THE DEMONSTRATION CORNER

D-Ball

by

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This is a very popular game I have played with my OAC physics class. It incorporates the concepts of conservation of energy and projectile motion.

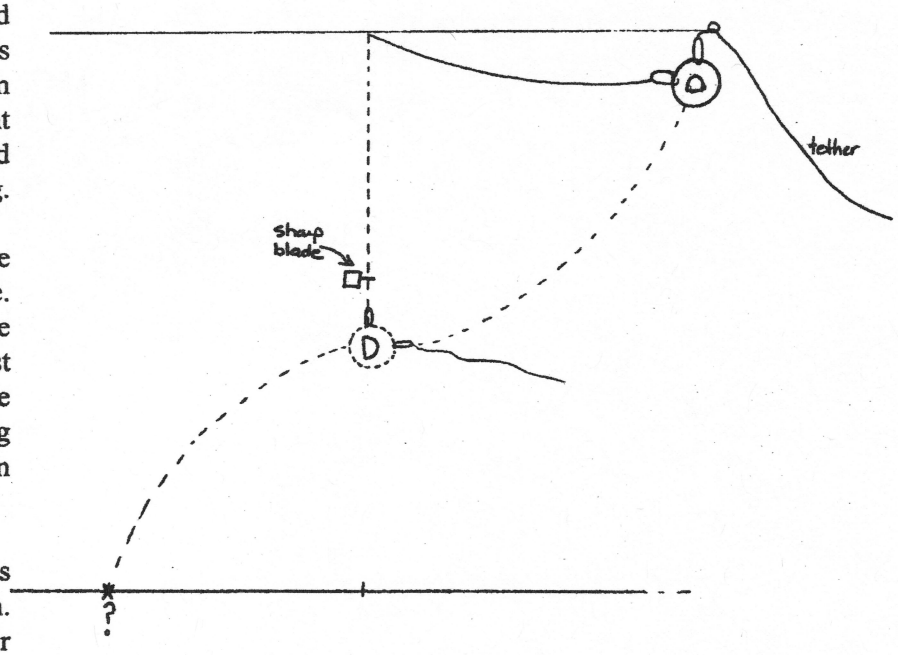
"D-Ball" is a baseball with a D marked on it. if your name doesntt start with the letter "D," you will have to make appropriate changes. D-Ball is hung from the ceiling on a piece of very thin fishing line or fine thread tied to a paper clip that is hooked through the threads on the ball. A razor blade is clamped at a position just barely above the ball as it hangs straight down. A second paper clip and thread are used to tether the ball to the side just below the ceiling.

To launch the ball, burn the thread tethering the ball allowing it to swing down, pendulum style. When the string meets the blade, it is cut and the ball becomes a projectile. The students must make appropriate measurements before the launch and calculate a prediction of the landing position of D-Ball. We mark the predictions on the floor and then launch D-Ball.

The horizontal distance travelled by the ball turns out to be within 2% of the theoretical prediction. Students reported that this was one of their favourite activities.

It is easy to make this demonstration into an exam question. I gave them a scale diagram of the set-up and they had to calculate and mark the landing position on it.

Thanks to Brian Wegley, Glenbrook South HS, Glenview, illinois, for sharing this idea.



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Santa, continued from page 1

re-entering the earth's atmosphere. The lead pair of reindeer will absorb 14.3 QUINTILLION joules of energy. Per second. Each.

In short, they will burst into flame almost instantaneously, exposing the reindeer behind them, and create deafening sonic booms in their wake. The entire reindeer team will be vaporized within 4.26 thousandths of a second. Santa, meanwhile, will be subjected to centrifugal forces 17,500.06 times greater than gravity. A 250-pound Santa (which seems ludicrously slim) would be pinned to the back of his sleigh by 4,315,015 pounds of force.

In conclusion - If Santa ever DID deliver presents on Christmas Eve, he's dead now.

(A rebuttal to this classical interpretation can be found at http://physics.wm.edu/Courses/Phys101/santa.html)