

## CWSF 2014 - Windsor, Ontario



### Evan Mason

#### How Sizes of Sound Holes in Acoustic Instruments Affect Volume Projection

**Challenge:** Discovery

**Category:** Intermediate

**Region:** Southeast Alberta

**City:** Medicine Hat, AB

**School:** Seven Persons School

**Abstract:** By taking a wooden box, hockey board with different sized holes, a small speaker and a decibel reader, I calculated the average decibels for varying sizes of holes in an acoustic box. I found that the size of a sound hole in an acoustic instrument does affect the volume. Some real life applications are megaphones, boat horns, and other things used to alert people.

#### Biography

My name is Evan Mason, and I come from a very musical family. I myself play many brass instruments, the piano and the cello. My father is a guitarist, and I got the inspiration of my project from noticing the difference in holes on the acoustic instruments. The cello had thin "f" holes, and the guitar had a large circular hole. My project was driven by this curiosity. My plans for further investigations in this project would be whether the placement of the decibel reader on the radius of the box producing the sound affected the volume being heard. Some advice I would give other students would be learning how to talk under pressure, getting an idea you like and that you can relate to, and putting in tonnes of work. Everything above must have been right, because I somehow made it to Nationals!

Youth Science Canada  
PO Box 297  
Pickering ON L1V 2R4  
[www.youthscience.ca](http://www.youthscience.ca) / [info@youthscience.ca](mailto:info@youthscience.ca)  
416-341-0040