



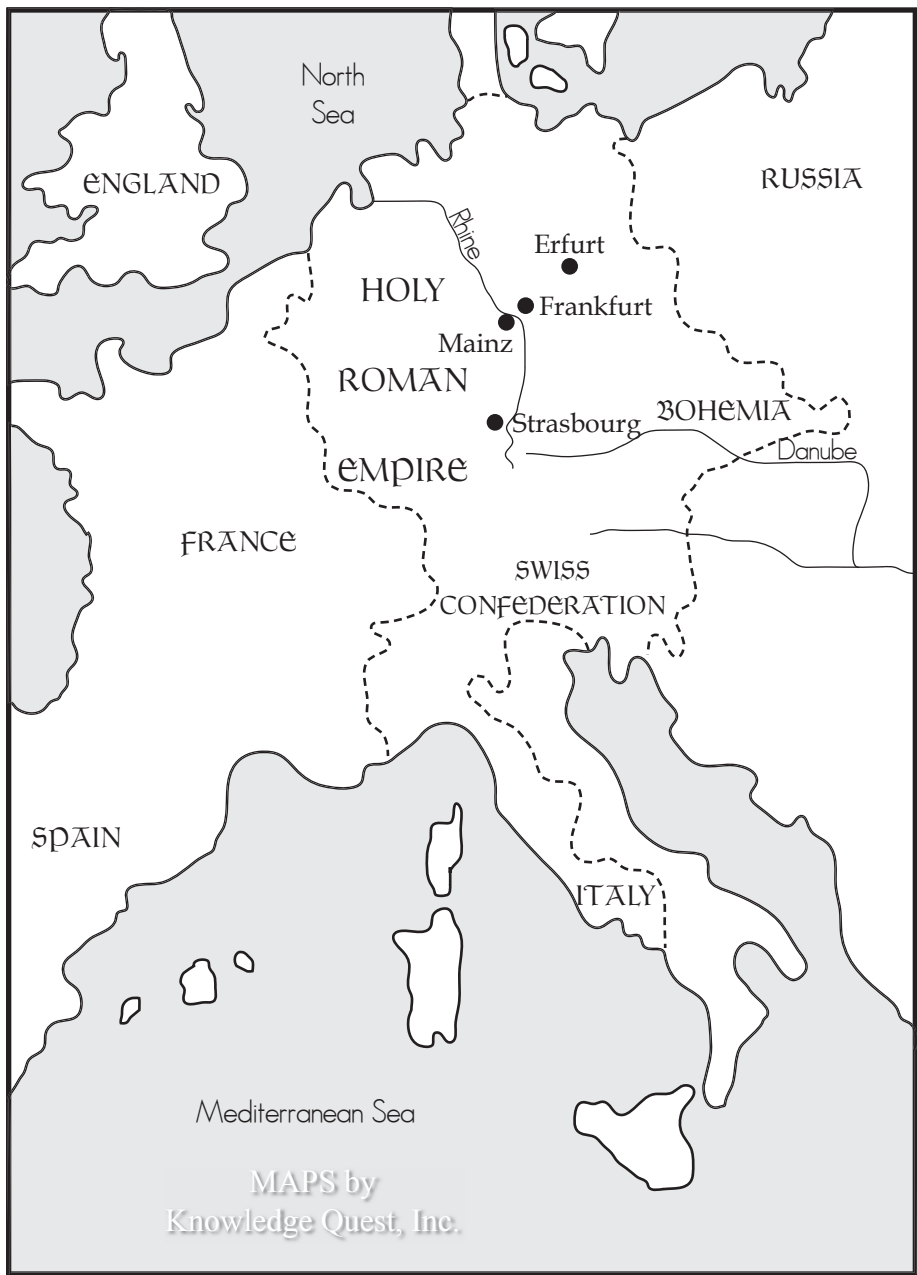
JOHANN GUTENBERG

And the First Printed Book

by Terri Johnson



What *Really* Happened During the Middle Ages



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atching his step instinctively, Johann made his way along the docks which divided the walled town from the great river. This town of Mainz was not a large city even by medieval standards, but it was a busy town nonetheless and a major center for trade along the Rhine River. Johann enjoyed watching the fishermen tossing their catch to the fishmongers and the merchants haggling over the prices for their much needed supplies from the river men.

