

# CWSF 2015 - Fredericton, New Brunswick



## David Tobias Holcer

### Benford's Law

**Challenge:** Innovation

**Category:** Junior

**Region:** Greater Vancouver

**City:** Vancouver, BC

**School:** David Thompson Secondary

**Abstract:** Benford's Law, is a mathematical law, which states that numbers in data sets that we don't control (e.g. G.D.P. or population) tend to start with the digit 1 more times than the digit 9. I tested this law with different data sets using programming, and found that as I had predicted, it holds true. I then began observing patterns to predict data sets' future values.

### Biography

I am a 14 year-old student at David Thompson. Math is my favourite subject, and hobby. This is shown through my keen interest in tackling difficult problems, and in math contests. The math team I am part of at DT made it to the provincials, which I helped make possible. Ever since I was little, I was interested and fascinated by the patterns I would find. This later inspired another hobby, lanyards, or string art. I am also very interested in computer science, which is closely related to my passion for math. These passions helped inspire me to choose Benford's law as the topic for my science fair. Benford's law is directly related to all of my hobbies, so as I was commonly looking for problems, I came across it. After researching it, I decided to test it using computer programming. After running tests on different data sets, I concluded that as I had predicted, the law held. In the future I would like to continue looking for patterns in Benford's law to help predict future data set values. To students thinking about doing a science fair project I would say go for it, and choose something that fascinates you.

### Awards

### Value

Excellence Award - Junior - Silver Medal Sponsor: Youth Science Canada	
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
Total	\$2 000