FARMING

Rice became China’s most important crop during the Song Dynasty. With the change in capital further south to Hangzhou, a more humid climate made for a perfect environment in which to grow rice. To expand the growth of rice, Chinese farmers developed advanced irrigation systems. These systems included pumps and other water control devices. Rice yielded more food per acre than any other grain. With more food available, the population increased at a significant rate. While China grew, the land tenure system began to change. Under the Han Dynasty, land was owned by the government and divided evenly among farmers to work. The Tang Dynasty changed this to allow the wealthy to buy good farmland, leaving the poor to work as tenant farmers on the land. The lower classes of Chinese society suffered greatly from this, so even as there was more food available, much of the poor starved.

TRADE

The surplus of food that was produced did lead to an expansion of trade. These food products, like the rice mentioned above, could be traded for craft items like pottery and cloth. Another factor in the expansion of trade was the completion of the Grand Canal that connected the Huang He and Yangtze Rivers. The completion of large waterway projects like this dropped the cost of transportation and allowed for better transportation to trade goods. This all came at a cost of much money and resources from the government and the Chinese people. A third factor was the use of a money economy. This was a system in which people used currency instead of bartering to buy and sell goods. The Tang used copper coins, but these proved to be heavy and hard to manage. The Song, however, were the first to use a paper currency on a large scale (the Tang had invented it but the government did not institutionalize it until the Song). This was simple to carry and exchange; making trade, especially over long distances, very easy. Another invention, developed during the Song Dynasty, which also aided trade, was the abacus. This instrument made addition, subtraction, multiplication, and division remarkably fast. It became the basic calculating device in Asia and allowed merchants, government officials, and others to quickly do more complex mathematical problems.
**Industry**

With the increase in trade, industries also grew. Industries like silk production and ceramics grew during the Tang and Song dynasties. During the Tang, Chinese artists learned of a mineral, feldspar, which could be added to white clay to make porcelain. The artisans of the Song Dynasty took porcelain to new heights. Chinese porcelain became a major trade item that was prized around the world. This was due to the fact that it took Europeans 1400 years to develop the art and could not make it on their own for centuries. The creation of other inventions, like the spinning wheel, allowed for more production of silk (China’s greatest export), which in turn led to more trade (because there was more cloth to be purchased) and the spinning wheel being brought to Europe.

The scale of production of iron and coal in China during the Tang and Song dynasties was vastly greater than anywhere else in the world until the 1800s. The Chinese had discovered the use of coal (what they called ‘black earth’) as fuel in 400 BCE and had been mass-producing cast iron goods since 200 CE. Later, by taking carbon out of cast iron, the Chinese were able to manufacture steel. By the seventh century, much of the iron and steel produced in China went to equip the Song army. Iron was also forged to make tools for farmers and carpenters. Iron was also being used in the creation of items ranging from nails and needles to ships and bridges.

**Infrastructure**

Along with the great waterways built in China, the road system built during the Tang and Song dynasties helped improve communication and trade throughout the vast land. While roads were improved, it was the construction of relay hostels that gave scholar-officials a place to stay while traveling that allowed for a more efficient running of the government. Inspectors, tax collectors, and messengers were able to move more easily throughout China. These new roads and hostels also gave merchants another way to move product to the marketplace.

China did not forget about their borders as they improved on their infrastructure. During the Tang and Song dynasties (and for two more dynasties after) the Great Wall of China was rebuilt and improved. The cost to rebuild the wall was enormous and took the work of hundreds of thousands of Chinese workers who were forced by the government to work. Many of these workers died from the harsh working conditions and buried in the wall itself. It is the most extensive man-made structure built in the world, and the only work of architecture on earth visible to the naked eye from space.
The Chinese led the world in shipbuilding technologies at the time of the Tang and Song dynasties. They had mastered such ideas as watertight compartments, rudders for steering, and triangular shaped sails that allowed boats to sail into the wind. The magnetic compass allowed Chinese sailors to chart their course at sea. These inventions allowed Zheng He, a Chinese ambassador, to take seven trips to the Middle East and East Africa. Later, it opened the seas to trade as Chinese merchants sailed their goods to far off places much more quickly than the Silk Road. Still, it would take 1300 years for Europe to adopt much of these ideas.

In the third century, Chinese alchemists (scientists who study chemicals) discovered the compound to make gunpowder. At first, gunpowder was used in fireworks, but by the Song era, gunpowder was being used to make bombs, rockets, and other weapons. Chinese military manuals discussed gunpowder’s ingredients, military uses, and warnings about accidents due to misuse of weapons. Gunpowder passed through Muslim hands on its way to Europe. It was the Turks’ secret weapon in their conquest of Constantinople. Europeans were quick to put gunpowder to use in warfare, as well. The Chinese also made the first metal gun barrel, that was later copied by the Arabs and Europe.

China invented paper at least 2,000 years ago. They also had been using a time consuming process known as the eighth century to create woodblock printing (which they also invented) since printed works. Around the year 1045, a commoner named Bi Sheng, created a moveable type method for printing. This allowed blocks with different Chinese characters to be moved around, which allowed for faster printing. This made it easier to produce books, making books available to more people. As a result, literacy increased throughout China. 400 years later, Europe would develop this same technology.
**MEDICINE**

The first breakthrough in inoculation (introducing a weak form of a disease to treat or prevent a disease) against the smallpox disease was made in China. Smallpox—a deadly virus characterized by skin blisters drying to scab-coated pustules and leaving crater like scars—existed in Europe, Asia, and Africa from the tenth century onward. The technique of inoculation was first publicly recognized when the eldest son of Prime Minister Wang Dan (957-1017) died of smallpox. Hoping to prevent the same thing from happening to other family members, Wang Dan summoned physicians and other specialists from all over China. A Taoist monk brought the technique of inoculation to Wang Dan and introduced it to Chinese physicians in the capital. They continued to experiment with inoculation, and by the sixteenth century it was widely practiced against smallpox in China.

Inoculations were first done by inhaling smallpox scabs.

**ARTS AND CULTURE**

Vietnam, Korea, and Japan adopted many elements of Chinese culture. All three borrowed the Chinese writing system. In time, they adapted it to their own needs. They imported Chinese styles of painting, music, and architecture. Both Korea and Japan built capital cities modeled on the Tang capital at Chang’an.

Chinese culinary arts (skills involved in cooking/preparing food) also spread throughout East Asia. Many countries adopted chopsticks as tools for cooking and eating. They also borrowed the Chinese wok, a large round-bottomed pan, used for frying and steaming foods. These countries also adopted the custom of drinking tea.

**THOUGHT AND POLITICS**

Both Confucianism and Buddhism spread from China to other parts of East Asia. Confucianism spread to neighboring countries as early as 100 BCE. Over time, Vietnam, Korea, and Japan all formed governments based on Confucian ideas. Scholar-officials ran their bureaucracies. The influence of Confucian ideas was especially strong in Korea.

Buddhism also spread from China throughout East Asia. Buddhism arrived in Korea in the 300s CE. From there, it moved to Japan.

Chinese beliefs and customs had less impact on more distant lands. For these distant places, it would Chinese innovations that hap a lasting impact on their societies.