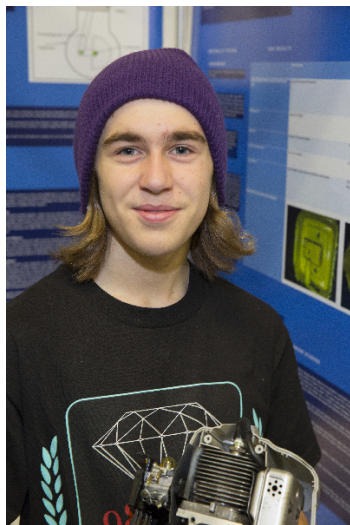


CWSF 2014 - Windsor, Ontario



Keaton Chadwick

Throttling a Two Stroke Engine Through Crankcase Compression

Challenge: Innovation

Category: Intermediate

Region: Peel

City: Brampton, ON

School: Chingacousy S.S.

Abstract: The 2-stroke engines that power the majority of scooters and rickshaws in developing countries have a tendency to run very inefficiently at low speeds, causing excessive fuel consumption and pollution, and little power. An alternative approach of throttling these engines was investigated as a means of improving low speed efficiency, and therefore improving emissions, fuel consumption, and power.

Biography

My name is Keaton Chadwick. I am a Grade 10 student at Chinguacousy Secondary School in Brampton Ontario, and am part of the regional Sci-Tech program offered there. One main sport I participate in is motocross, and am a member of the Oshawa-Competition-Motorcycle-Club (OCMC) where we race on Tuesday nights during the warmer months. I am also an avid skier. I learned to ski at age two, and love to ski natural, challenging terrain including deep powder, rocks, cliffs, and glades (skiing in the woods). I often visit larger mountains, and skied at Revelstoke, BC this winter. My project stems from my interests in mechanics, engineering, engine theory, and motorsports. At home I work with engines and various machines on a daily basis, be it machining parts, modifying engines, welding, etc. One of my hobbies is building small motorcycles and motorized bicycles using garbage-picked engines from lawnmowers or trimmers that I repaired and modified to make more power. My current project involves motorizing a BMX bike with a vintage wankel rotary engine, made by Fitchel and Sachs in the 60's and 70's. The engine will be completely reworked internally, and will drive a transmission from a Kawasaki dirt bike.

Awards

Value

Excellence Award - Intermediate - Bronze Medal Sponsor: Nuclear Waste Management Organization	\$100
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
Total	\$1 100