Tools That Traveled

How three innovations changed travel, warfare, and trade

AWH.C.12.6.B "Describe the impact of innovations, such as the compass, gunpowder, and Wootz steel."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline one impact of each innovation, then number the impacts 1 for the compass, 2 for gunpowder, and 3 for Wootz steel. Marking the effects will help you compare what each innovation changed.

A Course, a Cannon, a Blade

(1) Picture a sailor crossing the Indian Ocean on an overcast night. Stars are hidden, and the coast is out of sight. A magnetic compass offers a direction by pointing toward magnetic north, even when the sky is cloudy. Developed in China and used by Chinese mariners by the Song dynasty, the compass later spread across Eurasian sea routes. It did not tell sailors their exact location or erase the dangers of storms. Still, it helped them hold a course when familiar landmarks disappeared. More dependable navigation supported longer voyages and wider exchanges of goods and ideas.

(2) On land, a different Chinese innovation changed the risks of conflict. Gunpowder began as a mixture of saltpeter, sulfur, and charcoal; Chinese forces used it in weapons such as fire lances and bombs. Knowledge of gunpowder spread across Eurasia, and armies developed cannons and handheld firearms. These weapons could strike from a distance and, as cannons improved, batter walls that had resisted older siege weapons. Rulers who could afford guns, powder, and trained crews gained new military options. Yet change was gradual: early guns were slow to reload, and armies still relied on other weapons and tactics.

(3) In southern India, metalworkers made Wootz steel by heating iron with carbon in sealed crucibles. This process produced high-carbon steel that could be forged into valued blades. Wootz ingots traveled through trade networks to West Asia, where some smiths shaped them into swords associated with Damascus steel. A well-made blade could hold an edge, making it useful in combat and desirable to buyers. Unlike gunpowder, Wootz did not transform armies through a new kind of attack. Its impact also lay in skilled production and long-distance trade, which connected makers, merchants, and weapon users across regions.

2 ANSWER WITH EVIDENCE

Use the passage

1. How did the compass help sailors travel farther when they could not see familiar landmarks?

2. How did improved cannons change an army's options during a siege?

3. How did Wootz steel affect both the use of weapons and trade between regions?

4. How did the compass and gunpowder change different kinds of activity across Eurasia?

3 YOUR TURN

Your own words

Imagine you advise a port city that trades with distant regions and faces attacks. In one paragraph of 5 to 6 sentences, recommend which two of the three innovations its leaders should invest in first, explain a distinct likely impact of each using passage evidence, and identify one limitation or trade-off.

ANSWER KEY

Tools That Traveled

HIGH SCHOOL · AWH.C.12.6.B

PART 1 · READ AND MARK

Underline one impact of each innovation, then number the impacts 1 for the compass, 2 for gunpowder, and 3 for Wootz steel. Marking the effects will help you compare what each innovation changed. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How did the compass help sailors travel farther when they could not see familiar landmarks?	**It helped sailors hold a course when clouds hid the stars or the coast was out of sight, supporting longer voyages.**
2	How did improved cannons change an army's options during a siege?	**They could batter walls that had resisted older siege weapons, giving armies another way to attack fortified places.**
3	How did Wootz steel affect both the use of weapons and trade between regions?	**Smiths could forge it into blades that held an edge. Trade in Wootz ingots connected makers and merchants in southern India and West Asia.**
4	How did the compass and gunpowder change different kinds of activity across Eurasia?	**The compass made navigation more dependable and supported longer voyages and exchange. Gunpowder gave armies new weapons and ways to attack from a distance.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would invest first in compasses and Wootz steel for a port city that depends on trade. Compasses could help ships keep a course when clouds hide the stars, so merchants might complete more distant voyages. The city could also buy Wootz ingots and hire smiths to make blades for guards and for sale. Selling those blades could bring income and connect our port with other trading regions. Compasses cannot reveal a ship's exact position, so captains would still need other ways to navigate.

Accept any two innovations if the response gives a distinct, passage-supported impact for each and a plausible limitation or trade-off. The recommendation should apply those impacts to the port city's needs rather than only restating facts from the passage.