



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Christopher J. Raguse	Project Number J1530
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Project Title The Chill Factor

<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To prove that altering a typical magnet's temperature will affect its magnetic strength.</p> <p>Methods/Materials Using two refrigerator magnets, I will test to see if changing the magnet's temperature through different variables (room temperature, boiling hot temperature, and freezing temperatures), that the colder I get the magnet the stronger its magnetic field will be and therefore be able to pick up more Ball Bearings.</p> <p>Results</p> <p>Magnet A Steel BBs: RT Test 1. 112BBs RT Test 2. 113BBs RT Test 3. 119BBs Avg 114 R2BBs HT Test 1. 103BBs HT Test 2. 103BBs HT Test 3. 103BBs Avg 103BBs FT Test 1. 130BBs FT Test 2. 124BBs FT Test 3. 123BBs Avg 125 R2BBs</p> <p>Magnet A Copper BBs: RT Test 1. 104BBs RT Test 2. 99BBs RT Test 3. 102BBs Avg 101 R2BBs HT Test 1. 98BBs HT Test 2. 104BBs HT Test 3. 100BBs Avg 100 R2BBs FT Test 1. 138BBs FT Test 2. 137BBs FT Test 3. 144BBs Avg 139 R2BBs</p> <p>Magnet B Steel BBs: RT Test 1. 112BBs RT Test 2. 117BBs RT Test 3. 112BBs Avg 113 R2BBs HT Test 1. 92BBs HT Test 2. 103BBs HT Test 3. 99BBs Avg 98BBs FT Test 1. 121BBs FT Test 2. 122BBs FT Test 3. 128BBs Avg 123 R2BBs</p> <p>Magnet B Copper BBs: RT Test 1. 103BBs RT Test 2. 102BBs RT Test 3. 100BBs Avg 101 R2BBs HT Test 1. 92BBs HT Test 2. 89BBs HT Test 3. 94BBs Avg 91 R2BBs FT Test 1. 124BBs FT Test 2. 119BBs FT Test 3. 117BBs Avg 120BBs</p> <p>Conclusions/Discussion Based on my results, I learned that changing a magnet's temperature does affect its magnetic field. The atoms within the magnetic field of the magnet moved slower and closer together allowing the magnet to pick up more Ball Bearings.</p>

Summary Statement My project is about magnets and the effect temperature change has on it.
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Help Received Father helped in making the graphs, and cutting out display board letters; Mother helped organize binder, and glueing of board.
