The Tang and Song dynasties were eras of major technological advancement in China. The technologies improved China as a country and, in turn, helped people conduct their daily business.

Much of China’s technology spread to other parts of the world where it improved the lives of the people living there. The table on this page identifies some of that movement.

**Porcelain**

Marco Polo was the first to describe the pottery found in China as porcelain. The plain piece shown here is an early example of porcelain work from the Song Dynasty. A piece like this might be used daily. Later porcelain work, such as the distinctive blue and white porcelain of the Ming Dynasty, became more decorative. Porcelain, however, was a luxury reserved for the middle and upper classes of Chinese society.

### Inventions of Tang and Song China

<table>
<thead>
<tr>
<th>Invention</th>
<th>Description</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porcelain</td>
<td>Bone-hard, white ceramic made of a special clay and a mineral found only in China</td>
<td>Became a valuable export—so associated with Chinese culture that it is now called china; technology remained a Chinese secret for centuries</td>
</tr>
<tr>
<td>Mechanical clock</td>
<td>Clock in which machinery (driven by running water) regulated the movements</td>
<td>Early Chinese clocks short-lived; idea for mechanical clock carried by traders to medieval Europe</td>
</tr>
<tr>
<td>Printing</td>
<td>Block printing: one block on which a whole page is cut; movable type: individual characters arranged in frames, used over and over</td>
<td>Printing technology spread to Korea and Japan; movable type also developed later in Europe</td>
</tr>
<tr>
<td>Explosive powder</td>
<td>Made from mixture of saltpeter, sulfur, and charcoal</td>
<td>First used for fireworks, then weapons; technology spread west within 300 years</td>
</tr>
<tr>
<td>Paper money</td>
<td>Paper currency issued by Song government to replace cumbersome strings of metal cash used by merchants</td>
<td>Contributed to development of large-scale commercial economy in China</td>
</tr>
<tr>
<td>Magnetic compass (for navigation)</td>
<td>Floating magnetized needle that always points north-south; device had existed in China for centuries before it was adapted by sailors for use at sea</td>
<td>Helped China become a sea power; technology quickly spread west</td>
</tr>
</tbody>
</table>

**SKILLBUILDER: Interpreting Charts**

1. **Making Inferences** Which inventions eventually affected warfare and exploration?
2. **Forming and Supporting Opinions** Which of these inventions do you think had the greatest impact on history? Why?
1. Forming and Supporting Opinions
Of all the inventions listed on these pages, which do you think had the most lasting impact? Why?


2. Hypothesizing
What are some modern inventions that you believe will still have an impact 1,000 years from now?

**Explosive Powder**

Around A.D. 900, Chinese alchemists first discovered that the right mixture of saltpeter, sulfur, and charcoal could be explosive. The Chinese initially used the powder for fireworks, then for military applications. It is now commonly referred to as gunpowder.

The device shown here is a modern reproduction of an ancient rocket launcher. The Chinese tied gunpowder charges to arrows, balanced them, and placed them in a holder. The holder helped aim the rockets, and its flared shape spread the rockets over a large area.

**Movable Type**

Traditionally, an entire page of characters was carved into a block of wood from which prints were made. Pi Sheng, a Chinese alchemist, came up with the idea of creating individual characters that could be reused whenever needed. Later, a government official created rotating storage trays for the characters.

As you have read, Tang rulers restored China’s system of scholar-officials. Thus, education and printed materials became important to a larger part of Chinese society.

The trays allowed the typesetter to quickly find the characters. The typesetter would then order the characters in a tray that would be used to produce the printed pages. The two wheels held about 60,000 characters.

**Porcelain**

- The United States imported 423,041 one-piece toilet bowls and tanks in 2002. Of those, 302,489 came from China.
- In 2001, a Chinese newspaper reported the production of possibly the world’s largest porcelain kettle—just under 10 feet tall, about 6 feet in diameter, and weighing 1.5 tons.

**Explosive Powder**

- In 2002, the United States imported over 90 percent of its fireworks from China.
- The largest single firework was used at a Japanese festival in 1988. It weighed over 1,000 pounds, and its burst was over half a mile wide.

**Printing**

- The Library of Congress, the largest library in the world, has over 18 million books.
- The world’s best-selling book is the Bible. Since 1815, around 2.5 billion copies of the Bible have been sold.

**Porcelain**

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