Johann stepped around the bolts of woolen cloth and stacks of sawn boards with youthful ease and moved past the money changers towards the town square. There was an unusual buzz in the narrow streets as the townspeople talked in raised voices and ran quickly past him. Something strange was afoot, but he could not interpret the cause of the commotion.

Clutching his school book more tightly to his chest, heart pounding within, he ran the rest of the way to the town mint where he hoped he would find his father. As he approached the shop, he noticed that the craft workers were not busy punching coins as they should, but instead were excitedly talking amongst themselves.

“Where’s my father?” Johann called with a nervous shout. The men stopped talking and all eyes turned toward the frantic boy.

“Johann,” the master craftsman came forward and said sternly, “Get out of here! This is no place for you today. I don’t know where your father is, but fortunately for him, he is not here.”

The boy quickly turned and raced for home. What was happening today? Where was his father? Although not a coin-maker himself, Johann’s father supervised the operations at the mint to assure that the making of the town’s money was done properly. This was an important responsibility he carried as a nobleman of the town. Why was he not there today?

As he approached his home on the corner of Christophstrasse and Schustergasse, he saw his mother leaning dangerously out the top floor window of the Gutenberghof, pulling in the wet clothes off the line. “Henne,” his mother called to him, “Schnell! Quick! Grab your things! We are leaving town! Schnell! Schnell!”

He joined the other members of his family as they quickly stuffed a few personal belongings into their travel sacks and hurried back down to the docks. The five of them boarded a boat sailing south to Eltville, their country home.

Settling onto the deck of the boat for the 7 ½ mile journey with his sack clasped loosely in his arms, Johann Gutenberg looked back at Mainz, the city of his birth, and wondered when he might return home again. How he would miss the Gutenberghof, his home, and his school chums at St. Viktor!

Eleven-year-old Johann listened as his father told him that earlier that day the craft workers from all the trades had stormed the town hall demanding that they operate their shops themselves. They no longer wanted to be supervised by the lords of Mainz. His father, Friele, had decided that it would be better to leave town while their tempers flared and the violence raged against the town noblemen. Besides, they were terribly outnumbered!

When emotions cooled and normality returned, so would they, his father assured him. His mother Else and his sister, also named Else, were looking forward to their time of retreat in Eltville. It was quieter there. His brother Friele also seemed glad for the adventure and change of scenery. Only Johann, the youngest, longed to remain in Mainz.

The year was 1411 when Johann and his family fled their home to live at their country estate in Eltville. They remained there for 3 years as the turmoil continued to boil between the craft workers and the noblemen of Mainz.

While in Eltville, Johann went to the community school at St. Peters. Here he continued to learn Latin and grammar and basic sums. Every day he would take to class his one and only school book entitled *The Donatus*. It was only a partial

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book because he spent a portion of each day copying in his own hand the text that the school master read aloud. This was because there was only one book for the entire school. In those days, all books were hand copied. The students were required to use their best handwriting as someday another book might be copied from theirs.

Because books were so rare, they were also very precious and Johann cherished his school book even though it was merely a grammar text written in Latin. Someday he hoped he might own his very own copy of the Bible. His father had a beautiful heirloom Bible and it was treasured by the entire family.

In 1414, when the turmoil had died down, Johann's family cautiously returned to Mainz. Once again, Johann began to attend the school at St. Viktor, just outside the city walls. At 14, he was one of the oldest pupils at the school. Many of his chums had already left to attend University or help manage their family estates. In a couple of years, he would be old enough to attend University and he looked forward to that day with his whole heart.

