



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Todd B. Christensen	Project Number 22696
Project Title TerraBattles: A Role-Playing Game for the PC using My Own Scripting Language	
Abstract Objectives/Goals To show that it is feasible to develop a role-playing game (RPG) for a personal computer in real mode without any dedicated gaming hardware, such as that found in a Sony PlayStation. Although many games have been produced for PC's in the past, no role-playing games with "dedicated system console-like" features have ever been commercially written and developed for the PC. This means creating my own scripting language for certain aspects of the program. Methods/Materials This role-playing game was written using Microsoft QuickBASIC 4.5, Microsoft Macro Assembler 6.15, and Borland Turbo Assembler 4.0 over the course of a year and a half. Modified (by me) parts of the DirectQB 1.61, Future.Library 1.35, and SVGAQB graphical libraries as well as DS4QB++ were used to facilitate high-speed graphics and sound. I created and wrote my own editors to develop the game as well. Results TerraBattles has many of the characteristics of professional role-playing games written for dedicated consoles. For example, it has it's own unique scripting language and engine comparable to those used by commercial role-playing games. Conclusions/Discussion Inventing a working scripting language and programming an interpreter to run the scripts is more challenging than I had at first thought it would be. This was compounded by the fact that the 640 kilobyte conventional memory barrier severely limited the power of TerraBattles' scripting language. Although I found Assembly programming to be difficult at first, I learned that it proved extremely useful in optimizing the program's speed. I found that it is therefore possible to develop a role-playing game for a personal computer such as I set out to do.	
Summary Statement TerraBattles RPG is about making a role-playing game for the PC using real mode, game console-like programming and concepts.	
Help Received Brother helped type Abstract; Friend helped with computer graphics and sound.	