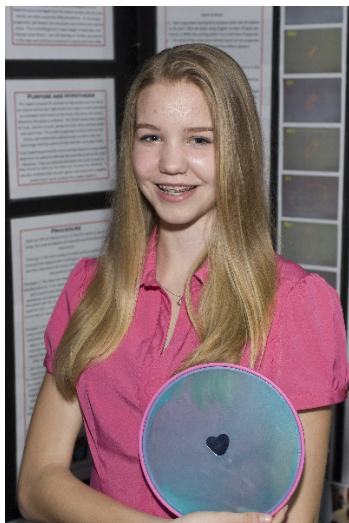


## CWSF 2010 - Peterborough, Ontario



### Arielle Vanderstine

#### Seeing Sound: Math Meets Music

**Division:** Physical & Mathematical Sciences

**Category:** Intermediate

**Region:** Prince Edward Island

**City:** Stratford, PE

**School:** Stonepark Intermediate School

**Abstract:** This project studied factors in music which could produce visual patterns using a laser and speaker system. The system was built of common materials to test popular music. The patterns obtained were determined mostly by volume and drum and bass beats. Different notes produced unique patterns with amplitude variation between octaves. This technology could be used to allow the deaf to see and enjoy music.

#### Biography

Arielle Vanderstine is a fourteen year-old grade nine student from Stonepark Intermediate in Prince Edward Island who is active in both her school and community. She is always busy, participating in several clubs and teams at her school. She plays in her school's concert band, jazz band, and strings programs and enjoys composing music in her spare time. She was selected for the school field hockey, cross country, and golf teams. She is also a member of the yearbook committee, 'Team Tiger' (the school's leadership group), and student government. Arielle is also busy outside of her school. During the summer, she plays, referees, and coaches soccer as well as running as a member of the PEI Roadrunners and golfing leisurely and competitively. She is an active volunteer, helping with community events, sports tournaments, and the recent PEI 2009 Canada Games. Arielle is looking to pursue a career in science, possibly in the field of medicine.

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