That day finally arrived and Johann left home to attend the University in Erfurt. He continued his lessons in Latin and grammar, but he also studied logic, physics, astronomy, philosophy and debate. Although this university was located in the heart of the Holy Roman Empire, some of its teachings went against the teachings of the church. The schoolmasters encouraged their students to read and interpret the Bible for themselves instead of relying solely on the sermons of the church bishops. As a result, Johann Gutenberg would

often spend time in the monastery of St. Peter and watch the Benedictine monks hand-copy the Bible. He would read and absorb the open pages of the word of God, hiding them in his heart. He was fascinated by the beautiful script of the monks, but frustrated by the long and agonizing process. It could take months, sometimes more than a year, for one monk to finish one book. There had to be a better way.

In 1419, Johann's father died and he returned home to take care of his mother. He was now a young man, college educated and eager for whatever lay ahead. By this time both his older brother and his older sister had married. His brother Friele and his new wife had also recently moved into the Gutenberghof. As their family grew, Johann felt less and less comfortable living in his childhood home. It was time to move on and make a life for himself.

Once again, Johann packed his belongings, bade farewell to his family and left the town of his birth. The year was now 1429. Traveling on horseback, Johann rode past rolling vineyards and through dense forests to the town of Strasburg 100 miles to the southwest in what is now modern day France. It was then the fifth largest community in the German Kingdom. The pope himself visited Strasburg around this time and this is how he described the city, "With its many canals, Strasburg has a resemblance to Venice... The town has mansions for gentlemen which are fit for princes."

Johann took up residence at the monastery of St. Argobast a couple of miles outside the walled fortress of

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Strasburg. Here he began to experiment in what he secretly called “the art and adventure.” He would work long hours into the night, melting down metals, hammering frames and boards into place, thankful for the quiet seclusion of this house at the monastery.

What was he up to? When he hired a goldsmith from town to help him determine the best mix of metals for his project, three gentlemen by the names of Hans Riffe, Andreas Heilmann and Andreas Dritzehn became curious about his mysterious activities. He wasn’t quite ready to share with them his most closely guarded secret, but he was willing to take them on as partners on a fund raising adventure he had recently learned about.

Every seven years the church in the nearby town of Aachen held a festival. This church believed that it had three holy relics in its possession – the swaddling clothes of the baby Jesus, the robes of his mother Mary, and the loincloth of the crucified Christ. It was believed that if one could just catch a glimpse of these sacred objects, he would be cured or immune from many diseases.

The priests would hold up the objects from a landing between the cathedral spires during the festival for the crowds below to view. The press of the masses became so great that on many days the city gates had to be closed. The church leaders decided that it was impractical for every person in the Holy Roman Empire to see these sacred objects personally, so they needed to think of a way for the travelers to take the holy and healing rays home to their loved-ones. The solution was mirrors. Mirrors were a new invention of the time and

the people were led to believe that if they held the mirrors in the direction of the holy relics, they could catch their healing powers. Once captured and transported safely home, whoever looked upon the mirror that glimpsed the sacred objects would absorb the healing rays.

The goldsmiths of Aachen could not keep up with the demand for mirrors so they agreed that others could produce and sell mirrors for the Aachen festival held every 7 years. This is what Gutenberg and his partners agreed to do and they began to produce mirrors in his workshop. The festival was one year away and they set about making as many mirrors as possible in that amount of time.

They put all of their money toward the project knowing that soon their investment would pay off. They were excited to earn a great deal of money from the sale of their mirrors. Gutenberg was particularly eager for cash to put towards his other secret art – the invention he had not revealed to anyone. Then misfortune struck. Another bout of the plague struck the area and the festival was postponed for a year. Their enormous profits would have to wait for an entire year and they had sunk all of their money into this venture.

Gutenberg had to think fast. Fearing that the partnership might dissolve, he decided to let them in on his most secret invention. But first, they had to agree not to tell a soul and they had to sign a contract stating that if any one of them should die before the invention was completed, his share of the profits would be divided among the remaining partners, with the exception of 100 gulden which would go to his next of kin. Each one agreed and the contracts were written up.

