Being a Better Sport

From designing uniforms with less drag to adjusting the angle at which an athlete launches a javelin, mathematics helps improve sports performance. Differential equations and vector analysis play important roles in determining optimum mechanics in a sport, as does numerical analysis when equations can't be solved exactly. Many fields of mathematics are providing legitimate tools that allow athletes to use mind and body to go swifter and higher.

Mathematics also improves the viewing and coaching of sports. The first-down stripes and strike zones superimposed on your screens require geometry as well as algorithms to process position and perspective data for the field and cameras. In coaching, statistics and game theory are now used to analyze questions such as "How many days' rest are optimal for a pitcher?" and "When is it profitable to gamble on fourth down?" Said one coach, "In God we trust. All others must have data."

For More Information: *The Mathematics of Projectiles in Sport*, Neville de Mestre

Image courtesy of PRNewswire

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*The **Mathematical Moments** program promotes appreciation and understanding of the role mathematics plays in science, nature, technology, and human culture.*

www.ams.org/mathmoments