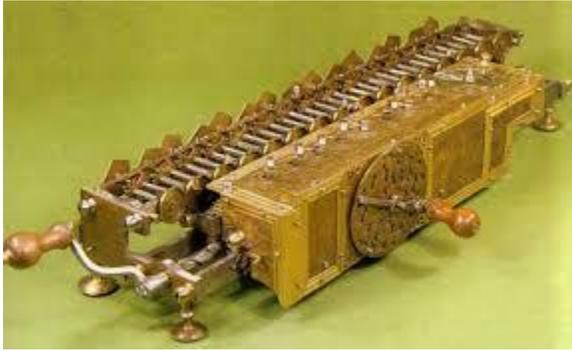
The abacus is an open wooden rectangular shape with wooden beads on vertical rods. Each bead can represent a different number. For simple calculation purposes, each bead can represent one number. A person can move the beads from one side to the other and they would count, 'one, two, three', etc. This mechanical device is used in the aid of performing mathematical calculations. The abacus was first used in China in around 500 BC and is also called *suan-pan*.

### **The Pascaline- Blaise Pascal (1623-1662)**



The Pascaline was the first successful mechanical calculator. It was developed in 1642 by the French mathematician Blaise Pascal. This machine was used for his father who counted tax. The machine was capable of adding subtracting, multiplication and division by using gears. When a gear with ten teeth made one rotation is tens. A second gear shift one tooth until that gear rotate ten times which is hundreds then another gear rotated ten times to get thousands. The Pascaline was also called the Arithmetic Machine.

**Leibniz Calculating Machine- Gottfried Wilhelm Leibniz (1646-1716)**



Gottfried Wilhelm Leibniz was a German philosopher and mathematician who improved the Pascaline by creating a machine that could also divide, multiply and extract square root. In 1673 the Leibniz Calculating Machine was invented. The Leibniz mechanical multiplier worked by a system of gears and dials.

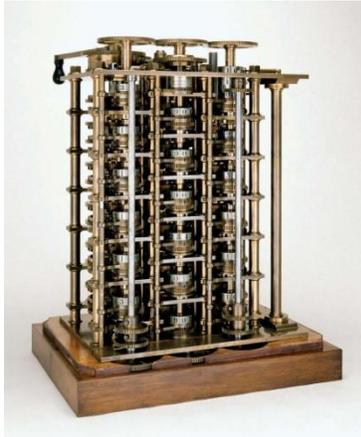
**The Jacquard Loom- Joseph Marie Jacquard (1752-1834)**



Joseph-Marie Jacquard was born in a family of weavers and invented the Jacquard Loom in 1801. The loom was invented to reduce the time spent by weavers on the job. The idea behind the Jacquard-loom was a system of punch cards and hooks. It uses a chain of punch to instruct the loom to make different fabric. For e.g. a loom can have hundreds of cards with holes corresponding to hooks that can be raised or lower to design the fabric. The Jacquard loom is

important to the history of computers because it is the first machine to use interchangeable punch card to instruct a machine to perform automated tasks.

**The Difference & Analytical Engine-Charles Babbage (1792-1871)**



During the industrial revolution every banker and navigator depended on mathematical tables. However, these hand calculated tables were usually full of errors. In 1822 Charles invented an automatic mechanical calculating machine to manufacture an error-free mathematical table which he called the Difference Engine.

With the help of Augusta Ada Byron (also known as the first programmer), in 1823 Babbage created a fully program- controlled automatic mechanical digital computer called the Analytical Engine. The Analytical Engine was the first general purpose digital computer that is capable of storing instructions and carry out more complicated calculations and mathematical operations.

**The Tabulating Machine –Herman Hollerith (1860-1929)**

In 1889, an American inventor Herman Hollerith applied the Jacquard loom concept to create his Tabulating Machine. This invention was used to compute the United States census in a faster way. The machine used a punch card reader to store data information that was then fed into a machine that compiled the results mechanically.