

An Empire Built on Paper

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Until the 8th century, paper was only produced in China and other parts of Eastern Asia. Scholars in Europe, the Middle East, and Africa had to make do with papyrus, a brittle material made only in Egypt, or parchment, a very fine sheet made from the skin of animals. Writing on papyrus and parchment was difficult. The pages were thick, fragile and expensive.

In China, however, scholars had long before discovered something far more useful: thin sheets prepared from compressed, dried-out wood pulp-also known as paper. In the 700s, during the period of Islamic dominance known as the "Islamic Golden Age," Muslim armies stormed east from Arabia and came into contact with the Chinese empire. In the Battle of Talas, in 751 A.D., armies of the Arab Abbasid Caliphate defeated the forces of the Chinese Tang Dynasty, bringing Islam to the edge of China itself.

Legend has it that two Chinese papermakers were captured during the battle and brought to Samarkand, where they were ordered to establish a paper manufacturing center in the heart of the Muslim empire. Whether or not this was wholly true, it is probable that Muslim warriors encountered

papermaking during their battles with China. Seeing its usefulness immediately, they returned home with the technology to share with their scribes.

The Muslim empire was a culture that placed great importance on words. The Muslims' holy book, the Qur'an, was a great poetic work, and devout Muslims were expected to memorize parts of it to be recited during religious ceremonies. One of their most famous art forms was calligraphy, a style of decorative writing, and their great mosques were decorated not with images of people, but the words of the Qur'an itself.

It is no surprise that a society which so valued words would fall in love with paper. Compared to parchment and papyrus, even rudimentary paper-much rougher and thicker than the pages of a book today-was a great improvement. Unlike parchment, which could only be made from the skins of animals, paper could be manufactured relatively cheaply and easily. Unlike papyrus, paper did not crack when it was bent. It was also thinner, which made the binding of books much simpler than it had been before.

Perhaps most importantly, paper absorbed ink, which meant that anything written on paper could not be erased. That's not very useful when you're trying to solve a math problem, but when writing official government documents, permanence is crucial.

Just as it had been in China, paper was originally used mainly by the Arab government. At a time when Europe was broken into a number of disorganized kingdoms, the Abbasid Caliphate, which stretched from Afghanistan to North Africa, might have been the greatest power on Earth. This sprawling empire contained dozens of great cities, millions of people, and several different, often conflicting, cultures. Although the empire's official language was Arabic, its people spoke many different languages-from Persian in the East to Berber in the West. Now those disparate regions could be united by the written word.

Paper's use spread quickly. By the end of the 8th century, a paper mill had been set up in Baghdad. Over the next 200 years, the technology spread to Syria, North Africa, and even Spain-which was partially ruled by Muslims from 711 to 1492. Although the Abbasid Caliphate and other ruling houses of the Arab empire were skilled in war, they prized learning above all else. The Abbasids took inspiration from a well-known saying, "The ink of a scholar is holier than the blood of a martyr."

To this end, the Abbasids did everything they could to encourage scientific achievement. As Europe languished in the Dark Ages, when even literacy was limited mainly to monks, the Muslim world entered a scientific golden age. Building on the knowledge of the ancient Greeks, Muslim scholars made great advances in geometry, astronomy, and mathematics.

As paper became more widespread, so did knowledge. The tedious process of writing books by hand was made easier by an adoption of assembly-line-style techniques, which allowed a group of scribes to produce finished books faster than ever before. Great libraries were established across the Muslim world, and in capitals like Baghdad and Cairo, booksellers flourished. Scholars and poets were supported by the government, and for perhaps the first time in history, it became possible to make a living by reading and writing alone.

Even as paper became widespread, there was one place where its dominance was resisted: religion. Because paper was less expensive than parchment, it was initially considered unfit to bear the holy words of the Qur'an. However, the demand for copies of the Qur'an grew along with the population's

literacy. Eventually, that demand, along with the improved quality of the paper, made the new material considered suitable for religious use. The oldest known Qur'an written on paper dates from 971-972.

The western spread of paper didn't end in the Arab empire. From there, the technology to manufacture paper made its way through Europe. It was not until the middle of the 15th century that a German blacksmith named Johannes Gutenberg invented a printing press that allowed for mass production of the Christian Bible. Most of Gutenberg's Bibles were printed on paper, becoming one of the most famous early works on paper in history.

Name: _____ Date: _____

1. Before the 8th century, paper was only produced in which places?
 - A. the Middle East, Europe, and Asia
 - B. China and other parts of Eastern Asia
 - C. China, Europe, and Africa
 - D. Europe, Africa, and Asia

2. The passage sequences the spread of paper to different parts of the world. What did scholars in Europe, the Middle East, and Africa do before the 8th century?
 - A. Scholars did not bother writing things down.
 - B. Scholars tried to steal paper from China.
 - C. Scholars tried to establish a paper manufacturing center.
 - D. Scholars wrote on parchment and papyrus.

3. In the passage, the author explains that papyrus was brittle and parchment was very fine. Based on this evidence, what conclusion can be made?
 - A. Papyrus and parchment were difficult to write on.
 - B. There were many benefits to writing on papyrus and parchment.
 - C. Papyrus and parchment were more popular than paper.
 - D. People didn't want to have to stop using papyrus and parchment.

4. Based on the passage, how did the Muslims perceive paper when they first learned about it?
 - A. They were happy to spread it to Muslim countries but wanted to keep it away from non-Muslim countries.
 - B. They were upset that it might disrupt the order of writing and keeping records.
 - C. They were skeptical about its usefulness and they were not willing to spread it.
 - D. They were excited to access paper because they recognized its usefulness.

5. What is this passage mainly about?

- A. the spread of paper
- B. the holy book the Qur'an
- C. the Islamic Golden Age
- D. the process of writing books

6. Read the following sentence: "Legend has it that two Chinese papermakers were captured during the battle, and brought to Samarkand, where they were ordered to establish a paper manufacturing center in the heart of the Muslim empire. Whether or not this was wholly true, it is probable that Muslim warriors **encountered** papermaking during their battles with China. Seeing its usefulness immediately, they returned home with the technology, to share with their scribes."

As used in the passage, what does "**encountered**" most nearly mean?

- A. battled
- B. destroyed
- C. ran away from
- D. came across

7. Choose the answer below that best completes the sentence.

Just as it had been in China, paper was originally used by the government in the Muslim empire. _____, its use quickly spread, and many other people started using it.

- A. Instead
- B. However
- C. Moreover
- D. Namely

8. Muslim warriors played a critical role in the spread and increased use of paper. What evidence from the passage supports this conclusion?

9. Explain why more books could be produced after the invention of paper. Use evidence from the passage to support your answer.

10. How did the spread of paper impact the spread of knowledge? Use information from the passage to support your answer.
