



New in the Renaissance

- 1401 - Italian Renaissance in architecture begins in Florence
- 1420 - European artists paint with oils
- 1423 - European use of block printing to produce books
- 1430 - Start of Renaissance music era
- 1445 - Johannes Gutenberg invents the printing press
- 1448 - Gutenberg sets up printing shop in Mainz, Germany
- 1452 - Metal plates used in printing
- 1457 - First known color print produced in Mainz, Germany
- 1464 - French king establishes postal service
- 1474 - German astronomer Regiomontanus first uses printing for science
- 1475 - Vatican library produces first printed recipes (included Hummingbird livers!)
- 1476 - William Caxton introduces Gutenberg's press to England and begins printing
- 1484 - Manual for sea navigation produced in Portugal
- 1485 - First book on architecture printed
- 1489 - Book by German mathematician introduces "+" and "-" signs
- 1492 - German map-maker constructs first globe
- 1495 - Paper mill established in England
- 1497 - Savonarola burns books and paintings in Florence
- 1500 - Books widely available – about 10 million copies of 40,000 titles
- 1510 - Earliest form of the violin appears in Italy
- 1522 - Martin Luther publishes German translation of New Testament Bible
- 1530 - First printed songbook appears in Rome
- 1536 - First newspaper, *the Gazette*, printed in Venice, Italy
- 1537 - Gerardus Mercator begins map and globe-making business
- 1543 - Astronomer Nicholas Copernicus claims sun as center of the universe
- 1565 - Graphite pencil is introduced
- 1582 - Gregorian calendar improves on Julian calendar used since Roman times
- 1584 - Printing introduced to the Americas
- 1591 - French mathematician's algebra book uses "x" and "y" in problem-solving
- 1593 - English poet and playwright, William Shakespeare, publishes play
- 1597 - First chemistry book published in Germany
- 1598 - First Italian opera is performed

Based on information in the chronology, what can you conclude about how the Renaissance spread from Italy throughout the rest of the European continent?

Living Legend

THE STORY OF JOHANNES GUTENBERG



Here are those who speak of me, Herr Johannes Gutenberg, as a "Living Legend." I am, you see, well-known for my invention, movable type, which no doubt has proved to be very important to the world. Yet I would be the first to say that my invention came about as a result of much hard work and determination.

Before my success in developing the press, printers used a method known as block printing adopted from the Chinese and dating back to the 9th century. Letters, illumination, and pictures were carved in mirror image into a wooden block, inked, and then pressed onto paper.

THE WRITING ON A BLOCK LOOKED MUCH LIKE THIS

The printing process was terribly difficult. Whole pages had to be carved in reverse into a block. Highly skilled craftsman would carve out all of the negative space, leaving only the letters, lines, and shaded areas raised. It took a great deal of time and patience to achieve this without error. Even in the hands of the greatest of wood carvers, the wooden block tended to split or wear out after only a short time.

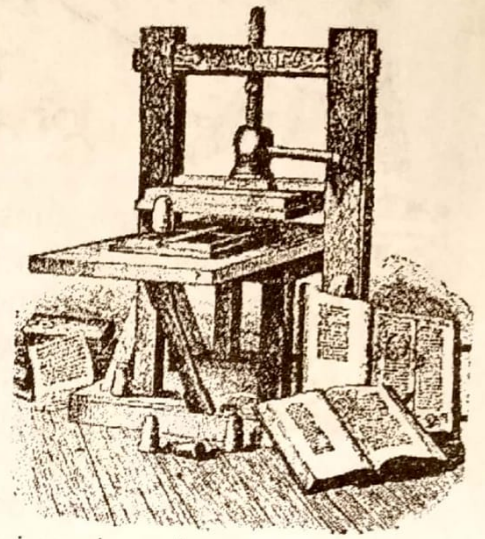
After Europeans learned about printed paper money and playing cards from Marco Polo's Travels in 13th century, printing began using the wood block method. While the block method was faster and easier than hand-copying texts, it still posed great difficulties. I knew this and felt certain that there had to be a better way to achieve the same results.

Though I was not the first to work at improving the printing process, my training and work as a goldsmith, I feel, made me the right man for the task. In my younger years I had traveled throughout Germany learning about metalwork and printing. I knew how to cast metals into various shapes for jewelry, and this gave me the idea for casting letters instead of rings and necklaces.

I thought of a plan to combine the use of metal casts with the process of pressing wine that I had seen in the Rhine Valley. The letters could be placed in a wooden frame in mirror image and tightened into place. To print, ink was rolled over the raised surface in the frame and then pressed against a sheet of paper with the same large wooden screw used in the wine presses. At first I experimented with carved wood letters and shapes and later formed molds into which molten metal could be formed. Rather than creating whole pages of text, I formed small, individual metal letters which could then be grouped and regrouped in a frame to create different pages.

Since the letters could be used over and over again, the process proved to be much faster than block printing. And since the metal-cast letters would last a long time, the process made printing far less costly as well.

I must admit, however, that the project did cost me dearly. Having already spent a great deal of my own money in developing the metal-cast letters, I returned to my hometown of Mainz, Germany with the goal of finding investors to back further work as I heard there were others there who had interest in such an invention. There were, and so we built our press and set about making our investments pay.



In 1440 when our first press was completed, the most popular book by far to read was the Bible. Until that time copies of the Good Book had always been handwritten and then, later, block printed. In either case it was terribly expensive so that only the Church or the very wealthiest of nobles could afford to own a copy. My business partners and I decided it would be wise to begin our work with the Bible, allowing it to become more widely available and far less expensive. (Here is a page from our first book.)



Of course we met with great success, as it and other books became more affordable. While we had hoped to keep the new printing method secret in order to reap the greatest profits from our work, it was not to be so. Word of the invention soon leaked out and the process spread rapidly around the continent. Within a short time most European cities had their own printing houses.

Still, I cannot say that I am disappointed. In just twenty-five years, my invention has achieved what I had hoped it would. Because of the new process, people of all walks of life are now able to buy books. Already there are thousands of different books in print. The new availability of books has in turn greatly encouraged literacy and learning. New ideas are now easily communicated and are flourishing. I would have to say that these changes I have been so blessed to witness have proven to be my greatest reward.