Name: _____

Chinese Inventions - Paper & Movable Type Printing

Invention is an interesting thing. Sometimes, an invention was developed to fulfill a specific need. Other times, it was simply a chance discovery. Looking back in history, there are two Chinese inventions that fell into the first category. They are paper and movable type printing.

Long before paper was invented, the ancient Chinese carved characters to record their thoughts on tortoise shells, animal bones, and stones. Since those "writing boards" were heavy and not easy to carry around, they switched to writing on bamboo, wooden strips, and silk. The new alternatives were clearly better, but they were either still heavy or very costly. Then, during the Western Han dynasty (202 B.C. - 8 A.D.), paper made its debut. Its inventor is unknown.

When paper first came out, it was not easy to produce in large quantities. And its quality was poor. Several decades later, a palace official named Tsai Lun (also spelled as Cai Lun) had a breakthrough in the papermaking process. He experimented with different materials and eventually settled on using tree bark, rags, and bits of rope to produce paper. He presented his first batch of paper to the emperor of the Eastern Han dynasty in 105 A.D. Tsai Lun's technique of making paper became an instant hit! It was quickly introduced to Korea and other countries nearby. In 751 A.D., Arabs learned the technique from the Chinese soldiers they captured in a war. They passed it on to Europe and, eventually, other parts of the world.

With the invention of paper, the ancient Chinese began to have books. But to have a book, they needed to manually copy the text onto sheets of paper word by word. The entire process was time-consuming and prone to errors. To solve the problems, they first wrote the text on a piece of paper and glued it facedown onto a wooden board. Then they carved out the characters or even pictures, and made the board a printing plate. Each plate was a page of a book. Once they were done with all the pages, they brushed ink evenly on a printing plate and carefully laid a piece of paper on top of it. They lifted up the paper and let it dry. They repeated this step until they finished printing the entire book. This printing method was called block printing. It first appeared in China during the Sui dynasty (581 A.D. - 618 A.D.) Its inventor is unknown.

Without a doubt, the block printing technique helped the publishing industry thrive. But it had its drawbacks. First, it took time to carve out the entire text of a book. Second, it was impossible to correct a mistake without throwing away the whole plate and starting it all over again. Third, it was difficult to store printing plates, given that their wooden material was termites' favorite food. Seeing all these problems about block printing, a smart man named Bi Sheng (also spelled as Pi Sheng) of the Northern Song dynasty (960 A.D. - 1127 A.D.) came up with an idea in the 1040's. Instead of carving the entire book onto wooden plates, he carved one Chinese character at a time onto a small block of clay. After he made enough blocks bearing different Chinese characters, he burned them and turned them into durable ceramics. He assembled the characters on an iron plate with a kind of detachable glue. After he

finished printing that page, he broke up the characters and re-assembled them to form the content of another page. The new approach was called movable type printing.

The printing techniques, both block printing and movable type printing, were first introduced to Korea, Japan, and other countries around China. Later on, they were brought to Central Asia, Persia, and Egypt. In 1455, a German named Johannes Gutenberg published the first book in Europe using movable type printing. The book he published was a Latin Bible. Because the Bible he made had forty-two lines in two columns on each page, it was also called the "Forty-Two-Line Bible."

Though Johannes Gutenberg might not have learned about the Chinese invention when he came up with movable type printing, it was evident that his creation was more than 400 years behind Bi Sheng's. So, to be fair, the true inventor of the movable type printing technique is really Bi Sheng, not Johannes Gutenberg.

Paper and the movable type printing technique are two crucial Chinese inventions. They represented two significant milestones in the development of civilization. Together, they rocked the world -- literally!

Chinese Inventions - Paper & Movable Type Printing

Questions

_____ 1. Who invented paper?

A. Nobody knows.
B. Tsai Lun
C. Bi Sheng
D. Johannes Gutenberg

_____ 2. Tsai Lun did not invent paper. He simply improved the way of making paper.

A. True
B. False

_____ 3. When was paper invented?

A. During the Eastern Han dynasty
B. During the Sui dynasty
C. During the Western Han dynasty
D. During the Western Zhou dynasty

_____ 4. Which of the following was **NOT** a material the ancient Chinese used to write on before paper was invented?

A. Candle stick
B. Tortoise shell
C. Stone
D. Silk

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_____ 5. Who invented movable type printing?

A. Nobody knows
B. Johannes Gutenberg
C. Bi Sheng
D. Tsai Lun

_____ 6. The block printing technique used a more durable material than the movable type printing technique.

A. False
B. True

_____ 7. What year did Johannes Gutenberg publish the first book in Europe using movable type printing?

A. 1455
B. 1454
C. 1546
D. 1544

_____ 8. When was the movable type printing technique invented?

A. During the Western Han dynasty
B. During the Southern Song dynasty
C. During the Northern Song dynasty
D. During the Tang dynasty

_____ 9. Who introduced the technique of making paper to Europe?

A. Indians
B. Mongols
C. Japanese
D. Arabs

_____ 10. What was Johannes Gutenberg's first publication also called?

A. The Forty-Three-Line Bible
B. The Forty-Five-Line Bible
C. The Forty-Two-Line Bible
D. The Forty-Four-Line Bible

Name: _____

In your opinion, what is the most important invention ever made? Describe what the invention is, and explain why you chose it.

Don't stop writing. Use a blank piece of paper to continue.