Johann Gutenberg began to tell them about his dream of making books faster and cheaper. He conceived of an idea of making letters, which he called type, that could be arranged and rearranged to make words. The words could be placed together to form lines, even pages of type that could be printed on paper or vellum. These arranged pages could be proofed and printed multiple times to achieve many copies exactly alike. He explained to them that he didn't have all of the details worked out, but that he had lots of ideas he was working on and that he welcomed their time and resources on completing his invention.

Wow! The partners were exhilarated! They immediately threw their energies into this new project. Gutenberg taught them everything that he knew so far about melting down metals, making forms, mixing dyes. They set up a working press at Dritzehn's house in town, while the metal letters were cast at Gutenberg's home at St. Argobast. He did not want to set up the entire printing operation in one place for fear of casual onlookers catching on to his idea.

Once again misfortune struck. On Christmas Eve, Andreas Dritzehn became ill from the plague and died during the night. Gutenberg grieved for his friend. He also worried about the printing press. He sent his servant to Dritzehn's home to take apart the press so that no one could tell what they were using it for. Shortly after his death, Andreas's brother George came across the contract written up by Gutenberg and his partners and noticed something strange. Andreas Dritzehn had forgotten to sign the contract!

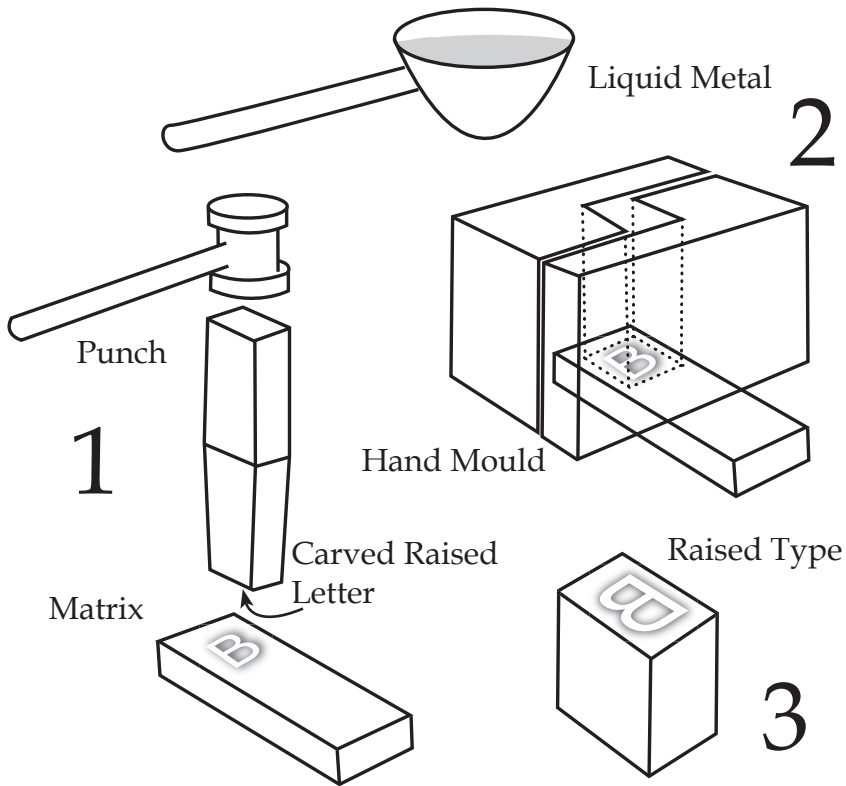
George Dritzehn immediately demanded that he take his brother's place in the partnership or he would take Gutenberg to court. Gutenberg refused, went to trial and triumphantly won the case. Unfortunately this legal fiasco lasted nearly a year and the remaining partners grew impatient and lost interest in the invention of movable type. The partnership dissolved and the other two men went off to sell mirrors at the Aachen festival. Meanwhile, Gutenberg began to develop the most crucial part of his invention.

It was called the hand-mould and this small hand-held apparatus became the crux of his amazing invention. Recalling his childhood when he would watch the punch cutters at the mint, he had already decided he needed punches engraved with the shapes of letters. These had to be carved out of hard steel to maintain sharp details when punched or pressed onto a surface. But the trouble was getting those punches small enough and lined up to make easily readable words. A typical page needed some 3500 characters and that was a lot of engraving to do! What he needed was a way to make multiple pieces of type from one set of punches. The hand-mould solved his dilemma.

