

How to Kill a Mammoth: The Arms Race

Wooden spear



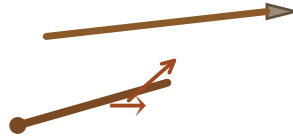
~400,000 years ago
(Homo heidelbergensis)
Fire-hardened point,
thrown or thrust

Hafted spear



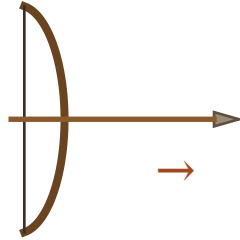
~300,000 years ago
(Neanderthals)
Stone point bound on
with birch-tar glue

Spear-thrower (atlatl)



~40,000-30,000 years ago
(Homo sapiens)
A lever that hurls a dart
far harder & faster

Bow & arrow



~64,000 years ago in Africa
(Homo sapiens)
Range, speed & stealth —
a true game-changer

Schematic; dates are approximate and debated.