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*Magnetic Linear Acceleration*

The purpose of this science fair project was to see how many magnets it takes to launch the final ball at the fastest velocity. If the test increases the number of magnets in between each jump, then the velocity of the end ball will be higher when it goes off. This is because there will be more magnetic attraction bringing the previous steel ball from the last jump to it, and the next ball will launch at a faster velocity. The independent variable is how many magnets are in between each jump. More magnets will be added to change this. The dependent variable is the velocity of the last steel ball bearing. It will be measured with a slow motion camera and a timer. Some control variables are the length of the ramp (4 inches), the angle of the ramp, and the distance between each of the magnet jumps (4 inches). In the middle was 4 magnets in each jump, and the average velocity was 153.965 cms per second. The fastest was the 3 magnets and the average velocity was 161.31 seconds, and the slowest was 2 magnets with an average time of 145.2676 cms per second. The hypothesis was rejected because 4 magnets did not get the fastest time, but three magnets did. The average for 4 magnets was slower than the three magnets. This can benefit scientists if they wanted to launch something to space.