Gutenberg found that a letter, such as "t" could be carved out of the end of a bar of steel. That "t" would then be placed on a softer metal, such as copper or brass, and "punched" or struck with a hammer to make an impression. This impression, called a matrix, would next be placed into the bottom of an adjustable hand-mould. If the letter was narrow, like "i" or "l", then the sides of the mould would be brought closer together. If the letter was wide, like an "m" or a "w", the sides would be pushed further apart. Finally, a mixture of melted lead, tin

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The process from punch to type



and antimony would be poured into the mould. It would cool immediately, be released from the mould and a piece of type was cast. Many pieces of type would be made from this same impression, or matrix, because a printer would need 131 “t’s” just to typeset these two pages alone.

The other all important aspect to Gutenberg’s invention of printing was the press. These small newly created pieces of type needed to be arranged into a form and pressed onto a page. After many trials and errors, he had succeeded in constructing a printing press that would evenly press the letters onto a page.

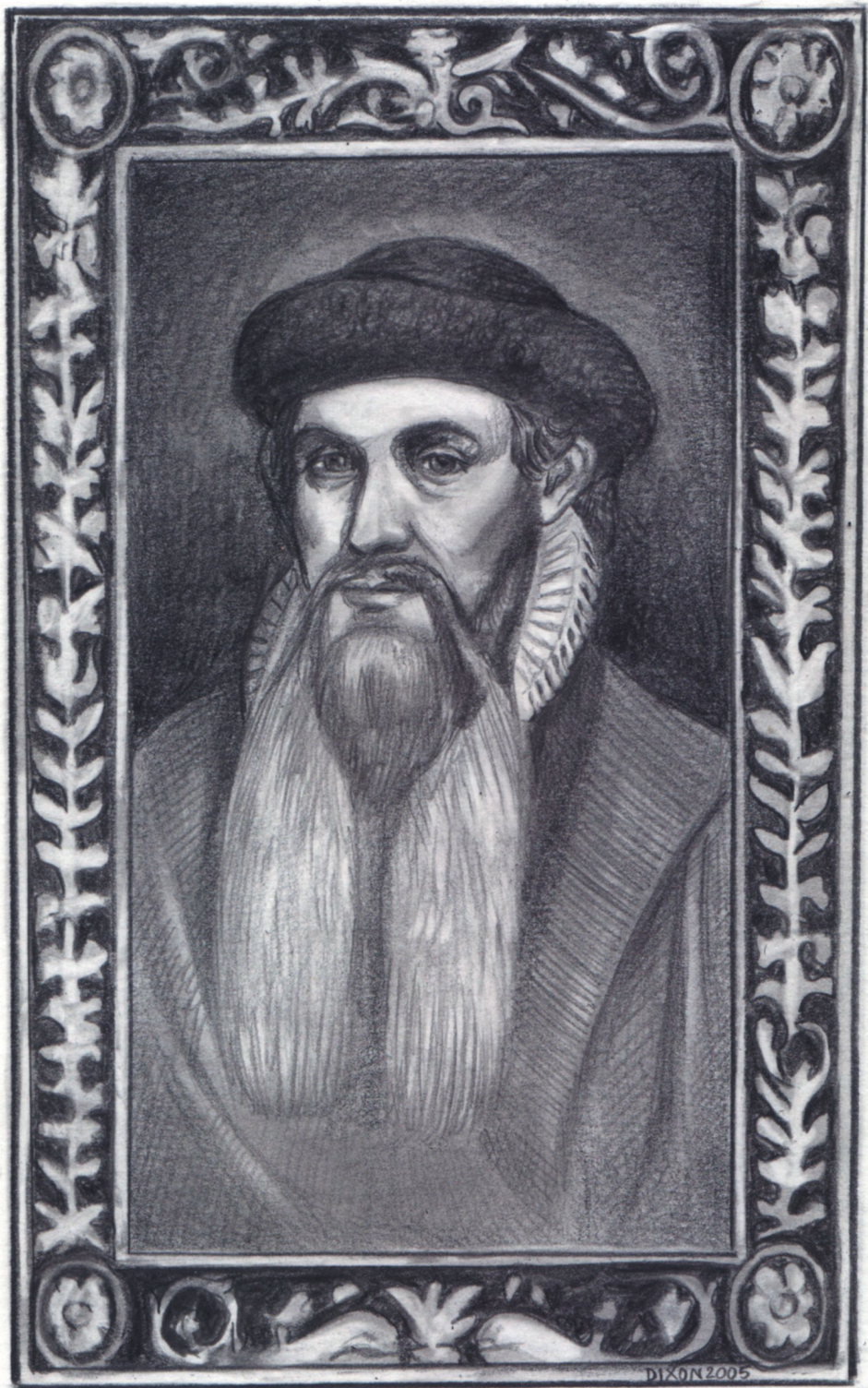
His ink mixture was finally the right consistency and he was ready at last to print a real page from a book for a test run. He chose a page from a popular work entitled, *The Last Judgment*.

