

1976

## Quickies

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designs had further ranges than others. Ranges of 250 feet were consistently attained by the cannons fired at 45-degree launches. Since these firings, we have made a launcher which holds the cannon while exposing only the firing hole. The piezoelectric starter fits into this hole and this greatly reduces the incidence of slightly burned fingers which resulted from earlier firings using matches. Actual ranges attained, fell short of theory by 5 to 10%. This led nicely into a discussion of air resistance which varies as the square of the launch velocity.

### **Conclusion**

By using this simple, inexpensive cannon, many fundamental principles of projectile theory were demonstrated and tested. In addition to teaching the fundamentals of projectile physics, the physics of design was also introduced. As a result of this activity, the Cannon Design Contest is an annual event and the Science Club at Central High School has started a Cannon Corp that fires cannons, minus projectiles, at football games. Most teachers and students will get caught up with the challenge of cannon design theory and get a taste of physics in action through application of sound physical principles.

Editorial note: The ISTJ Reviewing Board cautions teachers to recognize the potential hazards involved in this activity which, if properly supervised, dramatically and successfully demonstrates the principles of projectile physics. Correspondence with the author indicates that the cannons discussed in this article were fired a total of 50 times over a two-year period without serious mishap, the only injuries sustained were slightly burned fingers prior to the use of the piezoelectric starter. The hazards faced in this article are similar to those confronted in amateur rocketry.

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### **Quickies**

Joe Moore of the ISTJ Reviewing Board and Science Consultant for the Muscatine-Scott County School System has suggested that the ISTJ devote a portion of the journal to brief notes concerning ideas that facilitate classroom science instruction. We will give the suggestion a try.

If you have discovered or tried something in your classroom that has made your instruction more effective or easier, share it with other science educators by typing a brief note and sending it to Editor, ISTJ, Biology Department, University of Northern Iowa, Cedar Falls, Iowa 50613. Be sure to include your name and school system so that proper credits may be given in the journal if your idea is accepted for publication. Ideas for any level of instruction are appropriate. Come on you science teachers get those cards and letters rolling in.