



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Brenna A.W. Fitzpatrick	Project Number J1206
Project Title Is It Worth Your Money? Is There a Way to Make Blackjack Insurance Worth It?	
Objectives/Goals The objective of this project was to find out if making an insurance bet in blackjack was worth your money and if different deck sizes effected insurance bets.	
Abstract Methods/Materials When writing the porgram I made it so that a game of blackjack would be repeated 1 million times. When an option to get insurance came up four different stratagies would be used: Betting when you had no tens/face cards in your hand, betting with one ten/face card in your hand, betting with 2 tens/face cards in your hand and counting cards. Counting cards is when you count the total amount of cards and the amount of tens/face cards played. If the amount of facecards remaining is over 33% of the total cards left, you buy insurance. I did this in four different deck sizes: Normal(52 cards) Doubled(104 cards) Tripled(156 cards) and Quadrupled(208 cards)	
Results In the 52 card deck the no tens strategy lost you about 3 cents per bet. One ten lost you 9 cents, two tens lost you 14 cents and counting cards earned you about 13 cents. In a 104 card deck the no tens strategy lost you about 6 cents per bet. One ten lost you 9 cents, two tens lost you 11 cents and counting cards earned you about 11 cents. In a 156 card deck the no tens strategy lost you about 6 cents per bet. One ten lost you 9 cents, two tens lost you 7 cents and counting cards earned you about 11 cents. In a 208 card deck the no tens strategy lost you about 7 cents per bet. One ten lost you 8 cents, two tens lost you 10 cents and counting cards earned you about 10 cents.	
Conclusions/Discussion Using simple strategies(no tens, one ten, two tens strategies) were no good and lost you money. However, counting cards earned you about 10-13 cents a bet. Different deck sizes do make a difference. When counting cards or betting with no tens, its best to do with a 52 card deck. The one ten and two ten strategy works best with larger decks.	
Summary Statement I wrote a computer program to find out if buying insurance in blackjack is worth your money.	
Help Received My dad taught me how to program and helped me out when I got confused.	