After hours of work in setting up the page and years of sweat and hard work bringing him to this point in time, Johann Gutenberg printed his first page. It worked! It could use some improvements, but it worked!

Johann was energized to get underway on printing something, anything, when he heard a commotion outside. Gutenberg had been so consumed with his invention of printing that he had been unaware of the political unrest in Strasburg. The city officials were calling all men into service to protect Strasburg from an attack by a marauding band of soldiers roaming the countryside.

Johann may have felt vulnerable in that he lived outside the city gates or he may have not felt strongly enough for a city that he did not consider home. In any case, he once again packed up – this time with as much type and equipment as he could possibly carry – and he moved back to the golden city of Mainz on the Rhine.

It didn't take him long to get back to work and set up shop. While doing so, a banker named John Fust became intrigued by all of the curious activities at the Gutenberghof. Gutenberg let him in on his secret and Fust became so enthused that he offered to loan him 800 gulden to set up a large printing shop at the Humbreckhof just down the street. Excited by the prospect of a larger shop, more equipment and a staff to train in



the fine art of printing, Johann jumped at the offer and agreed to pay him back in full with interest. He even agreed to give him all of the printing equipment if he should fail to repay the loan.

Six printing presses were built and installed at the Humberckhof, a staff of 20 plus workers were hired and trained, and a new, smaller typeface was designed and engraved. The brand new printing works at the Humberckhof was now ready for its first major job. Gutenberg and Fust decided that they should start by printing the best selling book of all time – the Bible.

Before long, work was under way. The beautiful new Bible was set up in two columns and 42 lines. Each page required about 2800 pieces of type. The Bible upon completion would have nearly 1200 pages and its first edition would consist of 200 printed copies. They knew they would have many long months of hard work ahead of them. The task was enormous, but under the direction and vision of Johann Gutenberg, the Bible began to take shape and the printers were becoming experts in their new art.

Johann took on a special apprentice by the name of Peter Schöffer. To Schöffer, Gutenberg imparted not only his expertise skill in developing fine print, but also his standards for perfection. He passed on to him his vision for the printed book to not only be cheaper and faster than its hand-copied counterpart but for print to become even more eye-catching than script. Hand scripted books in that day had beautiful large lettering at the beginning of each paragraph called illumination, each one in itself a work of art. Manuscripts were also of more than one color – often three. Gorgeous borders and pictures

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were frequently drawn down the sides. Gutenberg wanted his Bible to match or surpass in loveliness the handwritten works of art that currently resided on medieval book shelves.

Schöffer soon became a master printer. Together, he and Gutenberg created what most people consider the finest book ever printed. Today it is known as the 42-line Gutenberg Bible. When the work was nearly completed, John Fust became impatient with the entire process and demanded that Gutenberg immediately repay his loan in full. Gutenberg was unable to do so because all of his money was tied up in the printing of the Bible. He asked Fust for a few months time to bind the books and get them ready for sale. But Fust refused and hauled him into court.

