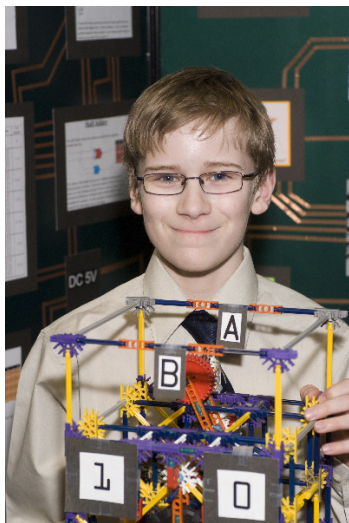


CWSF 2009 - Winnipeg, Manitoba



Patrick Kotelko

Logic Gates and the K'nex Computer

Division: Earth & Environmental Sciences / None

Category: Junior

Region: St. James-Assiniboia

City: Winnipeg, MB

School: Golden Gate Middle School

Abstract: This project involved the design and construction of a series of logic gates forming a binary half-adder computer implemented using K'nex and balls. Research into the binary code and logic gates provided the background understanding necessary to design and build a mechanical representation of an electrical system suitable for explaining the fundamentals of computers to an audience of all ages.

Biography

Patrick Kotelko is a Grade 7 student in French Immersion at École Golden Gate Middle School in Winnipeg, where he plays tenor saxophone in the jazz band, percussion in the concert band, and works in the cafeteria one day per week. During the winter months, he participates in downhill ski racing right here in Manitoba. In his spare time, Patrick enjoys computer games and building things. When he grows up, Patrick wants to be an engineer like his parents. In previous science fairs, Patrick has always won gold, and in Grade 5, he won the Best-in-Fair project at the St James School Division fair with a project about the 1997 Manitoba Flood.

Awards

Value

The University of Western Ontario Scholarship Silver Medallist - \$1500 Entrance Scholarship Sponsor: University of Western Ontario	\$1 500
Silver Medal - Computing & Information Technology - Junior Sponsor: Intel of Canada, Ltd.	\$700
Total	\$2 200