



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Chase R. Hughes	Project Number J0210
Project Title You Should Have Seen the One that Got Away	
Objectives/Goals The purpose of my project is to see what combination of knot and fishing line will hold the most mass so that you have the best chance of the fishing line not breaking, thus allowing the fish to NOT get away. I wanted to determine this because I like fishing and would like to know the best combination so that I do not have one that "gets away."	
Abstract Methods/Materials I tested my project by measuring 50cm of monofilament fishing line. I did this because if I just cut it anywhere, the fishing line would stretch at different lengths and could affect how much mass the line would hold. Then with the Tribe Beam Balance, I measured 500grams of rice in a 10 cups that each weighed 35 grams. I would then tie the same knot to both ends of the line to a hook, thus giving me a hook on each end of the line. I then attached one hook to a cabinet and the other to a bag. I slowly poured the rice into the cup, watching the string as tension was applied to it. I kept a tally mark of the total number of cups added to the bag, and once the line snapped, I measured the rice that was left over in the cup and subtracted its' mass from a full cup. I added my tallied numbers and this last number together in order to determine the amount of mass that the line could hold.	
Results During testing, the Clinch Knot highest amount held on the eight pound test was 2,466.5 grams, the least amount was 498 grams, and the average was 1,570 grams. The six pound test high was 2,167.5 grams, the low was 500 grams, and the average was 1,373 grams. With the Uni-Knot, the most amount held on the eight pound test was 5,500 grams, the least held was 1,500 grams, and the average held was 2,606 grams. The six pound test high was 3,500 grams, the low was 2200 grams, and the average was 2606.	
Conclusions/Discussion I learned that using different combinations of fishing line and knots does affect the amount of mass that the line can hold. After completing my trials, I saw that the Uni-Knot was able to hold more mass than the Clinch Knot. These results showed me that the combination of the eight pound (8 lb) line and the Uni-Knot is the most effective for holding a large amount of mass, yet the six pound (6 lb) line with the Uni-Knot consistently held the highest average and is the more reliable line and knot combination.	
Summary Statement Determining the best combination of pound-test fishing line and knots in order to hold the most amount of mass.	
Help Received Mom - board, supplies, driving; Dad - supplies; Teacher - supervision; Sister - board supplies	