Historians wonder if John Fust was simply impatient, or if perhaps he was truly mean spirited and money hungry. For he did indeed win the law suit and Gutenberg had to turn over all of the equipment and unfinished Bibles to Fust. Fust promoted Schöffer to master of the Humbreck Printing Works and they completed the Bible without Gutenberg. Every copy was sold and with the proceeds they were able to begin setting up for the next printed book – a church hymnal.

Gutenberg was devastated. His life work was practically stolen from him by his trusted financial partner. He was in his mid-fifties by this time and he nearly did not have the heart to start over again. But Johann Gutenberg was not a man to give up easily.

Johann once again set up shop at the Gutenberghof and

in those tiny quarters with his single printing press, he began to print books once again. In his later years he produced many documents and books, even collaborated on another edition of the Bible.

Just when his life was becoming rather routine and predictable, an alarming event occurred. Enemy troops stormed the city of Mainz, overthrew the government and exiled many of the inhabitants. The city folks were corralled in the town square and herded out through the city gates with only what they could carry on their backs.

Dazed and overwhelmed, Johann Gutenberg headed for the country estate in Eltville. Relatives were living in the house, but they cheerfully provided him with a room. Under his guidance and direction, a print shop was opened in Eltville. In fact, printing houses were springing up all over Europe, like a ripple in a pond, as the original printers whom Gutenberg trained were exiled from Mainz and spreading out across the countryside. A printing revolution had been born. Within 40 years, there would be over 500 print shops in operation in Europe and more than one million books printed. Gutenberg had indeed changed the world of book making. He has been credited with one of the most revolutionary inventions of all time.

And so what happened to Johann Gutenberg? After his exile from his hometown, the archbishop heard of his plight and wanted to restore him to favor for his remarkable invention. He bestowed on him the honor of knighthood and provided him with a home in Mainz not far from the Gutenberghof after the city had been restored to peace. Gutenberg traveled back and

forth between Eltville and Mainz overseeing the printing works which operated in those cities, but he never again ran the shops himself. He was getting older in years and needed to slow down. One day, while at his house in Mainz, Gutenberg walked past the newly reopened print shop at Humbreckhof and spoke with Peter Schöffer. He learned from him that John Fust had died of the plague during his travels in Italy. Gutenberg grieved over this news because he knew that if it weren't for Fust the Gutenberg Bible never would have come into being. He continued to walk and found himself at the docks. Large ships and towering cranes dominated the landscape. So much had changed since he was a boy. He saw a book seller loading a crate of printed books onto the dock for shipment to Frankfurt. As he passed by, several people nodded to Gutenberg and tipped their hats to him. He was now an honored citizen and a knighted lord. For a brief moment, time seemed to stand still. The bright autumn sunshine glinted off the Rhine River and a sense of peace and accomplishment washed over him. He thanked the Lord for his long and full life as he turned for home.

Epilogue

Johann Gutenberg died at the age of 68. A clerk at the town hall recorded these words in the city records book, "In the year of our Lord 1468 on St. Blasius' Day died the honored master [Johann Gutenberg] on whom God have mercy." As he was honored then, so we honor him today – for this man changed the world as we know it today. His determination to

print the first book has given mankind the gift of easily sharing knowledge and information with one another. Printed books have brought delight to their readers every day for over 500 years. His gift will not quickly be forgotten.

About the Author:

Terri Johnson is the creator of Knowledge Quest maps and timelines (www.knowledgequestmaps.com). Her mission for the company is to help make the teaching and learning of history and geography enjoyable for both teacher and students. She has created and published over 15 map and timeline products. Her *Blackline Maps of World History* have been widely recommended in the education community and published in *The Story of the World* history series by Susan Wise Bauer. Terri and Knowledge Quest recently won the “Excellence in Education” award granted by The Old Schoolhouse magazine for best geography company of 2003 and 2004. Terri resides in Gresham, Oregon with her husband Todd and their four children whom she teaches at home. She is expecting baby number five any day now...

