

# FIGURING WITH FERMI

## THE FERMI APPROACH

The man often credited as the guru of back-of-envelope calculations was Enrico Fermi. Fermi was a physicist who was involved in the creation of the very first nuclear reactor. Most famously, he was present at the detonation of the first nuclear bomb, the so-called Trinity Test in New Mexico, USA, in July 1945. At the time, scientists still weren't sure how big the explosion would be. Some even feared it might be large enough to set off a chain reaction that would destroy the planet.

The story goes that Fermi and others were sheltering from the explosion in a bunker about six miles from ground zero. When the bomb went off, Fermi waited until the wind from the explosion reached the bunker. He stood up and released some confetti from his hand, and when it had landed, he paced out how far the confetti had travelled. He then used that information to make an estimate of the strength of the explosion. We don't know for certain how Fermi did this, but it probably involved him estimating the wind speed and working out how much energy was required to push out a 'hemisphere' of air from the centre of the explosion.