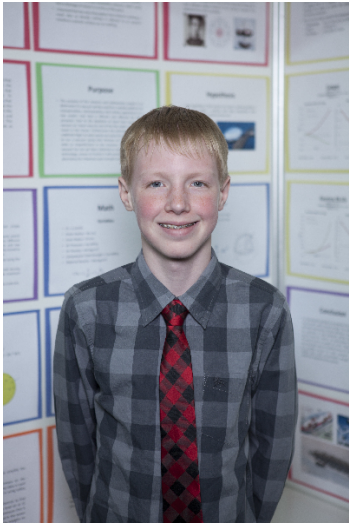


## CWSF 2013 - Lethbridge, Alberta



### Ethan McNeill

#### The Vacuum Factor

**Challenge:** Discovery

**Category:** Intermediate

**Region:** Calgary Youth

**City:** Calgary, AB

**School:** R. T. Alderman School

**Abstract:** "The Vacuum Factor" is a study into the feasibility of lighter than air flight using the absence of air, also known as vacuum, to hold a sphere aloft. Different materials that could be used were researched to determine if they would hold up under the compression of atmospheric pressure and yet be light enough to lift a cargo of significant weight off the ground.

#### Biography

My name is Ethan McNeill and I am a grade 9 student at R.T. Alderman in Calgary, Alberta. I have always been a science and math loving kid. I have spent hours reading through science magazines and the internet for the latest scientific advances. My main areas of interest are physics and engineering. I dream of one day being as successful as my great grandfather, Peter Anderson, who was a thinker and invented many machines including the rock picker. My project on vacuum airships began as a question. What is lighter than air and helium? When I began working on the equations and doing research I discovered I was not the first to think of this concept. Francesco Lana De Terzi, a monk, had actually worked on it in 1661. However his idea never came to fruition because of the materials available. I however, am hoping to see this technology through and help future generations with it. My advice to future participants: Be original, work hard and take risks. Entering my school science fair was the beginning of an amazing opportunity. I am so thankful to have made it this far and I hope to do well this year.

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