

# CWSF 2011 - Toronto, Ontario



## Benjamin Friedman

### Terminal Velocity of Drops Rising in Water due to Buoyancy: What a Drag!

**Challenge:** Discovery

**Category:** Intermediate

**Region:** Cariboo Mainline

**City:** Kamloops, BC

**School:** Kamloops Secondary

**Abstract:** The purpose of my project was to test whether drops of oil, hexane, and gasoline reached terminal velocity when subjected to a buoyant force. I accomplished this by filming the drops as they ascended and analyzing the data digitally. I also determined whether the terminal velocity observed matched the predicted value. It didn't, but I modified the standard formula to explain my results.

#### Biography

I was born in Kamloops, British Columbia at the age of zero. Ever since I was a baby, I have been fascinated by the world around me. My older brother Nathan would sometimes tell me about the things that he was learning. He'd tell me about atoms and what they're made out of. He'd also tell me about algebra, politics, and literature. I didn't understand everything that he told me, but these discussions succeeded in igniting a spark of curiosity. When I saw the movie "2001: A Space Odyssey" two years ago, that glow waxed into a flame, which then burst into a raging intellectual fire after I saw and read "Cosmos" by Carl Sagan. "Cosmos" introduced me to the scientific method, along with an amplified appreciation of physics, the current direction of my career vector. I also enjoy chess, math, literature, and video games. I am in Grade 10 at South Kamloops Secondary School, where I play clarinet in the concert and jazz bands, and am in the Science Club.

#### Awards

#### Value

Excellence Award - Intermediate - Gold Medal Sponsor: Youth Science Canada	\$1 500
The University of Western Ontario Scholarship Gold Medallist - \$4000 Entrance Scholarship Sponsor: University of Western Ontario	\$4 000
Total	\$5 500