

## CWSF 2013 - Lethbridge, Alberta



### Emily Cameron

#### An Arm For An Arm

**Challenge:** Innovation

**Category:** Senior

**Region:** Chignecto West

**City:** Shubenacadie, NS

**School:** Hants East Rural High School

**Abstract:** An Arm For An Arm is an investigation into the practicality of using Nitinol wire as a muscle for a prosthetic arm. The investigation focused on construction techniques and configurations, range of motion, and lift capacity of a model arm. It was determined that the model arm was capable of lifting a mass and doing practical work.

#### Biography

My name is Emily Cameron; I am a grade 11 student at Hants East Rural High, in Milford, NS. Some of my interests outside of school include horseback riding, soccer, camping, reading, drawing, and walks in the woods to name a few. I'm an active member in Scouts Canada and 4-H Canada. Through Scouting, I participate in seasonal camps, canoeing, and hiking. I have also received my Chief Scout Award and the Meddle of the Maple Award. Through 4-H, I take part in the Light-Horse, Poultry, Junior Leader, Real Skills and Great Outdoors projects; I am also a member of the Woodsmen and Tug-Of-War teams. The idea for this project came from thinking of ways to improve the lives of people with amputations. Some plans for further investigations include further testing to achieve the desired range of motion. The arm only achieved 1/5th of the range of motion; if an individual was able to lift a fork to their mouth to eat it would be a huge improvement in their day to day life. If I could give advice to another student about science fair it would be to choose something something in which they are truly interested.

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