

## CWSF 2012 - Charlottetown, Prince Edward Island



### James Lees

#### The Rail Gun: A Renovating Ratio

**Challenge:** Discovery

**Category:** Junior

**Region:** Chignecto East

**City:** Merigomish, NS

**School:** East Pictou Rural Middle School

**Abstract:** A rail gun is also known as a linear magnetic accelerator. It uses the electromagnetic field to propel projectiles at high speeds. In the experiment devised several different variables were tested and results were recorded for each. The rail gun constructed produced semi consistent results. The hypothesis was disproved however it was found that the approach to experimentation could be modified to produce favourable results.

#### Biography

I am a grade 8 East Pictou Middle School student, from Nova Scotia and I am planning to attend Cambridge University to study Theoretical Physics. I have received the Nova Scotia Renewable energy prize for one of my science fair projects, also some of my hobbies include reading, writing, and attending museums on my summer vacation. I was inspired to create my project when I finished reading Physics of the Impossible by Michio Kaku. He discussed rail guns and their applications for space and military technology. I then decided to develop a ratio to predict their movements. I would recommend that any students wishing to create a science fair project start it as early as possible and think of a creative and unique idea. Due to the fact that my experiment disproved my hypothesis from one perspective of experimentation, I am planning to experiment with my rail gun with alternate variables such as higher voltage and lower amperage if the appropriate funds can be acquired.

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