

## Ancient Chinese Chariots

Excavation of ancient Chinese chariots has confirmed the descriptions of them in the earliest texts. Wheels were constructed from a variety of woods: elm provided the hub, rose-wood the spokes and oak the felloes. The hub was drilled through to form an empty space into which the tapering axle was fitted, the whole being covered with leather to retain lubricating oil. Though the number of spokes varied, a wheel by the fourth century BC usually had eighteen to thirty-two of them. Records show how elaborate was the testing of each completed wheel: flotation and weighing were regarded as the best measures of balance, but even the empty spaces in the assembly were checked with millet grains. One outstanding constructional asset of the ancient Chinese wheel was dishing. Dishing refers to the dish-like shape of an advanced wooden wheel, which looks rather like a flat cone. On occasion they chose to strengthen a dished wheel with a pair of struts running from rim to rim on each of the hub. As these extra supports were inserted separately into the felloes, they would have added even greater strength to the wheel. Leather wrapped up the edge of the wheel aimed to retain bronze.

Within a millennium, however, Chinese chariot-makers had developed a vehicle with shafts, the precursor of the true carriage or cart. This design did not make its appearance in Europe until the end of the Roman Empire. Because the shafts curved upwards, and the harness pressed against a horse's shoulders, not his neck, the shaft chariot was incredibly efficient. The halberd was also part of chariot standard weaponry. This halberd usually measured well over 3 metres in length, which meant that a chariot warrior wielding it sideways could strike down the charioteer in a passing chariot. The speed of chariot which was tested on the sand was quite fast. At speed these passes were very dangerous for the crews of both chariots.

## Questions 1-6

Complete the notes below.

Choose **ONE WORD** from the passage for each answer.

Write your answers in boxes **1-6** on your answer sheet.

1. The hub is made of wood from the tree of .....
2. The room through the hub was to put tempering axle in which is wrapped up by leather aiming to retain .....
3. The number of spokes varied from 18 to .....
4. The shape of wheel resembles a .....
5. Two .....was used to strengthen the wheel
6. Leather wrapped up the edge of the wheel aimed to remain .....