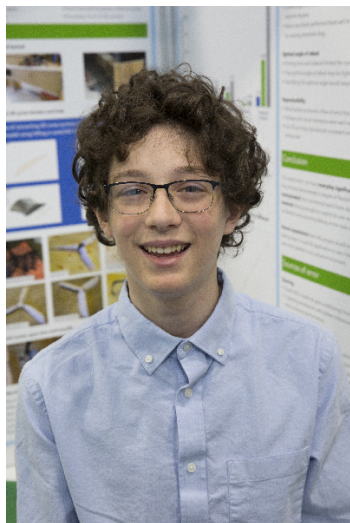


# CWSF 2019 - Fredericton, New Brunswick



## Luca Ménard

### Harnessing Nature's Power

**Challenge:** Energy

**Category:** Junior

**Region:** Frontenac, Lennox & Addington

**City:** Kingston, ON

**School:** King's Town School

**Abstract:** Biomimicry is used to improve engineering designs. I designed, produced and tested nature inspired wind turbine blades in a controlled wind tunnel. Using CAD software, I modelled and 3-D printed: whale tubercle, maple key, rigid and flexible dragonfly blades. The flexible dragonfly design blade outperformed at all wind speeds. Other designs performed inferior to a commercial blade. Nature inspired inventions can outperform conventional commercial designs.

### Biography

My name is Luca Menard, and I am a grade seven student at King's Town School in Kingston, Ontario. Throughout the year I participate on a First Lego League (FLL) robotics team. This year we earned the opportunity to go to the Ontario East Provincial Championships. I head a robotics club at my school and am the layout editor and comic inker/editor of the school newspaper. During the summer months I enjoy kayaking, sailing and swimming. In fall and winter, I appreciate snow sports like alpine and cross-country skiing and I also curl at a curling club. In my spare time you can find me with my nose in a book. I love reading. Someday I would like to be an aerospace engineer. I was inspired to undertake this project because I wanted to use it as an opportunity to learn more about aerodynamics and 3D design. I have partaken in three regional science fairs. This is my first CWSF and I am excited about the possibilities it will hold for me. My piece of advice to other young scientists is to choose a topic that truly interests you.

### Awards

### Value

Excellence Award - Junior - Bronze Medal Sponsor: Youth Science Canada	
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
Total	\$1 000