



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Benjamin Formaker-Olivas	Project Number J1907
Project Title How Does the Intensity of a Magnetic Field Affect the Regeneration Rate of a Planarian?	
Objectives/Goals My objective was to test my hypothesis that if the intensity of a magnetic field is increased, then the regenerative rate of a planarian that is exposed to that magnetic field will increase. Methods/Materials I tested the regeneration rates of planarians exposed to magnetic fields caused by neodymium magnets. Using a gauss meter, I measured the intensity of magnetic fields at the surface of 1 neodymium magnet (1,650 gauss) and at the surface of 3 neodymium magnets stuck together (3,550 gauss). I placed 1 planarian bisected at the auricle in each of 6 Petri dishes along with 50 ml. of spring water. Two of the dishes were not exposed to any abnormal magnetic fields (controls), with 2 dishes each exposed to the fields caused by 1 magnet and by 3 magnets placed under the Petri dishes, respectively. I compared the pre- and post-bisection total lengths, number of tail drops, and visible head and tail regeneration over 8 days. Results Although the total length measurements were unreliable, there appeared to be a possible accelerated effect on tail dropping and visible regeneration from exposure to strong magnetic fields. Conclusions/Discussion My experiment did not conclusively support my hypothesis and was complicated by the occurrence of tail dropping and by planarian contraction. However, because my results did indicate a possible link between exposure to strong magnetic fields and accelerated regeneration, and because there has only been limited research in this area with other species, my experiment suggests that further research is justified.	
Summary Statement My project aimed to determine whether the intensity of a magnetic field has an effect on the regeneration rate of a planarian.	
Help Received Dr. Duane Doty, Professor in Cal. State Northridge Department of Physics & Astronomy, provided gauss meter to help measure magnetic field strength of magnets; mother placed orders at my direction for materials and helped type this and my County Science Fair application; parents paid for materials.	