



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Grant J. Anderson	Project Number J2103
Project Title A Sticky Situation	
Objectives/Goals To determine which type of tape has the greatest adhesive force from among five types of tape: duct tape, scotch tape, black electrical tape, masking tape, medical tape.	
Abstract Methods/Materials Rig a pulley to the ceiling of the garage. Thread twine through the pulley. Attach small bucket to one end and tape applied to wood on the other end. Gradually fill bucket with sand until tape starts to peel. Find mass of sand and bucket then convert to Newtons to find adhesive force. Scissors, 50.48 cm X 9.36 cm X 4.28 cm block of wood, 5 m thin nylon twine, scotch magic tape, masking tape, black electrical tape, duct tape, medical tape, small bucket with handle, sand, utility knife, metric ruler, triple beam balance, pulley, carabineer.	
Results Scotch tape, 1.80 Newtons. Duct tape, 6.19 Newtons. Black electrical tape, 4.00 Newtons. Masking tape, 4.39 Newtons. Medical tape, 5.50 Newtons.	
Conclusions/Discussion I accept my hypothesis that duct tape has the greatest adhesive force. I chose this project because I was fascinated by how tape adheres to surfaces. I tried to apply a force perpendicular to the attachment point of the tapes by rigging the pulley as high as possible. I tried to minimize error by trimming the tapes to the same length and width. Some tapes would rip before peeling off so I folded them back three times before attaching the twine. Next time I will test the tape on a less porous surface like glass. I would also test the tapes by pulling them backwards at a 45 degree angle.	
Summary Statement To determine which tape would withstand the most force while adhering to a wooden surface.	
Help Received Mother helped design and produce my display. Mr. Post helped design my data table and provided the triple beam balance and the basic idea for my testing apparatus. Father assisted in conducting the experiment and in making the computerized graph.	